From: Chrissie Juliano
To: Hayes, Patty
Subject: BCHC Friday Email:[Friday, Feb. 28, 2020]: COVID-19 updates and more!
Date: Friday, February 28, 2020 11:16:29 AM

BCHC Friday Email

COALITION + MEMBER UPDATES & REQUESTS

BCHC Updates

- BCHC In-Person Meeting: Thank you so much to those members who joined us in DC! We will be sending follow-up materials and notes shortly. Please send reimbursement forms and receipts to **Gabby** (REMINDER: We do not use a per diem and will only reimburse actual amounts, so send all receipts from cabs, parking, meals, etc.).

In Case You Missed It...

- Big news out of Philly this week:**Judge clears path for Philadelphia nonprofit to open safe-injection site to combat overdoses**: US District Judge Gerald Austin McHugh ruled Tuesday that the nation's first "overdose prevention site" would not violate federal law. The US Attorney's Office for the Eastern District of Pennsylvania has said it will appeal the latest order, according to a press release. Safehouse, the nonprofit slated to open the overdose prevention site, has decided to pause plans to open the site next week to give the community an opportunity to have “meaningful conversations,” about what a site in their neighborhood would mean. **Philadelphia** has been working to educate the community about the forthcoming overdose prevention site. **San Francisco** seems encouraged by the ruling as Thursday the Mayor and Supervisor announced a plan to introduce an ordinance next week that would allow nonprofits to seek permits to operate "overdose prevention programs."
- BCHC Members on COVID-19 in Wall Street Journal: Recent **article** from the WSJ on the local response to COVID-19 included quotes from Chicago, Los Angeles, Santa Clara County, and Seattle! Great highlight showing that public health really

happens at the local level.

ADVOCACY & POLICY

2019 Coronavirus (COVID-19)

*BCHC is working closely with NACCHO and other national partners to gather and share information about COVID-19 for both advocacy and programmatic purposes. Should you have specific needs that we could let CDC or other partners know about, pl**ease let Chrissie know.** Several of you have reached out with questions or for phone numbers or whatever. Please continue to do so as needed. You can also submit Your Stories About COVID-19 Response Efforts to NACCHO **here**.*

- NACCHO is doing a weekly COVID-19 digest that summarizes calls and other issues each week, as well as share guidances, etc. They are happy to add BCHC contacts as well. It is likely many of your preparedness folks are receiving it. *Chrissie forwarded it out to Health Officials with additional information about how to subscribe. Reach out if you need more info or do not receive it.*
- **NEW CDC RESOURCE FOR RETURNING TRAVELERS**: CDC's new COVID-19 Check and Record Everyday (CARE) booklet contains information designed to help returning travelers understand self-monitoring, conduct daily symptom checks, and directions on what to do should symptoms arise. It also contains a list of phone numbers that travelers can use to connect with State and Local Health Departments. The printed version of this booklet will replace the T-HAN and temperature and symptom log currently being distributed at F11 airports where enhanced screening is taking place. It will also be distributed (if needed) at non-entry screening ports of entry where CBP refers CDC a traveler who meets screening criteria. Quarantine stations will receive the first weekly shipment and begin distribution to travelers by Friday, February 28th.
- Congressional Hearings: This week several congressional committees held hearings – **House** and **Senate** Labor, Health & Human Services (LHHS) Appropriations Subcommittees, **House Energy and Commerce Health Subcommittee** and **House Ways and Means Committee** – with HHS Secretary Alex Azar and other federal health officials on the Administration's FY2021 budget request and how the Administration will handle the coronavirus outbreak in the U.S. Azar was questioned by the committees on the President's FY2021 budget request that would cut about 9% of funding for HHS including cuts to CDC in the midst of the COVID-19 outbreak. Secretary Azar defended the Administration's budget request in his **testimony**. At the Ways and Means Committee hearing, Representative Suzan DelBene (D-WA) discussed the importance of backfilling funds that have been spent by local health departments and asked Secretary Azar if he would make sure that local and state health departments were reimbursed for

their efforts. Secretary Azar responded: "We want to work on the supplemental package to make sure the state and local governments are fully funded, including if there's reimbursement needed."

- Congressional proposals for supplemental funds are all over the map, but it sound slike a $4 to $6 billion package will move soon, with dollars to get out to locals/states.
- HHS Updates: Azar **told lawmakers on Thursday** that at least 40 public health laboratories can now test for COVID-19 and it is expected that 93 labs will be able to conduct tests by Monday. Yesterday HHS confirmed that it is in the process of shifting $5 million from substance abuse and mental health programs, in addition to raiding $37 million from the Low Income Home Energy Assistance Program.
- CDC Updates: CDC Director Dr. Robert Redfield said that the agency is changing testing recommendations so that all patients suspected of having symptoms of COVID-19 will eligible to be tested. The CDC is warning the public that a COVID-19 outbreak in the U.S. is "inevitable," and citizens should be prepared for an outbreak that could cause a disruption to daily life.
- President Trump announced the Vice President Mike Pence will head the COVID-19 outbreak task force within the administration, with global health official Ambassador Debbie Birx as the "White House Coronavirus Response Coordinator." It was also announced that Education Secretary Betsy DeVos will create a coronavirus task force to coordinate the Education Department's response to the spread of the disease.
- Other Federal Updates: FDA Commissioner Stephen Hahn told the press that U.S. officials are bracing for potential drug and medical device shortages from the COVID-19 outbreak. NIH infectious disease expert Tony Fauci said that his agency's vaccine development effort is on track to start human trials within two months, which would be the fastest turnaround on preparing a vaccine for studies; however, the vaccine is still months away from widespread testing and at least a year away from approval.

Tobacco/E-Cigarettes:

- Today, the House passed **H.R. 2339, the Protecting American Lungs and Reversing the Youth Tobacco Epidemic Act of 2020**, which among other things restricts flavors. **Read the BCHC press release thanking the House**. Unfortunately, it is not likely that the Senate will take up the bill.
- **39 States Join in Bipartisan, Multistate Investigation of JUUL Labs:** The e-cigarette manufacturer JUUL is under investigation by attorneys general for 39 states to determine whether the company purposely targeted youth and made misleading claims about its product. The state officials said they will explore whether JUUL has misled the public about the safety, risks and nicotine levels in its popular e-cigarettes.
- **E-Cigarette Advertising Expenditures in the United States, 2014-2018**: Tobacco product advertising has been shown to reach, and influence initiation among youth.

This study in *Tobacco Control* assessed trends in e-cigarette advertising expenditures in the U.S during 2014-2018. Total e-cigarette advertising expenditures in print, radio, television, Internet, and outdoors decreased substantially from $133 million in 2014 to $48 million in 2017, followed by an increase to $110 million in 2018. By media type, expenditures were highest for print advertising, irrespective of year. Continued monitoring of e-cigarette advertising is important to inform tobacco control strategies.

Other

- This week, Philadelphia announced a **citywide commitment** to providing 1,300 primary care doctors with the necessary waiver and training to prescribe buprenorphine, with an ambitious goal of reaching 400 doctors by the end of 2020. The Department of Public Health has also announced a new 24/7 hotline to provide free clinical consultation on buprenorphine to the newly waivered health care providers.
- **Massachusetts strikes 'unprecedented' settlement with insurance giants on behavioral health**: MA State Attorney General announced Thursday that she has reached groundbreaking settlements with a group of insurance companies to provide increased access to health services for more than a million residents in the state who to struggle with mental and behavioral health issues.

NACCHO's News from Washington

- *HHS Awards $117 Million to End the HIV Epidemic*: On Wednesday, HHS through the Health Resources and Services Administration (HRSA) awarded $117 million to expand access to HIV care, treatment, medication, and prevention services. The Ending the HIV Epidemic: A Plan for America (EHE) initiative aims to reduce the number of new HIV infections in the U.S. by 90% by 2030. The EHE initiative awards focus on 48 counties, Washington, DC, and San Juan, Puerto Rico, where more than 50% of new HIV diagnoses occurred in 2016 and 2017, as well as the seven states with a substantial HIV burden.

RESOURCES & OPPORTUNITIES

Resources

- **Between the Lines: Understanding Our Country's Racialized Response to the Opioid Overdose Epidemic:** New report from the Center for Law and Social Policy that provides an overview of how history and the response to the opioid overdose epidemic play a part in widening health inequities, and what we need to do.

- **Wellness Funds: Flexible Funding to Advance the Health of Communities:** This report from the Funders Forum on Accountable Health, a collaborative at GWU to advance accountable communities for health, describes key elements for creative financing for aligning resources in communities to advance population health and health equity. Examples of Wellness Funds are provided from Vermont, Washington state, and California.

Opportunities

- ***CLOSING SOON*** **Public Health Innovation Summit & Showcase: The Public Health National Center for Innovations** will host this invitation-only event on June 23, 2020, in Washington, DC bringing together leaders from health departments to share and learn from innovative work in public health and other sectors. We aim to share strategies from communities that have used innovation to create meaningful change, discuss barriers and opportunities to innovation in the public health system, and strategize how to advance innovation. Application open until March 6 and available **here**.
- **NACCHO Sentinel Network**: NACCHO is recruiting local health departments to participate in its HIV, STI, and Viral Hepatitis Sentinel Network. The Sentinel Network is an important mechanism for gathering the local health department perspective to share at the federal level. If you have any questions about the Sentinel Network, please email **Kat Kelley** or call 202-507-4223.

WEBINARS, EVENTS + TRAININGS

- WEBINAR SERIES: **Ending the Opioid Epidemic: Strategies for Success Series**: This six-part interactive webinar series will be held Tuesdays in Feb and March. It has been designed to introduce diverse strategies for success in ending the opioid epidemic. Participants will hear from legal, social, medical, and community intervention experts in a strategy-gathering information exchange.
- TRAINING: The Suicide Prevention Resource Center is offering the free online course **Locating and Understanding Data for Suicide Prevention**. The course explores a variety of commonly used data sources for information on suicide deaths and attempts, suicidal ideation, and related factors—as well as new frontiers in suicide surveillance, such as interactive dashboards and real-time data collection.

From: Alan Dorsinville
To: Marcelle Layton
Subject: CLUE Follow Up Documents
Date: Thursday, February 27, 2020 7:52:34 AM
Attachments: Japan MOH Diamond Princess COVIF-19 Field Briefing 2_19_2020.docx
MN_standards_scarce_resources.pdf
Clinical 138 hospitalized nCoV Wuhan_JAMA 2020_Wang.pdf
clinical features 2019-nCoV_Lancet 2020_Huang.pdf
Epi and clinical 99 cases nCoV_Lancet 2020_Chen.pdf

Hello all,

Here are some of the documents that were mentioned during the CLUE Call yesterday including the report on the Diamond Princess cruise ship, Minnesota's strategies for scarce resources, and several articles about COVID-19 symptoms. You can also refer to the CDC site for a summary of clinical presentation.

Also, please let me know if you would like us to continue these CLUE conference calls and if you have a preference for weekly or biweekly by **tomorrow COB**.

Thank you,
Alan Dorsinville
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Published: 19 February 2020

Field Briefing: Diamond Princess COVID-19 Cases

Background:

A cruise ship, named the Diamond Princess, had travel that originated in Yokohama on 20 January and included stops in Japan (Kagoshima), Hong Kong, Vietnam, Taiwan and Japan (Okinawa), before arriving back in Yokohama on 3 February. During this time, a passenger who disembarked on 25 January in Hong Kong, has presented with cough since 19 Jan and was confirmed positive for Novel coronavirus on 1 February. The Japanese government requested that the Diamond Princess stay at port, with no passengers or crew disembarking, in Yokohama when it arrived on 3 February. During 3-4 February, health status of all passengers and crew members were checked by questionnaire by quarantine officers, and respiratory specimens were taken from symptomatic passengers, crew, and their close contacts to test for Novel coronavirus. On 5 February, a lab-confirmed case of COVID-19 led to the quarantine of the Diamond Princess for 14 days beginning at 7am, with passengers requested to stay in their cabins. As of 5 February, there was a total of 3711 individuals on board the Diamond Princess, with 2666 passengers and 1045 crew members.

Quarantine Measures:

At the beginning of the quarantine period, crew members were provided with personal protective equipment (PPE) and instructed on appropriate IPC practices. On 7 February, passengers were provided thermometers for self-monitoring of body temperature, with instructions on calling a "Fever Call Center", if they had a fever above 37.5C. Passengers who developed fever were referred to the medical team in charge and were tested for Novel coronavirus. Passengers who developed serious illness, including non-COVID-19 morbidities, were referred the ship's Medical Center, which provided essential health services. Those passengers with lab-confirmed COVID-19 were disembarked and transferred to an isolation ward at healthcare facilities. Their cabinmates were defined as "close contacts" and were therefore tested. If positive, they were also confirmed as a case and disembarked to a healthcare facility. If they tested negative, they remained on board but with a 14-day quarantine period reset after the last contact with the confirmed case. All crew and healthcare staff onboard the Diamond Princess were instructed to follow international guidance on infection prevention and control. To maintain operations of the ship, some crew continued to perform essential, limited services while the ship remained in quarantine. This led to those crew members not remaining fully isolated, in the same manner as passengers, during the quarantine period.

Data Collection:

Initially, only symptomatic cases and close contacts were being tested for COVID-19. This was changed on 11 February, due to the expansion of laboratory capacity, with quarantine officers systematically collecting respiratory specimens from all passengers by age group, starting with those 80 years old and older as well as individuals with co-morbidities, such as diabetes or a heart condition. Respiratory specimens collected were tested via PCR for confirmation of Novel coronavirus. Epidemiological data collected was initially limited due to the emergency nature of the quarantine and included data on onset of symptoms, date of lab confirmation, and close contacts. A confirmed case of COVID-19, for this report, is anyone, passenger or crew, who had a positive PCR test for Novel coronavirus, independent of their symptom presentation. In most cases, the "population on board," refers to the 3,711 passenger and crew aboard Diamond Princess on 5 February.

Preliminary Results:

As of 18 February, there have been 531 confirmed cases (14.3% of all individuals on board on 5 February), including 65 crew and 466 passengers. A total 2404 respiratory specimens were tested, and 542 were positive (22.5), including double tests. Among confirmed COVID-19 cases with recorded symptom onset (n=184), there were 33 (18%) with onset dates before 6 February, which was the first full day of quarantine, and 151 (82%) with onset dates on or after the 6th. A total 255 (48%) of the confirmed cases were asymptomatic when the respiratory specimen was collected. Of these, 8 were crew and 247 were passengers. (Information on development of symptoms after disembarkation of asymptomatic confirmed cases is not currently available.) A total 23 passengers with reported onset dates were confirmed after another passenger in the same cabin had been confirmed. From 13 February to now, 81% of cases among confirmed passengers or crew with reported onset dates (n=22) occurred in crew (n=13) or passengers from cabins with a previously confirmed case (n=5).

Preliminary Conclusions:

Based on the number of confirmed cases by onset date, there is clear evidence that substantial transmission of COVID-19 had been occurring prior to implementation of quarantine on the Diamond Princess on 5 February (see also febrile patient visits to the on-board clinic below). The decline in the number of confirmed cases, based on reported onset dates, implies that the quarantine intervention was effective in reducing transmission among passengers. Transmission toward the end of the quarantine period, which is scheduled to end for most passengers on 19 Feb, appears to have occurred mostly among crew or within passenger cabins. It should be noted that due to the nature of the ship, individual isolation of all those aboard was not possible. Sharing of cabins was necessary, and some crew had to continue to perform essential duties for the functioning of the vessel with passengers aboard.

Recent confirmations of asymptomatic cases can be explained by the systematic testing of passengers that began around 14 Feb. Although some of these cases may have been secondary cases within a given cabin, it is difficult to know when transmission occurred. They may have been infected before the quarantine began. Nevertheless, these asymptomatic cases have been disembarked and their cabinmates have been defined as close contacts with their 14-day isolation reset on the day the asymptomatic case was disembarked. The systematic testing of asymptomatic cases was useful in screening these persons before allowing them to disembark.

Preliminary Actions/Guidance:

Those persons (mostly passengers) who have completed the 14-day quarantine, have not tested positive, and pass a medical check on the 14th day, will be disembarked on the 19th.

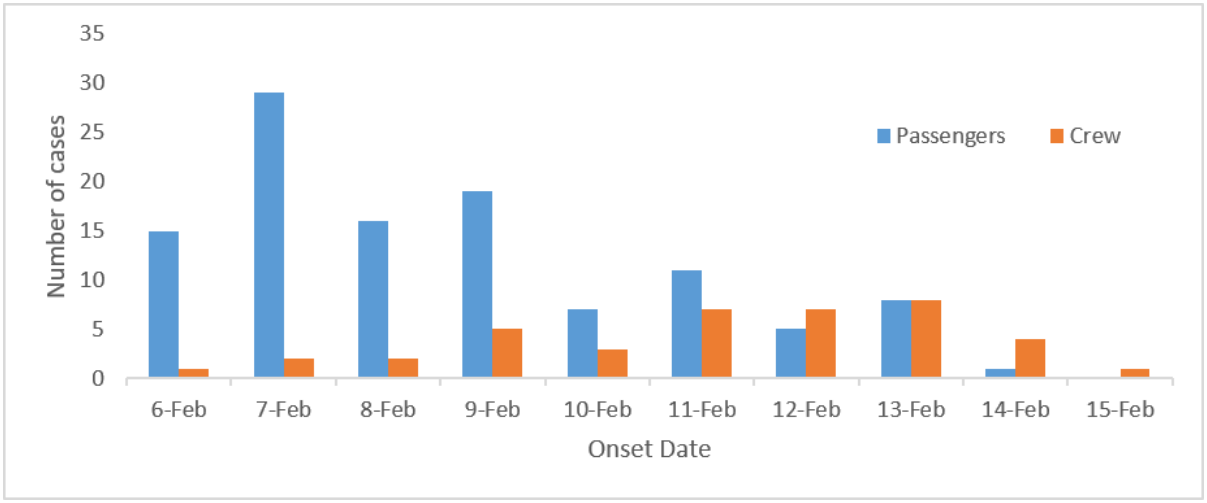
Those individuals who were in contact with a confirmed case will be put in isolation until they complete the 14-day period beginning after the last day of their suspected contact with a case. This includes a large proportion of the crew members of the Diamond Princess. The crew performed essential tasks that allowed the quarantine to occur successfully for 14 days and should be appreciated for their service.

As the persons aboard were exposed to a high-risk environment for a prolonged period, all persons who disembark should be careful about the health conditions for the time being and immediately report to a public health center if they develop symptoms.

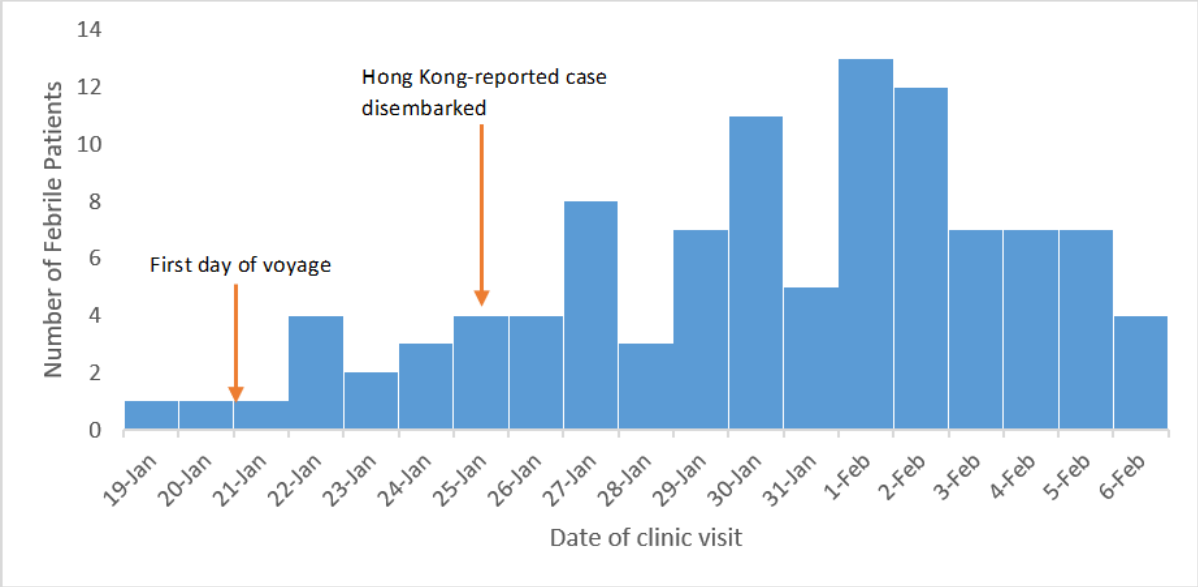
Percent of persons aboard who were confirmed with COVID-19 by age group and symptom status at the time of specimen collection.

Age group	Symptomatic confirmed cases (%)	Asymptomatic confirmed cases (%)	Total confirmed cases (%)	Persons aboard on 5 February
00-09	0(0)	1(6)	1(6)	16
10-19	1(4)	1(4)	2(9)	23
20-29	18(5)	2(1)	20(6)	347
30-39	18(4)	5(1)	23(5)	429
40-49	18(5)	7(2)	25(8)	333
50-59	27(7)	22(6)	49(12)	398
60-69	73(8)	56(6)	129(14)	924
70-79	92(9)	136(13)	228(22)	1015
80-89	27(13)	25(12)	52(24)	215
90-99	2(18)	0(0)	2(18)	11
Total	**276(7)**	**255(7)**	**531(14)**	**3711**

Number of confirmed COVID-19 cases with reported onset dates, by onset date, aboard Diamond Princess, 6 – 17 February 2020 (n=151)



Febrile Patients, by date of clinic visit, Diamond Princess clinic, 19 Jan - 2 Feb 2020 (n=79)



Characteristics of COVID-19 Cases with reported on-set dates of 6 – 17 Feb 2020 (n=53).

Date of Onset (n cases)	Crew	Passengers	Passengers from cabins with another confirmed case (%)
17 Feb (0)	0	0	0
16 Feb (0)	0	0	0
15 Feb (1)	1	0	0
14 Feb (5)	4	1	1 (100%) [0]
13 Feb (16)	8	8	4 (50%) [2]
12 Feb (12)	7	5	0 (00%) [2]
11 Feb (18)	7	11	3 (27%) [1]
10 Feb (10)	3	7	3 (43%) [1]
9 Feb (24)	5	19	6 (32%) [9]
8 Feb (18)	2	16	1 (6%) [3]
7 Feb (31)	2	29	4 (14%) [10]
6 Feb (16)	1	15	1 (7%) [6]
Total	**40**	**111**	**23 (21%) [34]**

Note, the number in brackets represents the number of additional confirmed cases in the same cabin with unknown onset date.

PATIENT CARE
STRATEGIES FOR SCARCE RESOURCE SITUATIONS

MINNESOTA MDH DEPARTMENT OF HEALTH

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MINNESOTA DEPARTMENT OF HEALTH
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PATIENT CARE
STRATEGIES FOR SCARCE RESOURCE SITUATIONS

Summary Card

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

Potential trigger events:	•Mass Casualty Incident (MCI) •Infrastructure damage/loss •Pandemic/Epidemic	•Supplier shortage •Recall/contamination of product •Isolation of facility due to access problems (flooding, etc)

How to use this card set:

1. Recognize or anticipate resource shortfall
2. Implement appropriate incident management system and plans; assign subject matter experts (technical specialists) to problem
3. Determine degree of shortfall, expected demand, and duration; assess ability to obtain needed resources via local, regional, or national vendors or partners
4. Find category of resource on index
5. Refer to specific recommendations on card
6. Decide which strategies to implement and/or develop additional strategies appropriate for the facility and situation
7. Assure consistent regional approach by informing public health authorities and other facilities if contingency or crisis strategies will continue beyond 24h and no regional options exist for re-supply or patient transfer; activate regional scarce resource coordination plans as appropriate
8. Review strategies every operational period or as availability (supply/demand) changes

Core strategies to be employed (generally in order of preference) during, or in anticipation of a scarce resource situation are:

Prepare - pre-event actions taken to minimize resource scarcity (e.g., stockpiling of medications)
Substitute - use an essentially equivalent device, drug, or personnel for one that would usually be available (e.g., morphine for fentanyl)
Adapt – use a device, drug, or personnel that are not equivalent but that will provide sufficient care (e.g., anesthesia machine for mechanical ventilation)
Conserve – use less of a resource by lowering dosage or changing utilization practices (e.g., minimizing use of oxygen driven nebulizers to conserve oxygen)
Re-use – re-use (after appropriate disinfection / sterilization) items that would normally be single-use items
Re-allocate – restrict or prioritize use of resources to those patients with a better prognosis or greater need

Capacity Definitions:

Conventional capacity – The spaces, staff, and supplies used are *consistent with daily practices* within the institution. These spaces and practices are used during a major mass casualty incident that triggers activation of the facility emergency operations plan.

Contingency capacity – The spaces, staff, and supplies used are not consistent with daily practices, but provide care to a standard that is *functionally equivalent* to usual patient care practices. These spaces or practices may be used temporarily during a major mass casualty incident or on a more sustained basis during a disaster (when the demands of the incident exceed community resources).

Crisis capacity – Adaptive spaces, staff, and supplies are not consistent with usual standards of care, but provide *sufficiency* of care in the setting of a catastrophic disaster (i.e., provide the best possible care to patients given the circumstances and resources available). Crisis capacity activation constitutes a significant adjustment to standards of care (Hick et al, 2009).

This card set is designed to facilitate a structured approach to resource shortfalls at a healthcare facility. It is a decision support tool and assumes that incident management is implemented and that key personnel are familiar with ethical frameworks and processes that underlie these decisions (for more information see Institute of Medicine 2012 Crisis Standards of Care: A Systems Framework for Catastrophic Disaster Response http://www.iom.edu/Reports/2012/Crisis-Standards-of-Care-A-Systems-Framework-for-Catastrophic-Disaster-Response.aspx and the Minnesota Pandemic Ethics Project - http://www.health.state.mn.us/divs/idepc/ethics/). Each facility will have to determine the most appropriate steps to take to address specific shortages. Pre-event familiarization with the contents of this card set is recommended to aid with event preparedness and anticipation of specific resource shortfalls. The cards do not provide comprehensive guidance, addressing only basic common categories of medical care. Facility personnel may determine additional coping mechanisms for the specific situation in addition to those outlined on these cards.

The content of this card set was developed by the Minnesota Department of Health (MDH) Science Advisory Team in conjunction with many subject matter experts whose input is greatly appreciated. This guidance does not represent the policy of MDH. Facilities and personnel implementing these strategies in crisis situations should assure communication of this to their healthcare and public health partners to assure the invocation of appropriate legal and regulatory protections in accord with State and Federal laws. This guidance may be updated or changed during an incident by the Science Advisory Team and MDH. The weblinks and resources listed are examples, and may not be the best sources of information available. Their listing does not imply endorsement by MDH. This guidance does not replace the judgement of the clinical staff and consideration of other relevant variables and options during an event.

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OXYGEN

STRATEGIES FOR SCARCE RESOURCE SITUATIONS

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

RECOMMENDATIONS	*Strategy*	*Conventional*	*Contingency*	*Crisis*
Inhaled Medications • Restrict the use of Small Volume Nebulizers when inhaler substitutes are available. • Restrict continuous nebulization therapy. • Minimize frequency through medication substitution that results in fewer treatments (6h-12h instead of 4h-6h applications).	*Substitute & Conserve*			
High-Flow Applications • Restrict the use of high-flow cannula systems as these can demand 12 to 40 LPM flows. • Restrict the use of simple and partial rebreathing masks to 10 LPM maximum. • Restrict use of Gas Injection Nebulizers as they generally require oxygen flows between 10 LPM and 75 LPM. • Eliminate the use of oxygen-powered venturi suction systems as they may consume 15 to 50 LPM.	*Conserve*			
Air-Oxygen Blenders • Eliminate the low-flow reference bleed occurring with any low-flow metered oxygen blender use. This can amount to an additional 12 LPM. Reserve air-oxygen blender use for mechanical ventilators using high-flow non-metered outlets. (These do not utilize reference bleeds). • Disconnect blenders when not in use.	*Conserve*			
Oxygen Conservation Devices • Use reservoir cannulas at 1/2 the flow setting of standard cannulas. • Replace simple and partial rebreather mask use with reservoir cannulas at flowrates of 6-10 LPM.	*Substitute & Adapt*			
Oxygen Concentrators if Electrical Power Is Present • Use hospital-based or independent home medical equipment supplier oxygen concentrators if available to provide low-flow cannula oxygen for patients and preserve the primary oxygen supply for more critical applications.	*Substitute & Conserve*			
Monitor Use and Revise Clinical Targets • Employ oxygen titration protocols to optimize flow or % to match targets for SPO2 or PaO2. • Minimize overall oxygen use by optimization of flow. • Discontinue oxygen at earliest possible time. **Starting Example** / **Initiate O2** / **O2 Target** Normal Lung Adults: SPO2 <90% / SPO2 90% Infants & Peds: SPO2 <90% / SPO2 90-95% Severe COPD History: SPO2 <85% / SPO2 90% **Note**: Targets may be adjusted further downward depending on resources available, the patient's clinical presentation, or measured PaO2 determination.	*Conserve*			
Expendable Oxygen Appliances • Use terminal sterilization or high-level disinfection procedures for oxygen appliances, small & large-bore tubing, and ventilator circuits. Bleach concentrations of 1:10, high-level chemical disinfection, or irradiation may be suitable. Ethylene oxide gas sterilization is optimal, but requires a 12-hour aeration cycle to prevent ethylene chlorohydrin formation with polyvinyl chloride plastics.	*Re-use*			
Oxygen Re-Allocation • Prioritize patients for oxygen administration during severe resource limitations.	*Re-Allocate*			

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STAFFING

STRATEGIES FOR SCARCE RESOURCE SITUATIONS

RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Staff and Supply Planning • Assure facility has process and supporting policies for disaster credentialling and privileging - including degree of supervision required, clinical scope of practice, mentoring and orientation, and verification of credentials • Encourage employee preparedness planning (www.ready.gov and other resources). • Cache adequate personal protective equipment (PPE) and support supplies. • Educate staff on institutional disaster response. • Educate staff on community, regional and state disaster plans and resources. • Develop facility plans addressing staff's family / pets or staff shelter needs.	*Prepare*			
Focus Staff *Time* on Core Clinical Duties • Minimize meetings and relieve administrative responsibilities not related to event. • Reduce documentation requirements. • Cohort patients to conserve PPE and reduce staff PPE donning/doffing time and frequency. • Restrict elective appointments and procedures.	*Conserve*			
Use Supplemental Staff • Bring in equally trained staff (burn or critical care nurses, Disaster Medical Assistance Team [DMAT], other health system or Federal sources). • Equally trained staff from administrative positions (nurse managers).	*Substitute*			
• Adjust personnel work schedules (longer but less frequent shifts, etc.) if this will not result in skill / PPE compliance deterioration. • Use family members/lay volunteers to provide basic patient hygiene and feeding – releasing staff for other duties.	*Adapt*			
Focus Staff *Expertise* on Core Clinical Needs • Personnel with specific critical skills (ventilator, burn management) should concentrate on those skills; specify job duties that can be safely performed by other medical professionals. • Have specialty staff oversee larger numbers of less-specialized staff and patients (for example, a critical care nurse oversees the intensive care issues of 9 patients while 3 medical/surgical nurses provide basic nursing care to 3 patients each). • Limit use of laboratory, radiographic, and other studies, to allow staff reassignment and resource conservation. • Reduce availability of non-critical laboratory, radiographic, and other studies.	*Conserve*			
Use Alternative Personnel to Minimize Changes to Standard of Care • Use less trained personnel with appropriate mentoring and just-in-time education (e.g., healthcare trainees or other health care workers, Minnesota Responds Medical Reserve Corps, retirees). • Use less trained personnel to take over portions of skilled staff workload for which they have been trained. • Provide just-in-time training for specific skills. • Cancel most sub-specialty appointments, endoscopies, etc. and divert staff to emergency duties including in-hospital or assisting public health at external clinics/screening/dispensing sites.	*Adapt*			

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NUTRITIONAL SUPPORT

STRATEGIES FOR SCARCE RESOURCE SITUATIONS

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

RECOMMENDATIONS	*Strategy*	*Conventional*	*Contingency*	*Crisis*
Food • Maintain hospital supply of inexpensive, simple to prepare, long-shelf life foodstuffs as contingency for at least 96 hours without resupply, with additional supplies according to hazard vulnerability analysis (e.g., grains, beans, powdered milk, powdered protein products, pasta, and rice). Access existing or devise new emergency/disaster menu plans. • Maintain hospital supply of at least 30 days of enteral and parenteral nutrition components and consider additional supplies based on institution-specific needs. Review vendor agreements and their contingencies for delivery and production, including alternate vendors. Note: A 30-day supply based on usual use may be significantly shortened by the demand of a disaster.	*Prepare*			
Water • Stock bottled water sufficient for drinking needs for at least 96 hours if feasible (for staff, patients and family/visitors), or assure access to drinking water apart from usual supply. Potential water sources include food and beverage distributors. • Ensure there is a mechanism in place to verify tap water is safe to drink. • Infants: assure adequate stocks of formula and encourage breastfeeding.	*Prepare*			
Staff/Family • Plan to feed additional staff, patients, and family members of staff/patients in select situations (ice storm as an example of a short-term incident, an epidemic as an example of a long-term incident).	*Prepare*			
Planning • Work with stakeholders to encourage home users of enteral and parenteral nutrition to have contingency plans and alternate delivery options. Home users of enteral nutrition typically receive delivery of 30 days supply and home users of parenteral nutrition typically receive a weekly supply. Anticipate receiving supply requests from home users during periods of shortage. Work with vendors regarding their plans for continuity of services and delivery. • Identify alternate sources of food supplies for the facility should prime vendors be unavailable (including restaurants – which may be closed during epidemics). Consider additional food supplies at hospitals that do not have food service management accounts. • Determine if policy on family provision of food to patients is in place, and what modifications might be needed or permitted in a disaster.	*Prepare*			
• Liberalize diets and provide basic nutrients orally, if possible. Total parenteral nutrition (TPN) use should be limited and prioritized for neonatal and critically ill patients.	*Substitute*			
• Non-clinical personnel serve meals and may assist preparation. • Follow or modify current facility guidelines for provision of food/feeding by family members of patients. • Anticipate and have a plan for the receipt of food donations. If donated food is accepted, it should be non-perishable, prepackaged, and in single serving portions.	*Adapt*			
• Collaborate with pharmacy and nutrition services to identify patients appropriate to receive parenteral nutrition support vs. enteral nutrition. Access premixed TPN/PPN solutions from vendor if unable to compound. Refer to Centers for Disease Control (CDC) Fact Sheets and American Society for Parenteral and Enteral Nutrition (ASPEN) Guidelines. Substitute oral supplements for enteral nutrition products if needed.	*Substitute & Adapt*			
• Eliminate or modify special diets temporarily. • Use blenderized food and fluids for enteral feedings rather than enteral nutrition products if shortages occur. Examples: 1. The Oley Foundation: Making Your Own Food for Tube Feeding, http://www.oley.org/lifeline/TubetalkSO07.html#Making%20your%20own 2. Klein, Marsha Dunn, and Suzanne Evans Morris. Homemade Blended Formula Handbook. Tucson: Mealtime Notions LLC, 2007.	*Adapt*			

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MEDICATION ADMINISTRATION

STRATEGIES FOR SCARCE RESOURCE SITUATIONS

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Cache / Increase Supply Levels • Patients should have at least 30 days supply of home medications and obtain 90 day supply if pandemic, epidemic, or evacuation is imminent. • Examine formulary to determine commonly-used medications and classes that will be in immediate / high demand. • Increase supply levels or cache critical medications - particularly for low-cost items and analgesics. • Key examples include: **Analgesia**: • morphine, other narcotic and non-narcotic (non-steroidals, acetaminophen) class - injectable and oral (narcotic conversion tool at http://www.globalrph.com/narcoticonv.htm) **Sedation**: • particularly benzodiazepine (lorazepam, midazolam, diazepam) injectables **Anti-infective**: • narrow and broad spectrum antibiotics for pneumonia, skin infections, open fractures, sepsis (e.g.: cephalosporins, quinolones, tetracyclines, macrolides, aminoglycosides, clindamycin, etc.), select antivirals **Pulmonary**: • metered dose inhalers (albuterol, inhaled steroids), oral steroids (dexamethasone, prednisone) **Behavioral Health**: • haloperidol, other injectable and oral anti-psychotics, common anti-depressants, anxiolytics **Other**: • sodium bicarbonate, paralytics, induction agents (etomidate, propofol), proparacaine/tetracaine, atropine, pralidoxime, epinephrine, local anesthetics, antiemetics, insulin, common oral anti-hypertensive and diabetes medications	*Prepare*			
Use Equivalent Medications • Obtain medications from alternate supply sources (pharmaceutical representatives, pharmacy caches). **Pulmonary**: • Metered dose inhalers instead of nebulized medications **Analgesia/ Sedation**: • Consider lorazepam for propofol substitution (and other agents in short supply) • ICU analgesia/sedation drips Morphine 4-10mg IV load then 2mg/h and titrate / re-bolus as needed usual 3-20mg/h); lorazepam 2-8mg or midazolam 1-5mg IV load then 2-8mg/h drip	*Substitute*			
Anti-infective: • Examples: cephalosporins, gentamicin, clindamycin substitute for unavailable broad-spectrum antibiotic • Target therapy as soon as possible based upon organism identified.	*Substitute*			
Other: • Beta blockers, diuretics, calcium channel blockers, ace inhibitors, anti-depressants, anti-infectives				
Reduce Use During High Demand • Restrict use of certain classes if limited stocks likely to run out (restrict use of prophylactic / empiric antibiotics after low risk wounds, etc.). • Decrease dose; consider using smaller doses of medications in high demand / likely to run out (reduce doses of medications allowing blood pressure or glucose to run higher to ensure supply of medications adequate for anticipated duration of shortage). • Allow use of personal medications (inhalers, oral medications) in hospital.	*Conserve*			
• Do without - consider impact if medications not taken during shortage (statins, etc.).	*Conserve*			

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MEDICATION ADMINISTRATION

STRATEGIES FOR SCARCE RESOURCE SITUATIONS (cont.)

RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Modify Medication Administration • Emphasize oral, nasogastric, subcutaneous routes of medication administration. • Administer medications by gravity drip rather than IV pump if needed: *IV drip rate calculation - drops / minute = amount to be infused x drip set / time (minutes) (drip set = qtts / mL - 60, 10, etc.).* • Rule of 6: pt wgt (kg) x 6 = mg drug to add to 100mL fluid = 1mcg / kg / min for each 1 mL / hour NOTE: For examples, see http://www.dosagehelp.com/iv_rate_drop.html	*Adapt*			
• Consider use of select medications beyond expiration date.* • Consider use of veterinary medications when alternative treatments are not available.*	*Adapt*			
Restrict Allocation of Select Medications • Allocate limited stocks of medications with consideration of regional/state guidance and available epidemiological information (e.g.: anti-viral medications such as olseltamivir)	*Re-Allocate*			
• Allocate limited stock to support other re-allocation decisions (ventilator use, etc.).	*Re-Allocate*			

*Legal protection such as Food and Drug Administration approval or waiver required.

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HEMODYNAMIC SUPPORT AND IV FLUIDS

STRATEGIES FOR SCARCE RESOURCE SITUATIONS

RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Cache Additional Intravenous (IV) Cannulas, Tubing, Fluids, Medications, and Administration Supplies	*Prepare*			
Use Scheduled Dosing and Drip Dosing When Possible • Reserve IV pump use for critical medications such as sedatives and hemodynamic support.	*Conserve*			
Minimize Invasive Monitoring • Substitute other assessments (e.g., clinical signs, ultrasound) of central venous pressure (CVP). • When required, assess CVP intermittently via manual methods using bedside saline manometer or transducer moved between multiple patients as needed, or by height of blood column in CVP line held vertically while patient supine.	*Conserve*			
Emphasize Oral Hydration Instead of IV Hydration When Possible Utilize appropriate oral rehydration solution: • Oral rehydration solution: 1 liter water (5 cups) + 1 tsp salt + 8 tsp sugar, add flavor (e.g., ½ cup orange juice, other) as needed. • Rehydration for moderate dehydration 50-100mL / kg over 2-4 hours Pediatric hydration: Pediatric maintenance fluids: • 4 mL/kg/h for first 10kg of body weight (40 mL/h for 1st 10 kg) • 2 mL/kg/h for second 10kg of body weight (20 mL/h for 2nd 10kg = 60 mL/h for 20kg child) • 1 mL/kg/h for each kg over 20kg (example - 40 kg child = 60 mL/h plus 20 mL/h = 80 mL/h) Supplement for each diarrhea or emesis NOTE: Clinical (urine output, etc.) and laboratory (BUN, urine specific gravity) assessments and electrolyte correction are key components of fluid therapy and are not specifically addressed by these recommendations. NOTE: For further information and examples, see http://rehydrate.org, http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5216a1.htm and http://www.ped.med.utah.edu/cai/howto/IntravenousFluidOrders.PDF.	*Substitute*			
Provide Nasogastric Hydration Instead of IV Hydration When Practical • Patients with impediments to oral hydration may be successfully hydrated and maintained with nasogastric (NG) tubes. • For fluid support, 8-12F (pediatric: infant 3.5F, < 2yrs 5F) tubes are better tolerated than standard size tubes.	*Substitute*			
Substitute Epinephrine for Other Vasopressor Agents • For hemodynamically unstable patients who are adequately volume-resuscitated, consider adding 6mg epinephrine (6mL of 1:1000) to 1000mL NS on minidrip tubing and titrate to target blood pressure. • Epinephrine 1:1000 (1mg/mL) multi-dose vials available for drip use.	*Substitute*			
Re-use CVP, NG, and Other Supplies After Appropriate Sterilization / Disinfection • Cleaning for all devices should precede high-level disinfection or sterilization. • High-level disinfection for at least twenty minutes for devices in contact with body surfaces (including mucous membranes);glutaraldehyde, hydrogen peroxide 6%, or bleach (5.25%) diluted 1:20 (2500 ppm) are acceptable solutions. NOTE: chlorine levels reduced if stored in polyethylene containers - double the bleach concentration to compensate). • Sterilize devices in contact with bloodstream (e.g., ethylene oxide sterilization for CVP catheters).	*Re-use*		(disinfection – NG, etc)	(sterilization - central line, etc)

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HEMODYNAMIC SUPPORT AND IV FLUIDS

STRATEGIES FOR SCARCE RESOURCE SITUATIONS (cont.)

RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Intraosseous / Subcutaneous (Hypodermoclysis) Replacement Fluids • Consider as an option when alternative routes of fluid administration are impossible/unavailable • Intraosseous before percutaneous Intraosseous • Intraosseous infusion is not generally recommended for hydration purposes, but may be used until alternative routes are available. Intraosseous infusion requires pump or pressure bag. Rate of fluid delivery is often limited by pain of pressure within the marrow cavity. This may be reduced by pre-medication with lidocaine 0.5mg/kg slow IV push. Hypodermoclysis • Cannot correct more than moderate dehydration via this technique. • Many medications cannot be administered subcutaneously. • Common infusion sites: pectoral chest, abdomen, thighs, upper arms. • Common fluids: normal saline (NS), D5NS, D5 1/2 NS (Can add up to 20-40 mEq potassium if needed.) • Insert 21/24 gauge needle into subcutaneous tissue at a 45 degree angle, adjust drip rate to 1-2 mL per minute. (May use 2 sites simultaneously if needed.) • Maximal volume about 3 liters / day; requires site rotation. • Local swelling can be reduced with massage to area. • Hyaluronidase 150 units / liter facilitates fluid absorption but not required; may not decrease occurrence of local edema.	*Substitute*			
Consider Use of Veterinary and Other Alternative Sources for Intravenous Fluids and Administration Sets	*Adapt*			

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MECHANICAL VENTILATION / EXTERNAL OXYGENATION

STRATEGIES FOR SCARCE RESOURCE SITUATIONS

RECOMMENDATIONS	*Strategy*	*Conventional*	*Contingency*	*Crisis*
Increase Hospital Stocks of Ventilators and Ventilator Circuits, ECMO or bypass circuits	*Prepare*			
Access Alternative Sources for Ventilators / specialized equipment • Obtain specialized equipment from vendors, healthcare partners, regional, state, or Federal stockpiles via usual emergency management processes and provide just-in-time training and quick reference materials for obtained equipment.	*Substitute*			
Decrease Demand for Ventilators • Increase threshold for intubation / ventilation. • Decrease elective procedures that require post-operative intubation. • Decrease elective procedures that utilize anesthesia machines. • Use non-invasive ventilatory support when possible.	*Conserve*			
Re-use Ventilator Circuits • Appropriate cleaning must precede sterilization. • If using gas (ethylene oxide) sterilization, allow full 12 hour aeration cycle to avoid accumulation of toxic byproducts on surface. • Use irradiation or other techniques as appropriate.	*Re-use*			
Use Alternative Respiratory Support Technologies • Use transport ventilators with appropriate alarms - especially for stable patients without complex ventilation requirements. • Use anesthesia machines for mechanical ventilation as appropriate / capable. • Use bi-level (BiPAP) equipment to provide mechanical ventilation. • Consider bag-valve ventilation as temporary measure while awaiting definitive solution / equipment (as appropriate to situation – extremely labor intensive and may consume large amounts of oxygen).	*Adapt*			
Assign Limited Ventilators to Patients Most Likely to Benefit if No Other Options Are Available ***STEP ONE*:** assess patient acuity using SOFA (see next page+) scoring table and/or other parameters appropriate to the situation (agent-specific prognostic indicators, modifications based on agent involved).	*Re-allocate*			

ORGAN SYSTEM	SCORE = 0	1	2	3	4
RESPIRATORY Pa02 / FI02	> 400	≤ 400	≤ 300	≤ 200 with resp. support	≤ 100 with resp. support
HEMATOLOGIC Platelets	> 150	≤ 150	≤ 100	≤ 50	≤ 20
HEPATIC Bilirubin (mg / dl)	< 1.2	1.2 – 1.9	2.0 – 5.9	6 – 11.9	≥ 12
CARDIOVASCULAR Hypotension	None	Mean Arterial Pressure < 70 mmHg	Dopamine ≤ 5 or any Dobutamine	Dopamine > 5 or Epi < 0.1 or Nor-Epi ≤ 0.1	Dopamine > 15 or Epi > 0.1 or Nor-Epi > 0.1
CENTRAL NERVOUS SYSTEM Glasgow Coma Score	15	13 - 14	10 - 12	6 - 9	<6
RENAL Creatinine	<1.2	1.2 - 1.9	2.0 - 3.4	3.5 - 4.9	≥5.0

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MECHANICAL VENTILATION / EXTERNAL OXYGENATION

STRATEGIES FOR SCARCE RESOURCE SITUATIONS (cont.)

RECOMMENDATIONS				***Strategy***	***Crisis***
***STEP TWO*:** Compared to other patient(s) requiring and awaiting external ventilation / oxygenation, does this patient have significant differences in prognosis or resource utilization in one or more categories below that would justify re-allocation of the ventilator / unit? Factors listed in relative order of importance/weight. Injury/epidemiologic factors may have the highest predictive value in some cases and may also affect the predictive ability of the SOFA score.				*Re-allocate*	
Criteria	Patient keeps resource		Resource re-allocated		
1. Organ system function[a]	Low potential for death (SOFA score ≤ 7)	Intermediate potential for death (SOFA score 8-11)	High potential for death (SOFA score ≥12)		
2. Duration of benefit / prognosis	Good prognosis based upon epidemiology of specific disease/ injury. No severe underlying disease.[b]	Indeterminate / intermediate prognosis based upon epidemiology of specific disease / injury Severe underlying disease with poor long-term prognosis and/or ongoing resource demand (e.g., home oxygen dependent, dialysis dependent) and unlikely to survive more than 1-2 years.	Poor prognosis based upon epidemiology of specific disease / injury (e.g., pandemic influenza) Severe underlying disease with poor short-term (e.g., <1 year) prognosis		
3. Duration of need	Short duration – flash pulmonary edema, chest trauma, other conditions anticipating < 3 days on ventilator	Moderate duration – e.g., pneumonia in healthy patient (estimate 3-7 days on ventilator)	Long duration – e.g., ARDS, particularly in setting of preexisting lung disease (estimate > 7 days on ventilator)		
4. Response to mechanical ventilation	Improving ventilatory parameters over time[c]	Stable ventilatory parameters over time	Worsening ventilatory parameters over time		

[a] The Sequential Organ Failure Assessment (SOFA) score is the currently preferred assessment tool but other predictive models may be used depending on the situation / epidemiology. Note: SOFA scores were not designed to forecast mortality, and thus single or a few point difference between patients may not represent a 'substantial difference' in mortality, but larger differences and trends can be extremely helpful in determining resource assignment.

[b] Examples of underlying diseases that predict poor short-term survival include (but are not limited to):

1. Congestive heart failure with ejection fraction < 25% (or persistent ischemia unresponsive to therapy or non-reversible ischemia with pulmonary edema)
2. Severe chronic lung disease including pulmonary fibrosis, cystic fibrosis, obstructive or restrictive diseases requiring continuous home oxygen use prior to onset of acute illness
3. Central nervous system, solid organ, or hematopoietic malignancy with poor prognosis for recovery
4. Cirrhosis with ascites, history of variceal bleeding, fixed coagulopathy or encephalopathy
5. Acute hepatic failure with hyperammonemia

[c] Changes in Oxygenation Index over time may provide comparative data, though of uncertain prognostic significance.
OI = MAWP x FiO2 / PaO2 where: OI = oxygenation index, MAWP= Mean Airway Pressure, FiO2 = inspired oxygen concentration, PaO2 = arterial oxygen pressure (May be estimated from oxygen dissociation curve if blood gas unavailable.)

***STEP THREE*:** Re-allocate ventilator / resource only if patient presenting with respiratory failure has significantly better chance of survival/benefit as compared to patient currently receiving ventilation. Follow additional regional and state/federal guidance and institutional processes for scarce resource situations.

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BLOOD PRODUCTS

STRATEGIES FOR SCARCE RESOURCE SITUATIONS

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

Category	RECOMMENDATIONS	Healthcare Facility	Blood Center	Strategy	Conventional	Contingency	Crisis
All Blood Products	• Increase donations if required, and consider local increase in frozen reserves • Increase O positive levels • Consider maintaining a frozen blood reserve if severe shortage • Increase recruitment for specific product needs		√	*Prepare*			
	• Consider adjustments to donor HGB/HCT eligibility		√	*Adapt*			
	• Relax travel deferrals for possible malaria and BSE (bovine spongiform encephalitis)*		√	*Prepare*			
Packed Red Blood Cells	• Use cell-saver and auto-transfusion to degree possible	√		*Re-use*			
	• Limit O negative use to women of child-bearing age • Use O positive in emergent transfusion in males or non-child bearing females to conserve O negative	√		*Conserve*			
	• Change donations from whole blood to 2x RBC apheresis collection if specific shortage of PRBCs		√	*Adapt*			
	• More aggressive crystalloid resuscitation prior to transfusion in shortage situations (blood substitutes may play future role)	√		*Conserve*			
	• Long-term shortage, collect autologous blood pre-operatively and consider cross-over transfusion	√		*Conserve*			
	• Enforce lower hemoglobin triggers for transfusion (for example, HGB 7)	√		*Conserve*			
	• Consider limiting high-consumption elective surgeries (select cardiac, orthopedic, etc)	√		*Conserve*			
	• Consider use of erythropoietin (EPO) for chronic anemia in appropriate patients	√		*Adapt*			
	• Further limit PRBC use, if needed, to active bleeding states, consider subsequent restrictions including transfusion only for end-organ damage, then to shock states only	√		*Re-allocate*			
	• Consider Minimum Qualifications for Survival (MQS) limits on use of PRBCs (for example, only initiate for patients that will require < 6 units PRBCs and/or consider stopping transfusion when > 6 units utilized). Specific MQS limits should reflect available resources at facility.	√		*Re-allocate*			
	• Reduce or waive usual 56 day inter-donation period* based upon pre-donation hemoglobin		√	*Adapt*			
	• Reduce weight restrictions for 2x RBC apheresis donations according to instruments used and medical director guidance*		√	*Adapt*			
Fresh Frozen Plasma	• Though not true substitute, consider use of fibrinolysis inhibitors or other modalities to reverse coagulopathic states (tranexamic acid, aminocaproic acid, activated coagulation factor use, or other appropriate therapies)	√		*Substitute*			
	• Consider reduction in red cell : FFP ratios in massive transfusion protocols in consultation with blood bank medical staff	√		*Conserve*			
	• No anticipatory use of FFP in hemorrhage without documented coagulopathy	√		*Conserve*			
	• Obtain FDA variance to exceed 24 collections per year for critical types*		√	*Adapt*			

*FDA approval/variance required via American Association of Blood Banks (AABB)

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BLOOD PRODUCTS

STRATEGIES FOR SCARCE RESOURCE SITUATIONS (cont.)

Category	RECOMMENDATIONS	Healthcare Facility	Blood Center	Strategy	Conventional	Contingency	Crisis
Platelets	• Though not true substitute, consider use of desmopressin (DDAVP) to stimulate improved platelet performance in renal and hepatic failure patients	√		*Substitute*			
	• May use leukoreduced whole blood pooled platelets (and, if required, consider non-leukoreduced whole blood pooled platelets)		√	*Adapt*	Leukoreduced		Non-leukoreduced
	• Convert less needed ABO Whole Blood to Apheresis		√	*Adapt*			
	• Transfuse platelets only for active bleeding, further restrict to life-threatening bleeding if required by situation	√		*Conserve*			
	• No prophylactic use of platelets	√		*Conserve*			
	• Accept female platelet donors without HLA antibody screen		√	*Adapt*			
	• Accept female donors for pooled and stored platelets		√	*Adapt*			
	• Apply for variance of 7 day outdate requirement*		√	*Adapt*			
	• Consider a 24 hr hold until the culture is obtained and immediate release for both Pool and Apheresis		√	*Adapt*			
	• Obtain FDA variance to allow new Pool and Store sites to ship across state lines*		√	*Adapt*			
	• Reduce pool sizes to platelets from 3 whole blood donations		√	*Adapt*			

*FDA approval/variance required via American Association of Blood Banks (AABB)

RENAL REPLACEMENT THERAPY
REGIONAL RESOURCE CARD

MINNESOTA HEALTHCARE SYSTEM
PREPAREDNESS PROGRAM

Resource cards are intended to provide incident-specific tactics and planning information to supplement the general strategy cards. They are organized according to the 'CO-S-TR' framework of incident response planning – http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=8844490&fulltextType=RA&fileId=S193578930000135X

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Command, Control, Communication, Coordination	**General Preparedness Information** Compared to other critical care interventions, hemodialysis offers equipment availability, expansion capacity, and care coordination that greatly reduces the risk of contingency and crisis care, at least in our geographic area. Disaster dialysis challenges generally result from: 1. Lack of clean water sources (each hemodialysis requires about 160 liters ultra-clean water) 2. Relocation of dialysis-dependent patients to a new area (evacuation of nursing homes, flood zones, etc.) 3. Increase in patients requiring dialysis (crush syndrome, unusual infections) <u>Outpatient</u> • Primary providers are DaVita and Fresenius – both have extensive contingency plans to increase capacity and relocate patients (including toll-free numbers to access dialysis services) • Renal Network 11 (multi-state renal planning, quality, and emergency preparedness) has database of all dialysis patients in the state/region and assists coordination activities (http://www.esrdnet11.org/resources/disaster_prep_resources.asp) <u>Inpatient</u> • Most facilities lease inpatient services via contract with above or other agencies; some have own nurses and program – plans should account for contingency use of alternate services / leasing services <u>Patient preparedness</u> • Patients should have a disaster plan – including specific foods set aside for up to 72h. Note that shelters are unlikely to have foods conducive to renal dietary needs (low sodium, etc.) • Personal planning guidance is available at: http://www.kidney.org/atoz/pdf/disaster_prepardness.pdf **Shortage of Renal Replacement Therapy (RRT) Resources** • Affected facility should contact involved/affected dialysis provider companies and organizations as expert consultants[1] (MDH OEP and the Renal Network 11 website maintain contact information)	*Prepare*			
Space	**Relocated Patients Requiring Outpatient Dialysis** • Contact usual outpatient provider network to schedule at new facility – refer patients to 'hotlines' as needed **Excess Patients Requiring Dialysis** • Transfer patients to other facilities capable of providing dialysis • Consider moving patients to facilities with in-house water purification if water quality is an issue for multiple inpatients requiring dialysis	*Substitute*			
	• Consider moving other inpatient or outpatient dialysis staff and equipment to facilities requiring increased dialysis capacity	*Adapt*			

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RENAL REPLACEMENT THERAPY
REGIONAL RESOURCE CARD

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Supplies	**Water Supply** • Quantify water-purifying machines available for bedside dialysis machines • Identify facilities providing high-volume services that purify their own water and pipe to specific rooms in the dialysis unit, intensive care, etc. • Identify water-purifying and dialysis machines to be obtained through lease agreements	*Prepare*			
	Water Contamination • Consider alternate sources of highly purified water	*Prepare*			
	• Consider transferring stable inpatients to outpatient dialysis centers for dialysis treatments and vice versa	*Substitute*			
	• Consider use of MN National Guard water reserves and purification equipment – but must assure adequate purity for dialysis (potable is NOT sufficiently clean)	*Adapt*			
	Power Outage or Shortage • Consider transferring stable inpatients to outpatient dialysis centers for dialysis treatments and vice versa • Consider transferring inpatients to other hospitals • Consider transfer of outpatients to other facilities for care until issue resolved	*Substitute* *Adapt*			
	Dialysis Catheters, Machines, Reverse Osmosis Machines, and/or Other Supply Shortages ***Note:*** Dialysis catheters and tubing are inexpensive, relatively interchangeable, and supplied by several manufacturers				
	• Stock adequate dialysis tubing sets and venous access catheters (Quinton, etc.) for at least one month's usual use • Identify provider network and other sources of supplies and machines	*Prepare*			
	• Transfer machines/supplies between outpatient centers and hospitals, or between hospitals	*Substitute*			
Staff	**Dialysis Staff Shortages**[2] • Non-dialysis nursing staff to take on "routine" elements of dialysis nursing (e.g., taking VS, monitoring respiratory and hemodynamic status, etc.)	*Substitute*			
	• Dialysis nursing staff to supervise non-dialysis nursing staff providing some dialysis functions • Outpatient dialysis techs may be used to supervise dialysis runs if provider deficit is critical issue (would be unlikely aside from potentially in pandemic or other situation affecting staff)	*Adapt*			
Special	**Community Planning** • Medical needs of re-located renal failure patients are substantial; planning on community level should incorporate their medication and dietary needs during evacuation and sheltering activities.	*Prepare*			
Triage	**Insufficient Resources Available For All Patients Requiring Dialysis** • Change dialysis from 'scheduled' to 'as needed' based on clinical and laboratory findings (particularly hyperkalemia and impairment of respiration) – parameters may change based on demand for resources	*Conserve*			
	• Conceivable (but extraordinary, given outpatient dialysis machine resources) situations may occur where resources are insufficient to the point that some patients may not be able to receive dialysis (for example, pandemic when demand nationwide exceeds available resources) – access to dialysis should be considered as part of critical care intervention prioritization (see Mechanical Ventilation Strategies for Scarce Resource Situations)	*Re-allocate*			

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RENAL REPLACEMENT THERAPY
REGIONAL RESOURCE CARD

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Treatment	**Crush Syndrome** • Initiate IV hydration and acidosis prevention protocols "in the field" for crush injuries to prevent/treat rhabdomyolysis in hospital settings	*Conserve*			
	Mode of Dialysis • Restrict to hemodialysis only for inpatient care (avoid continuous renal replacement therapy(CRRT) and peritoneal dialysis (PD) due to duration of machine use (CRRT) and supply issues (PD))	*Substitute*			
	Increased Demand on Resources • Shorten duration of dialysis for patients that are more likely to tolerate it safely • Patients to utilize their home "kits" of medication (Kayexalate) and follow dietary plans to help increase time between treatments, if necessary	*Conserve*			
Transportation	**Transportation Interruptions** • Dialysis patients may require alternate transportation to assure ongoing access to dialysis treatment. • Chronic patients should coordinate with their service providers / dialysis clinics first for transportation and other assistance during service/transportation interruptions. • Emergency management and/or the health and medical sector may have to supplement contingency transportation to dialysis during ice storms or other interruptions to transportation.	*Prepare* *Adapt*			

[1] The major national dialysis corporations have extensive experience contending with disasters; their input during any anticipated or actual incident is imperative to optimize the best patient care in Minnesota.

[2] See Staffing in the Core Clinical Strategies for Scarce Resource Situations card set.

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BURN TREATMENT
REGIONAL RESOURCE CARD

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

Resource cards are intended to provide incident-specific tactics and planning information to supplement the general strategy cards. They are organized according to the 'CO-S-TR' framework of incident response planning – http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=8844490&fulltextType=RA&fileId=S193578930000135X

<table>
<tr><th>Category</th><th>RESOURCE and RECOMMENDATIONS</th><th>Strategy</th><th>Conventional</th><th>Contingency</th><th>Crisis</th></tr>
<tr><td rowspan="1">Command, Control, Communication, Coordination</td><td>

General Preparedness Information

- This cardset is specifically designed to address supplies and needs during the first 24 hours of care

American Burn Association verified burn centers in Minnesota	Referral/Consultation Phone numbers	# Burn Beds
Hennepin County Medical Center (HCMC)	1-800-424-4262	17
Regions Hospital (Regions)	1-800-922-BURN (2876)	18

- Additional capacity and burn expertise may be available at:
  - Essentia Health-Duluth (15 bed burn unit)
  - Mayo Clinic St. Marys Hospital in Rochester (no burn unit)
- Burn casualties must be stabilized at the receiving hospital and then transferred to a burn center. Burn casualties should initially be transported to the highest level of burn/trauma care that is available in the area.
- Metro Regional Hospital Resource Center (RHRC) will coordinate transfers of patients to concentrate as many burn patients at, or close to, burn centers per Metropolitan Cooperative Burn Plan
- Greater Minnesota incident – contact MDH-OEP on-call (via State Duty Officer) if HCMC and Regions are unable to accommodate casualties or if assistance required with transportation/resource issues; affected regional healthcare coalition/Regional Healthcare Preparedness Coordinator will coordinate with MDH and Metro RHRC
- Mass burn incidents are unusual but must be anticipated. The ability of non-burn center hospitals to stabilize successfully and initially treat victims is critical to successful response. All hospitals should plan for incidents considering their relative size and role in the community
- In a mass burn incident, burn consultation resources will be provided. Resource contacts may be outside of Minnesota (e.g., University of Michigan), because HCMC and Regions staff will be occupied with patient care and transfer activities

</td><td>Prepare</td><td></td><td></td><td></td></tr>
<tr><td rowspan="3">Space</td><td>

Space

- Maximal use of burn beds at HCMC, Regions, and Essentia Health-Duluth

</td><td>Adapt</td><td></td><td></td><td rowspan="3"></td></tr>
<tr><td>

- Expand burn units at HCMC and Regions into other ICU spaces at those hospitals

</td><td>Conserve</td><td></td><td></td></tr>
<tr><td>

- Transfer non-burn ICU patients out of HCMC and Regions to other facilities according to Metro Compact, if necessary
- Cohort overflow at institutions close to burn centers (Abbott Northwestern, St. Joseph's, Children's)
- Forward movement to regional burn centers in adjoining states as required to assure appropriate ongoing care in coordination with MDH-OEP and Great Lakes Healthcare Partership (FEMA Region V - MN, WI, IL, IN, MI, OH), and IA and MO burn centers (most burn centers have 6-12 beds each)
- National Disaster Medical System (NDMS) patient movement may be required in massive incidents. In such an event, a burn transfer coordination point will be designated and contact information circulated to hospitals

</td><td>Adapt</td><td></td><td></td></tr>
</table>

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BURN TREATMENT
REGIONAL RESOURCE CARD

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Supplies — Typical Planning Numbers	**Hospital Outpatient Supply Planning**	*Prepare Increase Supply*			

Center Type	Burn Center	Level I & II Trauma Centers	Level III & IV Trauma Centers
Number of Outpatients	100	50	25

Outpatient clinics and urgent care centers may also cache appropriate supplies for their location and patient population.
Suggested supplies per patient for first 72 hours (amounts needed will vary) include:

- 5 - 8 cm x18 cm (3 x 7 inch) sheets petroleum-impregnated gauze (e.g., Adaptic)
- 4 - 10 cm (4 inch) rolls of stretchable roller gauze (e.g., Kerlix); variety of sizes suggested
- 2 - 120 g (4 oz) tube bacitracin
- 30 tablets of ibuprofen 800 mg and stock liquid form for pediatric use
- 50 – opioid analgesic tablets (50 tablets for 5 day supply if 1-2 tablets every 4 to 6 hours); also stock pediatric alternatives
- Assume half of all patients will require tetanus boosters
- Especially in smaller communities, outpatient/pharmacy resources may be limited. Assess and plan for up to 72 hours without re-supply

Adapt

Inpatient Supply Planning

Institutions should prepare based on role in community. In contingency/crisis situation, emphasis moves away from silver-impregnated dressings (expensive to stockpile) to bacitracin/petrolatum-impregnated dressings (e.g. Adaptic). If transfer is possible within the first 24 hours, simple dry sterile sheets or dressings are appropriate - see Burn Triage Card for further information.

Prepare Increase Supply

Adapt

Center Type	Burn Center	Level I & II Trauma Centers	Level III & IV Trauma Centers
Number of Inpatients	50	10	5

Consider stocking, or having plans to obtain supplies sufficient for 2-3 days of care.
Estimated usage of supplies per 24 hours **per patient** is below.

- 15 - 8 cm x 18 cm (3 x 7 inch) sheets petroleum gauze (about 50 % of total body surface area (BSA) normal body mass patient - use as average for major burn patient)
- 2 - bacitracin 120 g (4 oz) tubes (or 1 lb. jar for 2 victims)
- 10 rolls of 10 cm (4 inch) stretchable roller gauze, such as Kerlix
- 2 - 5 cm (2 inch) rolls stretchable roller gauze (e.g., Kerlix) for fingers/toes/small area wrapping - can cut 4 inch in half also
- Morphine (or equivalent) 10 mg/hour x 24 hours = (roughly) 250mg/day/patient
- Massive doses of opioid analgesia and anxiolytics may be required by burn patients (including any patients that are only receiving palliative care)
- 1 tetanus booster per 2 patients
- IV fluid - for example from Parkland formula 4mL/kg x 50% BSA = 14 liters of fluid. Lactated Ringers usually preferred, but saline acceptable
- 1 - central line (including 20% pediatric sizes)

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BURN TREATMENT
REGIONAL RESOURCE CARD

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Staff	**Staff** • Strongly consider pre-incident training on care of major burns for physician and nursing staff; have quick-reference cards/materials available for burn stabilization • Identify staff with prior burn treatment experience (e.g., military) • Plan for just-in-time training for non-burn nursing and physician staff, reinforcing key points of burn patient care (including importance of adequate fluid resuscitation, urine output parameters, principles of analgesia, etc.) • Consider sending burn-trained RN/MD to affected center to assist with triage and initial management if staffing allows. • Burn nurses and physicians provide burn/dressing related care only; other ICU and floor nursing and physician staff provide supportive care. Adjust burn nurse staffing patterns as needed. See *Staffing Strategies for Scarce Resource Situations* sheet for further considerations • Consider just-in-time training on dressing changes, wound care and monitoring – especially at non-burn centers • MDH may work with state and upper Midwest experts to set up a 'hotline' and/or telemedicine or other virtual means by which non-burn centers may easily consult with burn experts • National Disaster Medical System (NDMS) personnel and other supplemental staff may be required	*Prepare* *Adapt* *Adapt* *Conserve* *Adapt* *Substitute*			
Special	**Special Considerations** Consider availability of resources for: • Airway/inhalational injury – extra airway management supplies, bag-valve assemblies, etc. • Pediatric age-appropriate intravenous, intraosseous access devices, medication dosing guides • Consider carbon monoxide or cyanide poisoning if closed space smoke exposure – consult Poison Control Center* • Inhalational exposure – aggressive, early airway management for inhalational injuries • Electrical – high incidence of rhabdomyolysis and internal injuries – increase fluid resuscitation, add bicarbonate to intravenous fluids to alkalinize urine, monitor serum bicarbonate, creatinine, and creatine kinase • Chemical and radiologic – consider need for specific therapies - consult Poison Control Center* • Consider need for decontamination - consult Poison Control Center* • Psychological support for patients, their families and staff. (Do not under-estimate the increased stress and psychological impact of a burn incident, particularly a mass casualty incident, on health care providers.) * Poison Control Center 1-800-222-1222	*Prepare*			

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Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Triage	**Critical Burns – Transfer to Burn Center As Soon As Possible** • See Burn Triage Card • Regardless of the extent of burn involvement, palliation of pain should be considered a priority. If large number of casualties and very severe burns, triage may have to be implemented based on knowledge of percent burn, age and underlying health issues, combined trauma or other conditions (such as severe inhalational injury). Initially, full support should be provided to as many patients as possible. **A triage table may contribute to decisions made by burn surgeons but should NOT substitute for a more global assessment of patient prognosis.** (Saffle JR, Gibran N, Jordan M. Defining the ratio of outcomes to resources for triage of burn patients in mass casualties. J Burn Care Rehabil. 2005;26:478-482)	*Conserve* *Re-Allocate*			

Age (yrs)	Burn Size (% total body surface area)									
	0-10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	71-80%	81-90%	91%+
0-1.9	Very high	Very high	Very high	High	Medium	Medium	Medium	Low	Low	Low/ Expectant
2.0-4.9	Outpatient	Very high	Very high	High	High	High	Medium	Medium	Low	Low
5.0-19.9	Outpatient	Very high	Very high	High	High	High	Medium	Medium	Medium	Low
20.0-29.9	Outpatient	Very high	Very high	High	High	Medium	Medium	Medium	Low	Low
30.0-39.9	Outpatient	Very high	Very high	High	Medium	Medium	Medium	Medium	Low	Low
40.0-49.9	Outpatient	Very high	Very high	Medium	Medium	Medium	Medium	Low	Low	Low
50.0-59.9	Outpatient	Very high	Very high	Medium	Medium	Medium	Low	Low	Low/ Expectant	Low/ Expectant
60.0-69.9	Very high	Very high	Medium	Medium	Low	Low	Low	Low/ Expectant	Low/ Expectant	Low/ Expectant
70.0+	Very high	Medium	Medium	Low	Low	Low/ Expectant	Expectant	Expectant	Expectant	Expectant

Outpatient: Survival and good outcome expected, without requiring initial admission; **Very High:** Survival and good outcome expected with limited/short-term initial admission and resource allocation (straightforward resuscitation, LOS <14-21 days, 1-2 surgical procedures); **High:** Survival and good outcome expected (survival ≥ 90%) with aggressive and comprehensive resource allocation, including aggressive fluid resuscitation, admission ≥14-21 days, multiple surgeries, prolonged rehabilitation; **Medium:** Survival 50-90% and/or aggressive care and comprehensive resource allocation required, including aggressive resuscitation, initial admission ≥14-21 days, multiple surgeries and prolonged rehabilitation; **Low:** Survival <50% even with long-term aggressive treatment and resource allocation; **Expectant:** Predicted survival ≤10% even with unlimited aggressive treatment.

BURN TREATMENT
REGIONAL RESOURCE CARD

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Treatment	**Treatment** Provide stabilizing burn care (airway, fluid management, analgesia, etc. – see Burn Triage Card with initial priorities, wound care, and nursing care). After stabilizing care, assess need for transfer to burn center. In a mass burn incident, assure coordination with Regional Hospital Resource Center, which will help to prioritize transportation and manage logistics. Patients may have to be held for 1-2 days at non-burn centers awaiting transfer in some cases.	*Adapt*			
Transport	**Transport** • Initial dressings should be dry, sterile dressing if transfer planned. If transfer will be delayed, adaptic dressings may be applied in consultation with burn center. • In consultation with burn specialist, arrange air medical transport or ground transport as appropriate. If multiple institutions are affected, coordinate with Regional Hospital Resource Center/Regional Healthcare Preparedness Coordinators • Obtain consultation with burn experts for ongoing care and triage/transportation prioritization if immediate transportation/referral is not possible • Plan for oxygen, fluids, and analgesia requirements during transport • Consider need for airway intervention prior to transport • Multi-agency coordination center may be used to help prioritize use of transportation assets • Consider use of Metro Mass Casualty Incident (MCI) buses for large numbers of patients being transferred (contact MDH-OEP on-call via State Duty Officer) • Regional transfer may be required – Metro Regional Healthcare Resource Center will coordinate this with MDH-OEP and appropriate state and Federal (NDMS) resources	*Prepare* *Adapt*			

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BURN TRIAGE CARD

Patient Arrives / Initial Assessment

High risk features? *

- Partial thickness burns > 10% total body surface area (BSA)
- Burns that involve the face, hands, feet, genital area or joints
- Third degree burns
- Electrical burns, including lightning injury
- Chemical burns
- Inhalation injury
- Any patient with burns and concomitant trauma

* Consultation/special consideration recommended for elderly, children <5 years, underlying diseases such as diabetes, or special rehabilitation needs

Yes

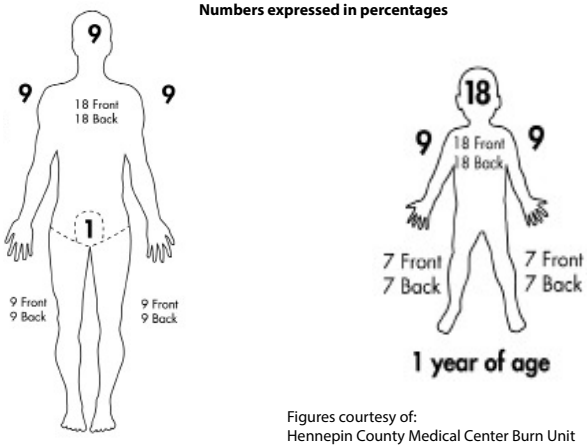
No

Minor

- Consider outpatient management, consultation/referral to wound/burn clinic or burn center as required
- Burn care outpatient supplies see Burn Treatment Regional Resource Card

Rule of Nines

Numbers expressed in percentages



Figures courtesy of:
Hennepin County Medical Center Burn Unit

American Burn Association Burn Centers in Minnesota	
Hennepin County Medical Center	1-800-424-4262
Regions Hospital	1-800-922-BURN (2876)

Initial Interventions:

Airway/Breathing – Assess airway and provide oxygen. Consider early intubation for >25% BSA burns. Intubation recommended: stridor, voice change, respiratory distress, circumferential neck burns, carbonaceous sputum, hypoxia, or prolonged transport time and major burn patient

Circulation - Assess vital signs and pulses. Burn shock common >20% BSA. Treat low blood pressure with IV fluids; consider other sources of hypotension. Avoid boluses when possible - increase fluid rates by 10% per hour for low urine output or lower blood pressures

Disability – Assess neurologic status (including sensation and motor); cervical spine protection if trauma/high-voltage (>1000 V) injury

Decontamination – Consider potential for chemical/radiologic contamination. Chemical burns should be irrigated for 30 minutes with body temperature water while consulting Poison Control* about specific treatments

Expose/Estimate - Remove clothing, jewelry, and contact lenses. Protect from hypothermia. Estimate second/third degree burn area (see figures below). Area of patient's hand (including fingers) equals 1% BSA

Fluids - IV access in non-burned tissue if possible. Start Lactated Ringers (LR) 4 mL/kg/% BSA. Give 50% over first 8 hours and rest over 16 hours from time of burn. Children <5 years add 2 ampules D50 to each liter of LR. May use normal saline if no LR available

History – Note time of injury, mechanism, AMPLET (Allergies, Medications, Past surgical and medical history, Last meal, Events surrounding the incident, Tetanus status)

Nasogastric or Orogastric - Insert tube for all intubated patients

Pain Control – Administer analgesia; extraordinary doses may be required to control pain adequately

Urine Output – All electrocutions, intubated patients, and major burns should have indwelling urinary catheter (e.g., Foley). Goal is 0.5mL/kg/hr output adults, 1mL/kg/hr children

Wound Care – Do not remove adherent clothing. Warm, dry dressings over burns - NO wet dressings

Special Considerations:

- Closed space exposure assume carbon monoxide and/or cyanide toxicity - provide 100% oxygen*
- High-voltage electrical – assume rhabdomyolysis and assess for internal injuries. Normal saline resuscitation untl clear urine output 1-2 mL/kg/hr. Monitor creatine kinase, serum bicarbonate and creatinine. Consult with burn/referral center for ongoing management

*Consult Minnesota Regional Poison Control Center at 1-800-222-1222.

Secondary Assessment – Critical Burn Features?

- >20% BSA second and/or third degree burns
- Intubated patient, inhalational injury, or prolonged closed-space smoke exposure
- Co-existing major trauma, rhabdomyolysis, or other complications
- Hemodynamic instability not responding to fluid resuscitation

Yes

No

High Priority For Transfer To Burn Center

- Continue fluid resuscitation and analgesia
- Escharotomies may be required to allow ventilation of patients with circumferential neck, chest or abdominal burns
- Arrange transfer and consultation
- Some patients in this category may be triaged to receive only palliative care (until/unless additional resources become available)

Secondary Priority For Transfer

- May have to manage in place awaiting transfer (24-48 hours)
- Obtain consultation from burn center - MDH may organize hotline/alternative resources during mass casualty incidents
- Cover burns with clean dry linens - no immediate dressings are necessary if transferred in the first 24 hours - after 24 hours consider bacitracin dressings per burn consultation
- Monitor urine output and provide IV fluids to maintain parameters as above
- Infection control – providers should gown, glove, and mask
- Follow cardiorespiratory and renal function
- Maintain body temperature
- Consider early use of enteral/tube feedings if oral intake inadequate
- Analgesia
- Circulation, Motor and Sensory function (CMS) checks
- Evaluate for other injuries

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PEDIATRICS
REGIONAL RESOURCE CARD

Resource cards are intended to provide incident-specific tactics and planning information to supplement the general strategy cards. They are organized according to the 'CO-S-TR' framework of incident response planning – http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=8844490&fulltextType=RA&fileId=S193578930000135X

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis

Command, Control, Communication, Coordination	**Planning and response considerations:**
	Tertiary centers with inpatient pediatric, trauma and PICU capability can provide consultation and transfer support based on patient needs. The following centers can provide real-time consultation in support of pediatric critical care when transfer is difficult or not possible or when highly specialized services (e.g. ECMO) are anticipated to be needed.
	• Pediatric hospital resources in Minnesota:
	  • Level I Pediatric Trauma Centers – Hennepin County Medical Center, Mayo Clinic Eugenio Litta Children's Hospital, Gillette Children's/Regions Hospital, Children's Hospitals and Clinics of Minnesota
	  • University of Minnesota Amplatz Children's Hospital
	  • St. Mary's Children's Hospital Duluth (Essentia)
	  • Other tertiary centers with inpatient pediatric and PICU capability
	• Pediatric patients will have to be stabilized (and in some cases treated, for 24 to 48 hours) at initial receiving hospital in major incident – all facilities must be prepared for pediatric cases
	• Facility procedures for patient tracking, unaccompanied minors, and release of minors to family/caregivers
	• Smaller incidents – facility-to-facility coordination
	• Metro - Regional Hospital Resource Center (RHRC) will coordinate transfers of patients to concentrate as many pediatric patients as possible at, or close to, pediatric centers per Metropolitan Cooperative Pediatric Plan (concentrate those less than 5 years of age and critically ill at children's hospitals)
	• Statewide incident impact
	  • MDH will work with Regional Healthcare Preparedness Coordinators (RHPCs) and hospitals/healthcare coalitions to facilitate patient and resource distribution
	  • Statewide consultation/referral hotline may be initiated as needed
		Prepare			

Space	**Space:** • Use maximal beds on pediatric unit and at pediatric centers noted above • Prioritize transfer of children < 8 years of age to pediatric specialty centers • Surge to non-pediatric, age-appropriate units within hospital • Distribute non-critical and older pediatric patients from overwhelmed pediatric centers to other accepting facilities • Expand acute outpatient care for the minimally injured/ill • Forward movement to regional pediatric centers in adjoining states as required to assure appropriate ongoing care – in coordination with MDH-OEP and Great Lakes Healthcare Partnership (FEMA V – MN, WI, IL, IN, OH, MI and city of Chicago) and/or National Disaster Medical System (NDMS) patient movement for catastrophic incident (unlikely to only affect pediatric portion of population)	*Adapt* *Conserve* *Substitute*			

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PEDIATRICS
REGIONAL RESOURCE CARD

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

<table>
<tr><th>Category</th><th>RESOURCE and RECOMMENDATIONS</th><th>Strategy</th><th>Conventional</th><th>Contingency</th><th>Crisis</th></tr>
<tr><td rowspan="2">Supplies</td><td>

Outpatient Supply Planning:

- Consider expansion of outpatient pediatric-specific supplies (e.g., crutches, pediatric-specific forms of analgesics) at facility to support discharged patients

Inpatient Supply Planning:

- Institutions should prepare based on role in community
- As a minimum, recommend each facility be prepared to care for the number of victims listed in the table below, based on their designated trauma level in the MN Trauma System.

<table>
<tr><th rowspan="2">Inpatient Type</th><th colspan="4">Minnesota State Trauma Designation</th></tr>
<tr><th>Level I</th><th>Level II</th><th>Level III</th><th>Level IV</th></tr>
<tr><td>Critical Injuries < age 8 yrs</td><td>8</td><td>6</td><td>4</td><td>2</td></tr>
<tr><td>Moderate Injuries < age 18 yrs</td><td>20</td><td>15</td><td>10</td><td>5</td></tr>
<tr><td>Minor Injuries < age 18 yrs</td><td>20</td><td>15</td><td>10</td><td>5</td></tr>
<tr><td>Infants < age 1 yr</td><td>4</td><td>3</td><td>2</td><td>1</td></tr>
</table>

</td><td rowspan="2">Prepare</td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td>

The American Academy of Pediatrics/American College of Emergency Physicians recommended equipment list at http://pediatrics.aappublications.org/content/107/4/777.full.pdf+html is the basis for planning, with emphasis on:

- Airway equipment sufficient for number and age of victims
- Vascular access equipment, including adequate quantity of intravenous cannulas and intraosseous needles
- References, charts, or other systems for size/weight-based equipment and drug dosing (reference book, wall charts, Broselow tape, or similar)
- External warming devices (such as Bair-hugger™)
- State trauma system guidelines also identify pediatric equipment expectations

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</table>

PEDIATRICS
REGIONAL RESOURCE CARD

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Staff	**Staff:** • Pre-incident pediatric medical/trauma critical care training should be conducted for physician and nursing staff expected to provide emergency care. Consider courses such as Advanced Pediatric Life Support, Pediatric Advanced Life Support • Staff that do not regularly provide pediatric emergency care but could be called upon in a disaster should receive pre-incident training and orientation to facility equipment. Scenario-based or other training (simulation and other brief, frequent training) is highly recommended • Just-in-time training may be required in certain situations for non-pediatric nursing and physician staff reinforcing key points of pediatric or incident-specific patient care (including pediatric assessment triage, importance of fluid management, urine output parameters, principles of analgesia, etc) • In a major incident, adjust pediatric physician and nurse staffing patterns as needed to provide supervision of key aspects of pediatric care. See *Staffing Strategies for Scarce Resource Situations* for further consideration; for example, have critical care staff supervise care at a higher level, delegating many bedside duties to other providers • MDH may work with in-state and adjacent state experts to set up 'hotline' to provide consultation to non-pediatric centers caring for pediatric patients (for example during pandemic) • National Disaster Medical System and/or other supplemental staff may be required to work in facilities (see *Staffing Strategies for Scarce Resource Situations*)	*Prepare* *Adapt* *Conserve* *Adapt* *Substitute*			
Special	**Consider availability of resources for:** • Social work/ family support • Psychological support for children, their families and staff (do not under-estimate the increased stress and psychological impact of a pediatric incident, particularly a mass casualty incident, on healthcare providers) • Discharge support and planning, particularly for rehabilitation and other specialty follow-up • Patient tracking and patient safety, particularly for unaccompanied minors (e.g. banding system to identify children and guardians) • Family / caregiver accommodations	*Prepare*			
Triage	**Consider early transfer to a facility providing pediatric intensive care services for:** • Progressing respiratory symptoms/hypoxia • Shock, or need for ongoing resuscitation • Critical trauma, including neurotrauma according to usual trauma triage criteria • Patients with concomitant burns should be transferred to Regions Hospital or Hennepin County Medical Center • Patients with complex underlying medical conditions may require consultation or special triage considerations	*Conserve*			

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Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Treatment	**Provide stabilizing care (airway, fluid management, analgesia, etc.) – see Pediatric Triage Card for initial priorities** **Special Considerations:** • Airway/Breathing and Circulation (ABCs) are still critical – do not deviate from usual trauma/critical care priorities due to size/age/behavior concerns • Pediatric airways are small; there is little room between partial and complete obstruction • Age and height-based estimations are NOT always accurate – always be prepared with a range of equipment sizes, especially for airway interventions • Assess skin color, capillary refill and heart rate for signs of poor perfusion. Hypotension is a late sign of shock in pediatric patients • Typically, pediatric patients respond to treatments more quickly than adults. Reassess them frequently and alter treatments to fit the response • Monitor for signs of pain and treat pediatric patients with analgesics via weight-based guidelines, then titrate to effect. Pediatric pain is often inadequately treated • Hypoglycemia and hypothermia are very common –anticipate, prevent, and correct as necessary • Monitor IV fluids carefully to control volume delivered in smaller patients (e.g., IV pumps or buretrols) • Double-check medication doses with team members, especially with medication drips as significant errors are common. DO NOT exceed maximum adult dose • Assessment may be difficult due to age-related and communication-related issues – history from the family/caregivers may be critical • Do not separate the child from family/guardian if at all possible • Medical alert bracelets and care plans should be sought for all children	*Prepare*			
Transportation	**After stabilizing care, assess need for transfer:** • Plan for oxygen, fluids, and analgesia requirements in transport • Consider need for airway intervention prior to transport • Consider plans for caregivers/family transportation • A mass casualty incident may affect more than one facility requiring coordination with regional healthcare coalitions to prioritize transportation and manage logistics via Multi-Agency Coordination • Regional transfer coordination may be required in major disasters – MDH Office of Emergency Preparedness will assist regional healthcare coalitions and involve appropriate State and Federal (NDMS) resources; in certain situations (such as pandemic, major mass casualty incident) patients may have to receive care in non-pediatric centers • Ensure that targeted medical record information (including name, allergies, medications given, current medications, age and family contact information) is always with patient • Arrange transport via air medical transport as appropriate – if multiple institutions affected coordinate with regional healthcare coalition and/or multi-agency coordination system	*Prepare* *Adapt*			

PEDIATRIC TRIAGE CARD For Mass Casualty Situations

Patient Arrives / Initial Assessment

High Risk Features? *

- Hypoxia or respiratory distress
- Multiple injuries or high-energy mechanism
- Signs of hypoperfusion / shock (may be isolated to tachycardia)
- Altered mental status

* Consultation may be warranted for age <5 years, or underlying complex illness/disease (congenital abnormality, etc.)

Yes →

No ↓

Minor:

- Assessment, treatment and observation
- Address psychosocial needs; re-unify with family; support as needed
- Discharge, if able, to secure environment if parent/guardian not accompanying

Initial interventions:

Airway – Assess and position airway; airway interventions as needed. Children < 5 years have small airways that do not tolerate edema well. Reassess frequently

Breathing – Assess for evidence of respiratory distress (retractions, hypoxia, grunting). Provide oxygen, bronchodilators (e.g., albuterol, epinephrine) and other interventions as needed

Circulation – Assess for signs of hypoperfusion including capillary refill, vital signs, pulses, etc. Fall in blood pressure is late and end-stage. Treat signs of hypoperfusion aggressively with 20 mL/kg normal saline (and 10 mL/kg packed red blood cells if hemorrhagic shock persists after initial boluses of saline), see Fluid Management below

Disability – Assess neurologic status (including sensation and motor) and need for cervical spine protection

Decontamination – Consider for chemical/radiologic – brush away loose material, then copious water. Consult Poison Control Center at 1-800-222-1222

Expose - Remove clothing, jewelry and, if mental status altered, contact lenses. Protect from heat loss; hypothermia is common

Fluids – IV fluids (see Fluid Management below)

Family – Avoid separating family/guardians from patients. Identify and notify patient's family/guardians of patient's status when possible

Glucose – Check fingerstick glucose for all significantly ill/injured children. Correct hypoglycemia

History – Note mechanism and time of injury, treatments pre-hospital, underlying diseases, tetanus status, medications/allergies, social history, family history, immunization history

Orogastric – Tube for all intubated patients (due to usual gastric distension)

Pain control – Titrated opioid analgesia, IV, intranasal, or subcutaneous as required for comfort (e.g., morphine 0.1 mg/kg or fentanyl 1 mcg/kg IV)

Temperature/Thermal – Protect from heat losses; initiate cooling/rewarming or anti-pyresis as indicated. Children lose body heat rapidly

Urine output– Target urine output to 0.5 - 1 ml/kg/hour. Indwelling urinary cathether as needed

↓

Secondary Assessment – Critical illness/injury?

- Intubated or progressive respiratory failure
- Multiple organ systems affected
- Surgical emergency
- Evidence of shock (poor perfusion, high lactate, persistent tachycardia) not responding to fluid resuscitation

Yes →

High Priority for Transfer to Pediatric Center

- Continue fluid resuscitation
- Arrange transfer and consultation
- May have to provide transfers, triage resources, or even provide palliative care as only intervention based on scope of injury/nature of incident. Re-triage as more resources become available or condition changes.

No ↓

Secondary Priority for Transfer

- May have to manage in place awaiting transfer (24-48 hours) (e.g. isolated orthopedic injuries)
- Obtain consultation from pediatric referral center (during mass casualty incident MDH may organize hotline)
- Diagnostic studies as indicated (minimize ionizing radiation without omitting necessary studies)
- Monitor urine output and provide IV fluids (see Fluid Management)
- Infection control – providers should gown, glove and mask as appropriate for illness/injury
- Follow cardiorespiratory and renal function, Circulation, Motor and Sensory function (CMS) and glucose checks at regular intervals
- Maintain body temperature
- Analgesia
- Psychological triage and support/family support

Fluid Management

- Initial fluid for resuscitation – normal saline
  - Initial bolus 20 mL/kg, repeat as needed
  - May initiate packed red blood cells 10 mL/kg if hemorrhage not responding to 40 mL/kg saline total bolus
- Maintenance fluid rate
  - 4 mL/kg/hr first 10 kg (40 mL/hr)
  - 2 mL/kg/hr second 10kg (20+40 = 60 mL/hr)
  - 1 mL/kg/hr each kg >20 kg
- Glucose replacement IV/IO
  - Neonate D10W 3 mL/kg
  - Under 4 years D25W 2mL/kg
  - ≥ 4 years D50W 1 mL/kg
- Goals – normal vital signs, urine output 0.5-1 mL/kg/hr

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Resource list of pediatric emergency equipment:
http://pediatrics.aappublications.org/content/107/4/777.full.html

For pediatric planning, response poster and materials, refer to MDH Pediatric Primer:
http://www.health.state.mn.us/oep/healthcare/pedsprimer.docx

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PALLIATIVE CARE
REGIONAL RESOURCE CARD

Resource cards are intended to provide incident-specific tactics and planning information to supplement the general strategy cards. They are organized according to the 'CO-S-TR' framework of incident response planning – http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=8844490&fulltextType=RA&fileId=S193578930000135X

Orientation to Specialty and Goals:

NOTE:
This card provides a focused description of palliative care management principles in disaster situations. These principles are relevant to all patients, as well as those who may receive palliative care as their only intervention due to demand on the healthcare system relative to their prognosis.

Specialty Description:
Palliative care has a goal of providing the best possible quality of life for people facing the pain and stress of a serious, but not necessarily terminal, medical condition. It can be appropriate for patients of any age and at any stage of an illness - from diagnosis on - and can be provided along with treatments for the medical condition.

Index:

Principles of Palliative Care:

- **Palliative care should be provided to ALL patients.**
- In a subset of patients, it may be the only care that is able to be provided due to the patient's prognosis and available resources
- Focuses on human contact and comfort in addition to medical care
- Increases the physical and mental well-being of the patient
- Is not abandonment or euthanasia, and does not aim to hasten death (though in some cases, the doses required to relieve severe symptoms may indirectly contribute to the dying process; however, this meets the ethical criteria for the double-effect principle where indirect harm is permissible in the service of a greater good)
- Relieves symptoms and provides physical comfort measures such as control of pain, nausea, dyspnea, temperature regulation, and positioning
- Assures respectful care, reassurance, and emotional and social support as possible

Disaster Considerations:

- Symptom support should be maintained in hospital and non-hospital environments – this will involve planning by outpatient entities such as hospice care, pharmacies, medical equipment providers as well as inpatient entities such as palliative care programs
- For existing hospice patients, the spectrum of care should be defined
- For those designated to receive only palliative care key considerations are:
  - ◊ Expected survival - hours, days, or weeks – this helps to guide needs, referrals, and resources
  - ◊ Required interventions – this helps guide location of care and support planning
  - ◊ Basis for designation – if the decision for palliative care is based on the lack of a single resource, there must be a plan for re-assessment if the patient's condition improves or more resources become available (i.e., would they qualify to receive additional treatment if more resources become available and how are they contacted/monitored) - see triage tree below
- Home health and other agencies will need to prioritize services relative to hospice patients during a disaster (as this can have significant impact on patient/family/agency planning)
- Supportive measures should be offered that maintain comfort, but do not prolong the dying process
  - ◊ If death is inevitable, there may be no point in providing intravenous fluids
  - ◊ **If death is not certain, other forms of support may be very reasonable as other resources become available**

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PALLIATIVE CARE
REGIONAL RESOURCE CARD

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis

Planning Resources	**Planning Resources:**
	• General palliative care resources and fact sheets
	  • End of Life/Palliative Education Resource Center (EPERC) - Medical College of Wisconsin http://www.eperc.mcw.edu/EPERC/FastFactsandConcepts
	• General recommendations for home care/family based care and infectious prevention
	  • Home Care Guide: Providing Care at Home http://www.minneapolismn.gov/www/groups/public/@health/documents/webcontent/wcms1p-088274.pdf
	• ICU care
	  • Improving Palliative Care in the ICU (IPAL-ICU project) http://www.capc.org/ipal-icu
	• General resources in palliative care and non-pharmacologic intervention
	  • Innovations in End-of-Life Care: Practical Strategies and International Perspectives http://www2.edc.org/lastacts/ http://www2.edc.org/lastacts/archives/archivesJuly02/nonpharm.pdf
		Prepare			

Planning / Communications and Coordination	**Key Minnesota Organizations:** • Minnesota Network of Hospice & Palliative Care (www.mnhpc.org) • Inpatient palliative care programs: Palliative care MD on 24 hour pager for most facilities/systems • Hospice programs: Majority of State has hospice program coverage and most programs usually have hospice MD on 24 hour pager - check with hospital health systems main contact/referral phone line	*Prepare*			

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PALLIATIVE CARE
REGIONAL RESOURCE CARD

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Communications and Coordination	**Communications and Coordination:** • Close coordination between hospitals, home care agencies, and public health is required prior to and during disasters in which increased home care and at-home palliative and hospice services are expected • Communications, including printed materials and a mechanism for ongoing situational awareness, are required during contingency and crisis events – this may involve conference calls or other means of keeping stakeholder agencies informed and up-to-date • In major disasters requiring proactive triage to palliative care only, MDH may provide additional guidance and incident-specific resources, which may include a hotline for advice and consultation about palliative care issues. Additional resources for families providing home care would also need to be made available by local and state public health and major healthcare systems **Communications with Families and Patients:** • Review advance care planning in the context of the current situation – proxy designations, advance directives, Physician Orders for Life-Sustaining Treatment (POLST) forms, http://www.mnmed.org/KeyIssues/POLSTCommunications/tabid/3291/Default.aspx. • Interventions able to be offered may not fulfill all of the preferences expressed in those directives http://www.health.state.mn.us/divs/fpc/profinfo/advdir.htm • Describe palliative support as a quality of life and aggressive symptom management framework that is not related to hastening death or euthanasia • Incorporate relevant cultural variables into palliative care plans • Proactively provide families and patients with up-to-date information on the resources in shortage and any relevant triage criteria/processes being used, as well as any necessary infection prevention measures • Explain the basis of triage decisions and any re-assessment or potential options. Re-frame goals of care with patient and family • Maintain hope despite changes in treatment/goals - factors that often decrease hope include feeling devalued, abandoned or isolated (“there is nothing more that can be done”), lack of direction and goals, and unrelieved pain and discomfort	*Prepare* *Adapt*			

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PALLIATIVE CARE
REGIONAL RESOURCE CARD

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Space	**Inpatient Space:** In crisis situations there may be a large number of patients that are receiving palliative care only – cohorted spaces may be an option for these patients. These areas should be: • Comfortable – the maximal physical comfort should be provided to patients and families and the environment and equipment should be as comfortable as possible given the resources available • Private – as much privacy as possible should be planned for the patients and families **Outpatient Space:** Facilities should have plans in place with home healthcare agencies as well as plans for family provision of palliative care. This may include: • Home care/hospice agencies should prioritize services to those with the most limited support or more intensive support needs during a disaster (e.g., prioritize services to those requiring intravenous fluids or medications, oxygen, or other high-intensity therapies - if these can be maintained during the disaster) • Phone banks and other indirect support services for families and patients **Transitions:** • When inpatients are receiving palliative care as their only treatment, they must be cared for in a space appropriate to their remaining life expectancy (i.e., patients with hours to live would not be moved, and patients with days or weeks remaining would be moved to another inpatient area or to home/outpatient care) • Access to pre-printed information for families guiding them in the provision of comfort care including: ◊ Analgesia and other medication dosing per physician or other instructions ◊ General information about prevention of decubitus ulcers and maintenance of comfort ◊ The dying process, what to expect, and what to plan for ◊ Resources that the family can use in case of questions or problems • Assure that appropriate infection prevention precautions are accounted for (e.g. droplet precautions)	*Adapt* *Conserve* *Adapt* *Substitute* *Adapt* *Conserve*			
Supplies	**Supplies:** There is no substitute for pre-event stockpiling of medications to treat key symptoms. *Every* disaster will require significant quantities of analgesics. The availability of adequate pain and symptom relief should be a key area of disaster planning. **Inpatient and Outpatient:** Anticipate the need for additional stocks of medications to provide analgesia and symptom relief for all patients. Inexpensive but critical medications to stockpile include: • Oral non-opioid analgesics (also valuable as anti-pyretics) • Opioid analgesics • Benzodiazepines • Anti-psychotics • Anti-emetics • Steroids • Diuretics Outpatient pharmacies should anticipate the need for increased supplies of these agents and support palliative care dosing of these agents that may be in excess of usual recommendations. • Avoid stockpiling or hoarding in the setting of increased demand.	*Prepare* *Adapt*			

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PALLIATIVE CARE
REGIONAL RESOURCE CARD

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Staff	**Staff:** • Physician and nursing staff expected to provide disaster palliative care should receive pre-incident palliative care training • Staff that do not regularly provide palliative care, but could be called upon in a disaster, should receive pre-incident training and orientation to facility resources • The facility should identify subject matter experts within their facility/area and obtain their input into palliative care planning. During a response, these experts can provide input on strategies and tactics, as well as provide overall clinical guidance and expertise	*Prepare*			
	• Faith-based and other community resources for non-clinical support may be critical assets for those receiving care at home • Spiritual resources should be made available to both patient and family if desired and feasible • Just-in-time training should be provided to nursing and physician staff as required to acquaint them with palliative care priorities, medication dosing, and other issues	*Conserve* *Adapt* *Substitute*			
	• Hospice agencies should have plans to adjust staff roles and triage services provided in response to increased demand • In case palliative care areas are activated, support these areas with staff that are comfortable with medication administration that can be supervised by staff with more experience. Precise recommendations on staffing are difficult as the needs of the patients can vary greatly, but every attempt should be made to provide adequate personnel to meet the comfort needs of patients – this may involve tiered use of professional and non-professional staff • Additional staff may have to be drawn from other institutions or fields, or from the Medical Reserve Corps (e.g., to provide broader support to homecare). These staff will also require just-in-time training • Regionally, palliative care teams that can support a facility in crisis or support additional outpatient care may be advantageous	*Conserve* *Adapt* *Substitute*			

Special	**Special:**
	When triage to 'palliative care only' in disasters is not by patient choice, management of expectations and transitions is critical to the physical and mental well-being of patient, family, and providers.
	• Consider availability of resources for:
	  • Social work/family resources
	  • Spiritual support
	  • Psychological support for patients and their families
	  • Discharge and/or death support and planning
	  • Family/caregiver accommodations
	  • Psychological support for staff
		Prepare			

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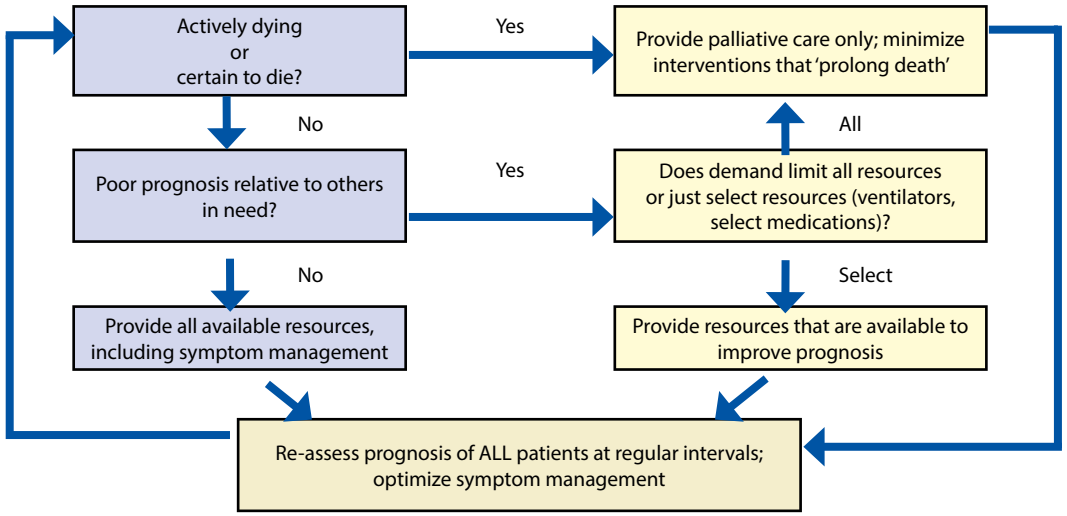
PALLIATIVE CARE
REGIONAL RESOURCE CARD

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Triage	**Triage:** • The need for palliative care should be anticipated in all disaster scenarios • Triage decisions may be required in minutes (multiple burn victims), over hours (many trauma victims), or over days or weeks (pandemic) • When it is clear that the volume of patients and current level of resources will require prioritizing some patients to palliative care only, triage criteria should be developed whenever possible and a formal triage team put in place (proactive measures may not be possible in the early phase of an incident, but should be implemented as soon as possible) • Location for palliative care should be optimized given the constraints of the incident – patients may be triaged to home, to other facilities, to inpatient units, or to other locations • Triage is dynamic. As resources allow, it is critical to re-triage patients so that they may receive resources that have become available. Predicted prognosis does not equate with actual outcome in many cases. (See triage tree below) **Triage Tree - Resource-dependent palliative care considerations**  	*Conserve* *Re-allocate* *Adapt*			

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Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Treatment	**Treatment:** **Provide Symptomatic Management:** • Do not under-estimate the psychological impact on patients, caregivers and family of these situations. All of these persons may require medical and non-medical treatment for anxiety, grief, complicated grief, post-traumatic stress disorder and mental health issues due to the stress of these events • Treatment with appropriate doses of medication is important – see the opiate dosing references below as an example, but after initial doses, titrate to appropriate symptom relief as required, rather than to any specific recommended dose of medication • Adapt with the medications and resources that are available • Web resource for treatment: Medical College of Wisconsin End of Life / Palliative Educational Resource Center (EPERC) - http://www.eperc.mcw.edu/EPERC/FastFactsandConcepts **General Pain Management:** • 'WHO ladder' for pain relief ◊ For mild pain (unless contraindicated) use aspirin, acetaminophen or nonsteroidal anti-inflammatory agents ◊ If pain persists (mild to moderate) add oxycodone, hydrocodone, or similar oral opioids ◊ If pain is not controlled, increase the opioid dose (may consider oral hydromorphone or morphine) ◊ Add adjuvant medications to medication regimen as possible/needed to reduce opioid requirements • The patient's report of pain is the standard assessment tool to gauge if the pain management regime is adequate • Pediatric and unresponsive/non-verbal patients require alternate methods of assessment of non-verbal cues of distress • Numerical distress or visual/analog scales can provide standardized assessment • Adjuvant medical (anti-depressants, etc.) and non-medical treatments (acupuncture, etc.) may be valuable – expert consultation should be obtained in disasters where a longer timeframe allows these treatments to be implemented • Provision of non-medical comforts (company, quiet environment or music, pillows, etc.) is a critical component of palliative care and should be optimized according to patient needs **Opioid Management Principles for Disaster Situations:** • Oral morphine is the standard opioid from which potencies and conversion ratios are based for most other opioid medications • Opioids can be given by almost every possible route – oral, sublingual, intravenous, intranasal, intramuscular, rectal, or subcutaneous • Pain equivalence tables can vary. Incomplete cross tolerance exists when converting between different opioids – consider dose reductions of 25 – 50% for initial doses when switching drugs (depending on clinical circumstances)	*Prepare* *Adapt*			

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
	• Opioids typically do not have ceiling effects for analgesia. Limitations are usually related to side effects or intolerances • Patients with sustained-release opioid needs usually require short-acting opioid for breakthrough pain as well as for dose-finding for long-acting opioid dose adjustments. Short-acting breakthrough dose should typically be 10 -15 % of total 24 hour daily requirement of the sustained-release opioid • When dosing with opioids, remember common side effects and treat accordingly (e.g., constipation, nausea, pruritis, confusion, sedation). Respiratory depression is a rare event related to opioid dosing and usually occurs in the context of multiple drug class utilization, and other underlying chronic clinical conditions • Fentanyl transdermal patches require good adipose stores to be effective, as the real physiologic reservoir is underlying adipose tissue. If patients are thin, think of other opioid options • Best opioids to consider in the face of renal insufficiency include methadone, fentanyl, and dilaudid • Breakthrough dose: ⅓ to ½ of the twelve hour dose or 10-15 % of the 24 hour dose (if >3 breakthrough doses per 24 hr period consistently required, consider retitration of dose) • Titrating dosage, may use the following guideline: (Pain scores from 1-10 with 10 being worst imaginable) Pain > 7 Increase dose by 50% to 100% Pain 4 – 7 Increase dose by 25% to 50% Pain < 4 Increase dose by 25% if indicated/desired • Once a patient has 2 or fewer breakthrough doses and a steady state of medication has been reached, then a continuous release equianalgesic opioid may be initiated. Always start with an instant release before switching to continuous release. Note that continuous release opioids do not have mg/mg equivalence - e.g. a patient requiring 60mg of morphine elixir each day would not be started on 60mg of MS Contin as an equivalent dose • Switch from fixed combination acetaminophen/opioids to a single entity opioid when acetaminophen dose > 3000 - 4000 mg / day or as weight appropriate • Avoid fixed dose combination analgesics in pediatric patients when possible to allow more effective titration and avoid excess acetaminophen dosing • Consider use of methadone where available particularly for outpatient management of pain	*Prepare* *Adapt*			
Tracking	**Tracking:** • Assure that patients referred to home care (formally or informally) are tracked by public health and the appropriate agencies	*Prepare*			

Key Symptoms and Treatments:

Symptom	Pharmacologic Options	Additional Strategies
Pain	See 'WHO ladder' on page 7	Integrative therapies, acupuncture, hypnosis, interventional techniques, music therapy, heat/cold therapy, supportive caring
Dyspnea	Opioids and oxygen are standard therapy, additional agents of benefit may include benzodiazepines, bronchodilators, and nebulized furosemide (20 mg IV solution with 3 mL normal saline every 4 hours as needed)	Treat underlying cause, oxygen, direct air from fan onto face; integrative therapies, hypnosis.
Nausea	Serotonin antagonists (ondansetron), substance P antagonists (apprepitant), dopamine antagonists (procholorperazine), butyrophenones (haloperidol), corticosteroids, benzodiazepines, atypical antipsychotics (olanzapine), cannabinoids, anti-histamines (meclizine) , anticholinergics (scopolamine), substituted benzamide (metoclopramide)	Treat underlying cause; consider interventional options depending on underlying cause (e.g., small bowel obstruction consider nasogastric tube), integrative therapies, hypnosis, acupuncture, music therapy, supportive caring. Consider constipation as possible etiology if on chronic opioids.
Anxiety	Benzodiazepines, atypical antipsychotics, cannabinoids, anti-depressants	Treat underlying cause, spiritual support, supportive caring, integrative therapies, hypnosis, relaxation techniques, music therapy
Agitation / Delirium	Haloperidol, atypical antipsychotics, sedatives	Provide quiet, dark environment, hydration, support sleep hygiene, minimize stimulation, consider calming soft music Identify specific underlying cause if possible: • Benzodiazepine paradoxical agitation - consider discontinuing • Opioid neurotoxicity - consider opioid rotation • Steroid psychosis - consider dose change or elimination • Opioid withdrawal - consider tapering doses
Constipation	Docusate sodium, sennosides, polyethylene glycol, lactulose, magnesium citrate, bisacodyl, glycerine, enemas	Treat underlying conditions, hydration, consider subcutaneous methylnaltrexone for chronic opioid-induced constipation – ensure no mechanical obstruction re: risk of perforation (risk higher in patients on steroids)
Diarrhea	Loperamide 2 mg tablets if not contraindicated. Other interventions according to cause.	Determine underlying cause and potential therapies
Secretion control	Sublingual atropine; 1% eye drops 2-3 drops every 3-4 hours as needed; glycopyrolate (IV 0.4 mg every 4-6 hours, oral 2 mg every 8 hours or appropriate weight-based dose); scopolamine patch	Education for family regarding: death rattle, reposition in bed, very gentle suction +/-, mouth care
Skin breakdown / protection		Treat underlying cause, gentle repositioning, supportive pads, air mattress, specialty beds
Active dying	Aggressive supportive care depending needs. Do not 'prolong dying process' with on-going therapies such as transfusions, IV fluids, artificial nutrition, antibiotics. Stop medications that have no bearing on symptom support management. Focus on the 'patient as person' – not on clinical indicators. Oxygen does not offer symptom benefit for actively dying patients and oxygen delivery devices can be uncomfortable and cause sensations of claustrophobia.	Supportive care of family, education about dying process, spiritual support, psychosocial support, company, listening, storytelling, silence, companionship. Discontinue monitors and vital signs documentation.

DOSE CONVERSION TABLE FOR SELECTED OPIOIDS

(Consider dose reduction between opioid in view of incomplete cross tolerance)

Hydromorphone IV (mg / day)	Hydromorphone PO (mg/day)	Morphine IV (mg/day)	Morphine PO (mg/day)	Fentanyl* Transdermal (mcg/hr)	Oxycodone PO (mg/day)
2.5	12.5	17	50	25	30
5	25	33	100	50	65
7.5	37.5	50	150	75	100
10	50	67	200	100	130
12.5	62.5	83	250	125	165
15	75	100	300	150	200
17.5	87.5	117	350	175	230
20	100	133	400	200	265
22.5	112.5	150	450	225	300
25	125	167	500	250	330
27.5	137.5	183	550	275	360
30	150	200	600	300	400

* Transdermal Fentanyl absorption and response may vary depending on amount of adipose tissue present (i.e. better absorbed in patients with more adipose tissue, worse absorption in thin patients). Also, consider dose reduction (e.g. 25%) if transitioning from transdermal patch to oral opioid equivalent

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JAMA | Original Investigation | CARING FOR THE CRITICALLY ILL PATIENT

Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus–Infected Pneumonia in Wuhan, China

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IMPORTANCE In December 2019, novel coronavirus (2019-nCoV)–infected pneumonia (NCIP) occurred in Wuhan, China. The number of cases has increased rapidly but information on the clinical characteristics of affected patients is limited.

OBJECTIVE To describe the epidemiological and clinical characteristics of NCIP.

DESIGN, SETTING, AND PARTICIPANTS Retrospective, single-center case series of the 138 consecutive hospitalized patients with confirmed NCIP at Zhongnan Hospital of Wuhan University in Wuhan, China, from January 1 to January 28, 2020; final date of follow-up was February 3, 2020.

EXPOSURES Documented NCIP.

MAIN OUTCOMES AND MEASURES Epidemiological, demographic, clinical, laboratory, radiological, and treatment data were collected and analyzed. Outcomes of critically ill patients and noncritically ill patients were compared. Presumed hospital-related transmission was suspected if a cluster of health professionals or hospitalized patients in the same wards became infected and a possible source of infection could be tracked.

RESULTS Of 138 hospitalized patients with NCIP, the median age was 56 years (interquartile range, 42-68; range, 22-92 years) and 75 (54.3%) were men. Hospital-associated transmission was suspected as the presumed mechanism of infection for affected health professionals (40 [29%]) and hospitalized patients (17 [12.3%]). Common symptoms included fever (136 [98.6%]), fatigue (96 [69.6%]), and dry cough (82 [59.4%]). Lymphopenia (lymphocyte count, 0.8 × 10^9/L [interquartile range {IQR}, 0.6-1.1]) occurred in 97 patients (70.3%), prolonged prothrombin time (13.0 seconds [IQR, 12.3-13.7]) in 80 patients (58%), and elevated lactate dehydrogenase (261 U/L [IQR, 182-403]) in 55 patients (39.9%). Chest computed tomographic scans showed bilateral patchy shadows or ground glass opacity in the lungs of all patients. Most patients received antiviral therapy (oseltamivir, 124 [89.9%]), and many received antibacterial therapy (moxifloxacin, 89 [64.4%]; ceftriaxone, 34 [24.6%]; azithromycin, 25 [18.1%]) and glucocorticoid therapy (62 [44.9%]). Thirty-six patients (26.1%) were transferred to the intensive care unit (ICU) because of complications, including acute respiratory distress syndrome (22 [61.1%]), arrhythmia (16 [44.4%]), and shock (11 [30.6%]). The median time from first symptom to dyspnea was 5.0 days, to hospital admission was 7.0 days, and to ARDS was 8.0 days. Patients treated in the ICU (n = 36), compared with patients not treated in the ICU (n = 102), were older (median age, 66 years vs 51 years), were more likely to have underlying comorbidities (26 [72.2%] vs 38 [37.3%]), and were more likely to have dyspnea (23 [63.9%] vs 20 [19.6%]), and anorexia (24 [66.7%] vs 31 [30.4%]). Of the 36 cases in the ICU, 4 (11.1%) received high-flow oxygen therapy, 15 (41.7%) received noninvasive ventilation, and 17 (47.2%) received invasive ventilation (4 were switched to extracorporeal membrane oxygenation). As of February 3, 47 patients (34.1%) were discharged and 6 died (overall mortality, 4.3%), but the remaining patients are still hospitalized. Among those discharged alive (n = 47), the median hospital stay was 10 days (IQR, 7.0-14.0).

CONCLUSIONS AND RELEVANCE In this single-center case series of 138 hospitalized patients with confirmed NCIP in Wuhan, China, presumed hospital-related transmission of 2019-nCoV was suspected in 41% of patients, 26% of patients received ICU care, and mortality was 4.3%.

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In December 2019, a cluster of acute respiratory illness, now known as novel coronavirus–infected pneumonia (NCIP), occurred in Wuhan, Hubei Province, China.[1-5] The disease has rapidly spread from Wuhan to other areas. As of January 31, 2020, a total of 9692 NCIP cases in China have been confirmed. Internationally, cases have been reported in 24 countries and 5 continents.[6] On January 3, 2020, the 2019 novel coronavirus (2019-nCoV) was identified in samples of bronchoalveolar lavage fluid from a patient in Wuhan and was confirmed as the cause of the NCIP.[7] Full-genome sequencing and phylogenic analysis indicated that 2019-nCoV is a distinct clade from the betacoronaviruses associated with human severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS).[7] The 2019-nCoV has features typical of the coronavirus family and was classified in the betacoronavirus 2b lineage. The 2019-nCoV has close similarity to bat coronaviruses, and it has been postulated that bats are the primary source. While the origin of the 2019-nCoV is still being investigated, current evidence suggests spread to humans occurred via transmission from wild animals illegally sold in the Huanan Seafood Wholesale Market.[8]

Huang et al[9] first reported 41 cases of NCIP in which most patients had a history of exposure to Huanan Seafood Wholesale Market. Patients' clinical manifestations included fever, nonproductive cough, dyspnea, myalgia, fatigue, normal or decreased leukocyte counts, and radiographic evidence of pneumonia. Organ dysfunction (eg, shock, acute respiratory distress syndrome [ARDS], acute cardiac injury, and acute kidney injury) and death can occur in severe cases.[9] Subsequently, Chen et al[8] reported findings from 99 cases of NCIP from the same hospital and the results suggested that the 2019-nCoV infection clustered within groups of humans in close contact, was more likely to affect older men with comorbidities, and could result in ARDS. However, the difference in clinical characteristics between severe and nonsevere cases was not reported. Case reports confirmed human-to-human transmission of NCIP.[10,11] At present, there are no effective therapies or vaccines for NCIP. The objective of this case series was to describe the clinical characteristics of 138 hospitalized patients with NCIP and to compare severe cases who received intensive care unit (ICU) care with nonsevere cases who did not receive ICU care.

Key Points

Question What are the clinical characteristics of hospitalized patients with 2019 novel coronavirus (2019-nCoV)–infected pneumonia (NCIP) in Wuhan, China?

Findings In this single-center case series involving 138 patients with NCIP, 26% of patients required admission to the intensive care unit and 4.3% died. Presumed human-to-human hospital-associated transmission of 2019-nCoV was suspected in 41% of patients.

Meaning In this case series in Wuhan, China, NCIP was frequently associated with presumed hospital-related transmission, 26% of patients required intensive care unit treatment, and mortality was 4.3%.

Methods

Study Design and Participants

This case series was approved by the institutional ethics board of Zhongnan Hospital of Wuhan University (No. 2020020). All consecutive patients with confirmed NCIP admitted to Zhongnan Hospital of Wuhan University from January 1 to January 28, 2020, were enrolled. Oral consent was obtained from patients. Zhongnan Hospital, located in Wuhan, Hubei Province, the endemic areas of NCIP, is one of the major tertiary teaching hospitals and is responsible for the treatments for NCIP assigned by the government. All patients with NCIP enrolled in this study were diagnosed according to World Health Organization interim guidance.[12] The clinical outcomes (ie, discharges, mortality, length of stay) were monitored up to February 3, 2020, the final date of follow-up.

Data Collection

The medical records of patients were analyzed by the research team of the Department of Critical Care Medicine, Zhongnan Hospital of Wuhan University. Epidemiological, clinical, laboratory, and radiological characteristics and treatment and outcomes data were obtained with data collection forms from electronic medical records. The data were reviewed by a trained team of physicians. Information recorded included demographic data, medical history, exposure history, underlying comorbidities, symptoms, signs, laboratory findings, chest computed tomographic (CT) scans, and treatment measures (ie, antiviral therapy, corticosteroid therapy, respiratory support, kidney replacement therapy). The date of disease onset was defined as the day when the symptom was noticed. Symptoms, signs, laboratory values, chest CT scan, and treatment measures during the hospital stay were collected. ARDS was defined according to the Berlin definition.[13] Acute kidney injury was identified according to the Kidney Disease: Improving Global Outcomes definition.[14] Cardiac injury was defined if the serum levels of cardiac biomarkers (eg, troponin I) were above the 99th percentile upper reference limit or new abnormalities were shown in electrocardiography and echocardiography.[9] For patients admitted to the ICU, the Glasgow Coma Scale, Sequential Organ Failure Assessment, and Acute Physiology and Chronic Health Evaluation II scores were determined on the day of ICU admission. The durations from onset of disease to hospital admission, dyspnea, ARDS, and ICU admission were recorded.

Presumed hospital-related transmission was suspected if a cluster of medical professionals or hospitalized patients in the same wards became infected in a certain time period and a possible source of infection could be tracked.

Real-Time Reverse Transcription Polymerase Chain Reaction Assay for nCoV

Throat swab samples were collected for extracting 2019-nCoV RNA from patients suspected of having 2019-nCoV infection. After collection, the throat swabs were placed into a collection tube with 150 μL of virus preservation solution, and total RNA was

Table 1. Baseline Characteristics of Patients Infected With 2019-nCoV

	No. (%)			
	Total (N = 138)	ICU (n = 36)	Non-ICU (n = 102)	*P* Value[a]
Age, median (IQR), y	56 (42-68)	66 (57-78)	51 (37-62)	<.001
Sex				
Female	63 (45.7)	14 (38.9)	51 (37-62)	.34
Male	75 (54.3)	22 (61.1)	53 (52.0)	
Huanan Seafood Wholesale Market exposure	12 (8.7)	5 (13.9)	7 (6.9)	.30
Infected				
Hospitalized patients	17 (12.3)	9 (25.0)	8 (7.8)	.02
Medical staff	40 (29)	1 (2.8)	39 (38.2)	<.001
Comorbidities	64 (46.4)	26 (72.2)	38 (37.3)	<.001
Hypertension	43 (31.2)	21 (58.3)	22 (21.6)	<.001
Cardiovascular disease	20 (14.5)	9 (25.0)	11 (10.8)	.04
Diabetes	14 (10.1)	8 (22.2)	6 (5.9)	.009
Malignancy	10 (7.2)	4 (11.1)	6 (5.9)	.29
Cerebrovascular disease	7 (5.1)	6 (16.7)	1 (1.0)	.001
COPD	4 (2.9)	3 (8.3)	1 (1.0)	.054
Chronic kidney disease	4 (2.9)	2 (5.6)	2 (2.0)	.28
Chronic liver disease	4 (2.9)	0	4 (3.9)	.57
HIV infection	2 (1.4)	0	2 (2.0)	>.99
Signs and symptoms				
Fever	136 (98.6)	36 (100)	100 (98.0)	>.99
Fatigue	96 (69.6)	29 (80.6)	67 (65.7)	.10
Dry cough	82 (59.4)	21 (58.3)	61 (59.8)	.88
Anorexia	55 (39.9)	24 (66.7)	31 (30.4)	<.001
Myalgia	48 (34.8)	12 (33.3)	36 (35.3)	.83
Dyspnea	43 (31.2)	23 (63.9)	20 (19.6)	<.001
Expectoration	37 (26.8)	8 (22.2)	29 (28.4)	.35
Pharyngalgia	24 (17.4)	12 (33.3)	12 (11.8)	.003
Diarrhea	14 (10.1)	6 (16.7)	8 (7.8)	.20
Nausea	14 (10.1)	4 (11.1)	10 (9.8)	>.99
Dizziness	13 (9.4)	8 (22.2)	5 (4.9)	.007
Headache	9 (6.5)	3 (8.3)	6 (5.9)	.70
Vomiting	5 (3.6)	3 (8.3)	2 (2.0)	.13
Abdominal pain	3 (2.2)	3 (8.3)	0 (0)	.02
Onset of symptom to, median (IQR), d				
Hospital admission	7.0 (4.0-8.0)	8.0 (4.5-10.0)	6.0 (3.0-7.0)	.009
Dyspnea	5.0 (1.0-10.0)	6.5 (3.0-10.8)	2.5 (0.0-7.3)	.02
ARDS	8.0 (6.0-12.0)	8.0 (6.0-12.0)	8.0 (6.3-11.3)	.97
Heart rate, median (IQR), bpm	88 (78-97)	89 (81-101)	86 (77-96)	.14
Respiratory rate, median (IQR)	20 (19-21)	20 (16-25)	20 (19-21)	.57
Mean arterial pressure, median (IQR), mm Hg	90 (84-97)	91 (78-96)	90 (85-98)	.33

Abbreviations: ARDS, acute respiratory distress syndrome; bpm, beats per minute; COPD, chronic obstructive pulmonary disease; ICU, intensive care unit; IQR, interquartile range; 2019-nCoV, 2019 novel coronavirus.

[a] *P* values indicate differences between ICU and non-ICU patients. *P* < .05 was considered statistically significant.

extracted within 2 hours using the respiratory sample RNA isolation kit (Zhongzhi, Wuhan, China). In brief, 40 µL of cell lysates were transferred into a collection tube followed by vortex for 10 seconds. After standing at room temperature for 10 minutes, the collection tube was centrifugated at 1000 rpm/min for 5 minutes. The suspension was used for real-time reverse transcription polymerase chain reaction (RT-PCR) assay of 2019-nCoV RNA. Two target genes, including open reading frame 1ab (*ORF1ab*) and nucleocapsid protein (N), were simultaneously amplified and tested during the real-time RT-PCR assay. Target 1 (*ORF1ab*): forward primer CCCTGTGGGTTTTACACTTAA; reverse primer ACGATTGTGCATCAGCTGA; and the probe 5′-VIC-CCGTCTGCGGTATGTGGAAAGGTTATGG-BHQ1-3′. Target 2 (N): forward primer GGGGAACTTCTCCTGCTAGAAT; reverse primer CAGACATTTTGCTCTCAAGCTG; and the probe 5′-FAM- TTGCTGCTGCTTGACAGATT-TAMRA-3′. The real-time RT-PCR assay was performed using a 2019-nCoV nucleic acid detection kit according to the manufacturer's protocol (Shanghai bio-germ Medical Technology Co Ltd). Reaction mixture contains 12 µL of reaction buffer, 4 µL of enzyme solution, 4 µL of Probe primers solution, 3 µL of diethyl pyrocarbonate-treated water, and 2 µL of RNA template. RT-PCR assay was

Table 2. Laboratory Findings of Patients Infected With 2019-nCoV on Admission to Hospital

		Median (IQR)			
	Normal Range	Total (N = 138)	ICU (n = 36)	Non-ICU (n = 102)	*P* Value[a]
White blood cell count, $\times 10^9$/L	3.5-9.5	4.5 (3.3-6.2)	6.6 (3.6-9.8)	4.3 (3.3-5.4)	.003
Neutrophil count, $\times 10^9$/L	1.8-6.3	3.0 (2.0-4.9)	4.6 (2.6-7.9)	2.7 (1.9-3.9)	<.001
Lymphocyte count, $\times 10^9$/L	1.1-3.2	0.8 (0.6-1.1)	0.8 (0.5-0.9)	0.9 (0.6-1.2)	.03
Monocyte count, $\times 10^9$/L	0.1-0.6	0.4 (0.3-0.5)	0.4 (0.3-0.5)	0.4 (0.3-0.5)	.96
Platelet count, $\times 10^9$/L	125-350	163 (123-191)	142 (119-202)	165 (125-188)	.78
Prothrombin time, s	9.4-12.5	13.0 (12.3-13.7)	13.2 (12.3-14.5)	12.9 (12.3-13.4)	.37
Activated partial thromboplastin time, s	25.1-36.5	31.4 (29.4-33.5)	30.4 (28.0-33.5)	31.7 (29.6-33.5)	.09
D-dimer, mg/L	0-500	203 (121-403)	414 (191-1324)	166 (101-285)	<.001
Creatine kinase, U/L	<171	92 (56-130)	102 (62-252)	87 (54-121)	.08
Creatine kinase-MB, U/L	<25	14 (10-18)	18 (12-35)	13 (10-14)	<.001
Lactate dehydrogenase, U/L	125-243	261 (182-403)	435 (302-596)	212 (171-291)	<.001
Alanine aminotransferase, U/L	9-50	24 (16-40)	35 (19-57)	23 (15-36)	.007
Aspartate aminotransferase, U/L	15-40	31 (24-51)	52 (30-70)	29 (21-38)	<.001
Total bilirubin, mmol/L	5-21	9.8 (8.4-14.1)	11.5 (9.6-18.6)	9.3 (8.2-12.8)	.02
Blood urea nitrogen, mmol/L	2.8-7.6	4.4 (3.4-5.8)	5.9 (4.3-9.6)	4.0 (3.1-5.1)	<.001
Creatinine, μmol/L	64-104	72 (60-87)	80 (66-106)	71 (58-84)	.04
Hypersensitive troponin I, pg/mL	<26.2	6.4 (2.8-18.5)	11.0 (5.6-26.4)	5.1 (2.1-9.8)	.004
Procalcitonin, ng/mL					
≥0.05, No. (%)	<0.05	49 (35.5)	27 (75.0)	22 (21.6)	<.001
Bilateral distribution of patchy shadows or ground glass opacity, No. (%)	NA	138 (100)	36 (100)	102 (100)	>.99

Abbreviations: ICU, intensive care unit; IQR, interquartile range; MB, muscle and brain type; NA, not available; 2019-nCoV, 2019 novel coronavirus.

SI conversion factors: To convert alanine aminotransferase to μkat/L, multiply by 0.0167; aspartate aminotransferase to μkat/L, multiply by 0.0167; creatine kinase to μkat/L, multiply by 0.0167; and lactate dehydrogenase to μkat/L, multiply by 0.0167.

[a] *P* values indicate differences between ICU and non-ICU patients. *P* < .05 was considered statistically significant.

performed under the following conditions: incubation at 50 °C for 15 minutes and 95 °C for 5 minutes, 40 cycles of denaturation at 94 °C for 15 seconds, and extending and collecting fluorescence signal at 55 °C for 45 seconds. A cycle threshold value (Ct-value) less than 37 was defined as a positive test result, and a Ct-value of 40 or more was defined as a negative test. These diagnostic criteria were based on the recommendation by the National Institute for Viral Disease Control and Prevention (China) (http://ivdc.chinacdc.cn/kyjz/202001/t20200121_211337.html). A medium load, defined as a Ct-value of 37 to less than 40, required confirmation by retesting.

Statistical Analysis

Categorical variables were described as frequency rates and percentages, and continuous variables were described using mean, median, and interquartile range (IQR) values. Means for continuous variables were compared using independent group *t* tests when the data were normally distributed; otherwise, the Mann-Whitney test was used. Data (nonnormal distribution) from repeated measures were compared using the generalized linear mixed model. Proportions for categorical variables were compared using the χ^2 test, although the Fisher exact test was used when the data were limited. All statistical analyses were performed using SPSS (Statistical Package for the Social Sciences) version 13.0 software (SPSS Inc). For unadjusted comparisons, a 2-sided α of less than .05 was considered statistically significant. The analyses have not been adjusted for multiple comparisons and, given the potential for type I error, the findings should be interpreted as exploratory and descriptive.

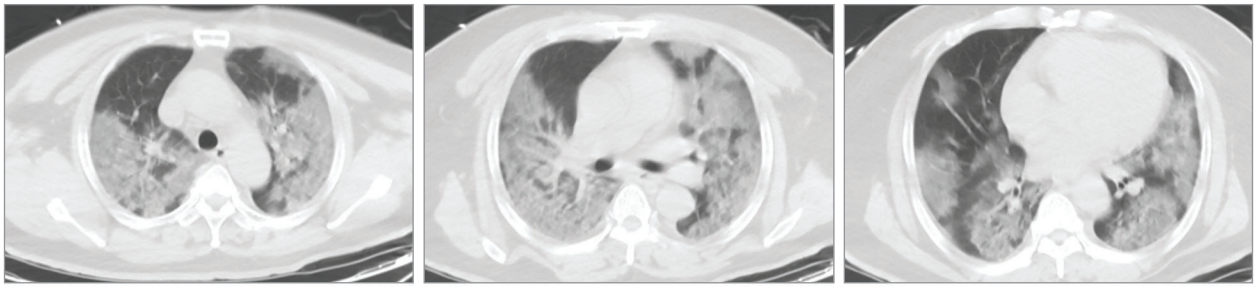
Results

Presenting Characteristics

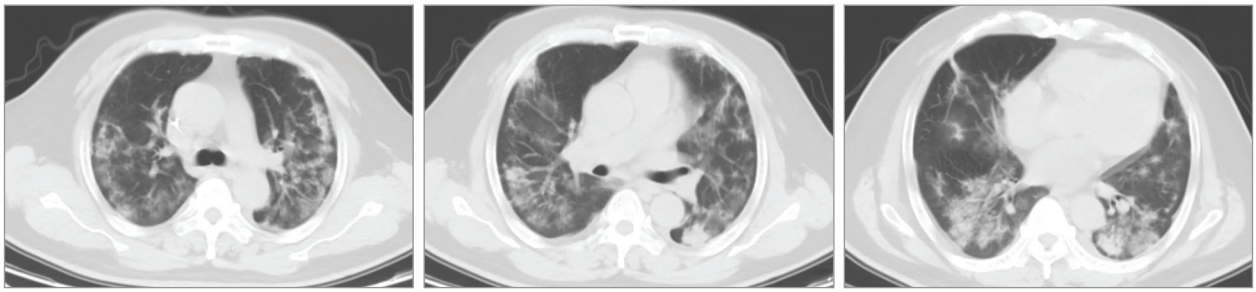
The study population included 138 hospitalized patients with confirmed NCIP. The median age was 56 years (IQR, 42-68; range, 22-92 years), and 75 (54.3%) were men. Of these patients, 102 (73.9%) were admitted to isolation wards, and 36 (26.1%) were admitted and transferred to the ICU because of the development of organ dysfunction (**Table 1**). The median durations from first symptoms to dyspnea, hospital admission, and ARDS were 5 days (IQR, 1-10), 7 days (IQR, 4-8), and 8 days (IQR, 6-12), respectively (Table 1). Of the 138 patients, 64 (46.4%) had 1 or more coexisting medical conditions. Hypertension (43 [31.2%]), diabetes (14 [10.1%]), cardiovascular disease (20 [14.5%]), and malignancy (10 [7.2%]) were the most common coexisting conditions.

Figure 1. Chest Computed Tomographic Images of a 52-Year-Old Patient Infected With 2019 Novel Coronavirus (2019-nCoV)

A Computed tomography images on day 5 after symptom onset



B Computed tomography images after treatment on day 19 after symptom onset



A, Chest computed tomographic images obtained on January 7, 2020, show ground glass opacity in both lungs on day 5 after symptom onset. B, Images taken on January 21, 2020, show the absorption of bilateral ground glass opacity after the treatment of extracorporeal membrane oxygenation from January 7 to 12 in the intensive care unit.

The most common symptoms at onset of illness were fever (136 [98.6%]), fatigue (96 [69.6%]), dry cough (82 [59.4%]), myalgia (48 [34.8%]), and dyspnea (43 [31.2%]). Less common symptoms were headache, dizziness, abdominal pain, diarrhea, nausea, and vomiting (Table 1). A total of 14 patients (10.1%) initially presented with diarrhea and nausea 1 to 2 days prior to development of fever and dyspnea.

Compared with patients who did not receive ICU care (n = 102), patients who required ICU care (n = 36) were significantly older (median age, 66 years [IQR, 57-78] vs 51 years [IQR, 37-62]; $P < .001$) and were more likely to have underlying comorbidities, including hypertension (21 [58.3%] vs 22 [21.6%], diabetes (8 [22.2%] vs 6 [5.9%]), cardiovascular disease (9 [25.0%] vs 11 [10.8%]), and cerebrovascular disease (6 [16.7%] vs 1 [1.0%]). Compared with the non-ICU patients, patients admitted to the ICU were more likely to report pharyngeal pain, dyspnea, dizziness, abdominal pain, and anorexia.

Vital Signs and Laboratory Parameters in ICU and Non-ICU Patients

Heart rate, respiratory rate, and mean arterial pressure did not differ between patients who received ICU care and patients who did not receive ICU care. These measures were recorded on day of hospital admission for all patients, then divided into those who were later admitted to the ICU or not. There were numerous differences in laboratory findings between patients admitted to the ICU and those not admitted to the ICU (**Table 2**), including higher white blood cell and neutrophil counts, as well as higher levels of D-dimer, creatine kinase, and creatine. All of the 138 enrolled patients showed bilateral involvement of chest CT scan (**Figure 1**). The median time from onset of symptoms to ICU admission was 10 days (IQR, 6-12) (**Table 3**). On the day of ICU admission, the median Glasgow Coma Scale; Acute Physiology and Chronic Health Evaluation II; and Sequential Organ Failure Assessment scores were 15 (IQR, 9-15), 17 (IQR, 10-22), and 5 (IQR, 3-6), respectively (Table 3). The median partial pressure

Table 3. Severity of Illness Scores and Blood Gas Analysis of Patients Infected With 2019-nCoV in the ICU

	Normal Range	Median (IQR)
No. of patients		36
Onset of symptom to ICU admission, d	NA	10 (6-12)
Time from hospital admission to ICU admission, d	NA	1 (0-3)
Glasgow Coma Scale score	NA	15 (9-15)
APACHE II	NA	17 (10-22)
SOFA	NA	5 (3-6)
PH	7.35-7.45	7.43 (7.39-7.47)
Lactate, mmol/L	0.5-1.6	1.3 (0.7-2.0)
Pao_2, mm Hg	83-108	68 (56-89)
Pao_2:Fio_2, mm Hg	400-500	136 (103-234)
$Paco_2$, mm Hg	35-48	34 (30-38)

Abbreviations: APACHE II, Acute Physiology and Chronic Health Evaluation II; Fio_2, fraction of inspired oxygen; ICU, intensive care unit; IQR, interquartile range; NA, not available; 2019-nCoV, 2019 novel coronavirus; $Paco_2$, partial pressure of carbon dioxide; Pao_2, partial pressure of oxygen; SOFA, Sequential Organ Failure Assessment.

Table 4. Complications and Treatments of Patients Infected With 2019-nCoV

	No. (%)			
	Total (N = 138)	ICU (n = 36)	Non-ICU (n = 102)	*P* Value[a]
Complications				
Shock	12 (8.7)	11 (30.6)	1 (1.0)	<.001
Acute cardiac injury	10 (7.2)	8 (22.2)	2 (2.0)	<.001
Arrhythmia	23 (16.7)	16 (44.4)	7 (6.9)	<.001
ARDS	27 (19.6)	22 (61.1)	5 (4.9)	<.001
AKI	5 (3.6)	3 (8.3)	2 (2.0)	.11
Treatment				
Antiviral therapy	124 (89.9)	34 (94.4)	90 (88.2)	.36
Glucocorticoid therapy	62 (44.9)	26 (72.2)	36 (35.3)	<.001
CKRT	2 (1.45)	2 (5.56)	0	>.99
Oxygen inhalation	106 (76.81)	4 (11.11)	102 (100)	<.001
NIV	15 (10.9)	15 (41.7)	0	<.001
IMV	17 (12.32)	17 (47.22)	0	<.001
ECMO	4 (2.9)	4 (11.1)	0	.004

Abbreviations: AKI, acute kidney injury; ARDS, acute respiratory distress syndrome; CKRT, continuous kidney replacement therapy; ECMO, extracorporeal membrane oxygenation; ICU, intensive care unit; IMV, invasive mechanical ventilation; NIV, noninvasive ventilation; 2019-nCoV, 2019 novel coronavirus.

[a] *P* values indicate differences between ICU and non-ICU patients. *P* < .05 was considered statistically significant.

of oxygen level was 68 mm Hg (IQR, 56-89) and the median of partial pressure of oxygen to fraction of inspired oxygen ratio was 136 mm Hg (IQR, 103-234).

Organ Dysfunctions and Main Interventions

The organ dysfunction and treatment of the 138 patients are shown in **Table 4**. As of February 3, 2020, 85 patients (61.6%) were still hospitalized. A total of 47 patients (34.1%) had been discharged, and 6 patients (4.3%) had died. Of the 36 patients admitted to the ICU, 11 were still in the ICU, 9 had been discharged to home, 10 had been transferred to the general wards, and 6 had died. Of the 11 patients who remained in the ICU, 6 received invasive ventilation (1 switched to extracorporeal membrane oxygenation) and 5 to noninvasive ventilations). Common complications among the 138 patients included shock (12 [8.7%]), ARDS (27 [19.6%]), arrhythmia (23 [16.7%]), and acute cardiac injury (10 [7.2%]). Patients who received care in the ICU were more likely to have one of these complications than non-ICU patients.

Most patients received antiviral therapy (oseltamivir, 124 [89.9%]), and many received antibacterial therapy (moxifloxacin, 89 [64.4%]; ceftriaxone, 34 [24.6%]; azithromycin, 25 [18.1%]) and glucocorticoid therapy (62 [44.9%]). In the ICU, 4 patients (11.1%) received high-flow oxygen and 15 (44.4%) received noninvasive ventilation. Invasive mechanical ventilation was required in 17 patients (47.2%), 4 of whom received extracorporeal membrane oxygenation as rescue therapy. A total of 13 patients received vasopressors, and 2 patients received kidney replacement therapy.

Dynamic Profile of Laboratory Findings in Patients With NCIP

To determine the major clinical features that appeared during NCIP progression, the dynamic changes in 6 clinical laboratory parameters, including hematological and biochemical parameters, were tracked from day 1 to day 19 after the onset of the disease at 2-day intervals. At the end of January 28, 2020, data from 33 patients with complete clinical course were analyzed (**Figure 2**). During hospitalization, most patients had marked lymphopenia, and nonsurvivors developed more severe lymphopenia over time. White blood cell counts and neutrophil counts were higher in nonsurvivors than those in survivors. The level of D-dimer was higher in nonsurvivors than in survivors. Similarly, as the disease progressed and clinical status deteriorated, the levels of blood urea and creatinine progressively increased before death.

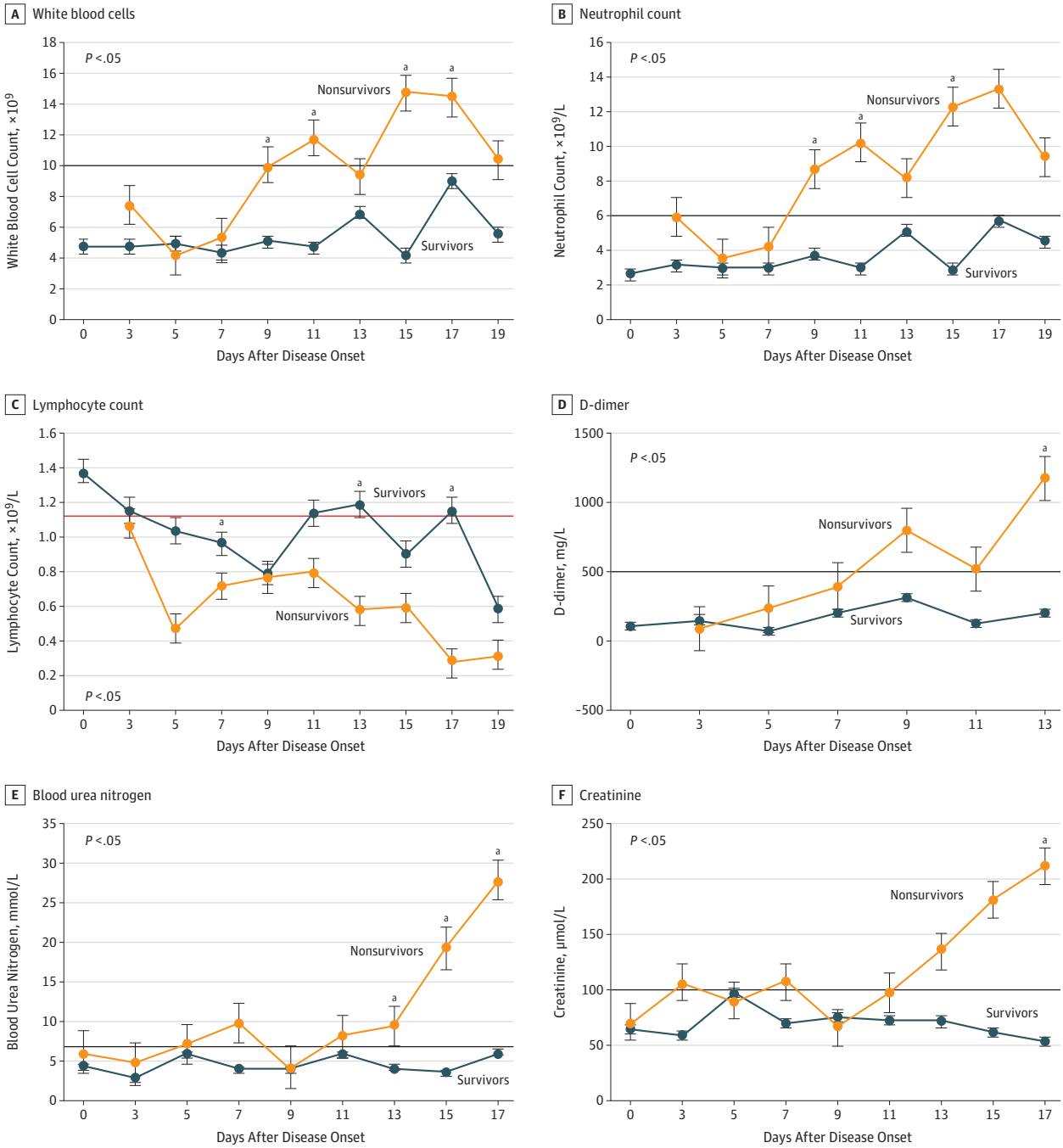
Presumed Hospital-Related Transmission and Infection

Of the 138 patients, 57 (41.3%) were presumed to have been infected in hospital, including 17 patients (12.3%) who were already hospitalized for other reasons and 40 health care workers (29%). Of the hospitalized patients, 7 patients were from the surgical department, 5 were from internal medicine, and 5 were from the oncology department. Of the infected health care workers, 31 (77.5%) worked on general wards, 7 (17.5%) in the emergency department, and 2 (5%) in the ICU. One patient in the current study presented with abdominal symptoms and was admitted to the surgical department. More than 10 health care workers in this department were presumed to have been infected by this patient. Patient-to-patient transmission also was presumed to have occurred, and at least 4 hospitalized patients in the same ward were infected, and all presented with atypical abdominal symptoms. One of the 4 patients had fever and was diagnosed as having nCoV infection during hospitalization. Then, the patient was isolated. Subsequently, the other 3 patients in the same ward had fever, presented with abdominal symptoms, and were diagnosed as having nCoV infection.

Discussion

This report, to our knowledge, is the largest case series to date of hospitalized patients with NCIP. As of February 3, 2020, of the 138 patients included in this study, 26% required

Figure 2. Dynamic Profile of Laboratory Parameters in 33 Patients With Novel Coronavirus–Infected Pneumonia (NCIP)



Timeline charts illustrate the laboratory parameters in 33 patients with NCIP (5 nonsurvivors and 28 survivors) every other day based on the days after the onset of illness. The solid lines in black show the upper normal limit of each parameter, and the solid line in red shows the lower normal limit of lymphocyte count.

[a] $P < .05$ for nonsurvivors vs survivors.

ICU care, 34.1% were discharged, 6 died (4.3%), and 61.6% remain hospitalized. For those who were discharged (n = 47), the hospital stay was 10 days (IQR, 7.0-14.0). The time from onset to dyspnea was 5.0 days, 7.0 days to hospital admission, and 8.0 days to ARDS. Common symptoms at onset of illness were fever, dry cough, myalgia, fatigue, dyspnea, and anorexia. However, a significant proportion of patients presented initially with atypical symptoms, such as diarrhea and nausea. Major complications during hospitalization included ARDS, arrhythmia, and shock. Bilateral distribution of patchy shadows and ground glass opacity was a typical hallmark of CT scan for NCIP. Most critical ill patients were older and had more underlying conditions than patients not admitted to the ICU. Most patients required oxygen therapy

and a minority of the patients needed invasive ventilation or even extracorporeal membrane oxygenation.

The data in this study suggest rapid person-to-person transmission of 2019-nCoV may have occurred. The main reason is derived from the estimation of the basic reproductive number (R_0) based on a previous study.[15] R_0 indicates how contagious an infectious disease is. As an infection spreads to new people, it reproduces itself; R_0 indicates the average number of additional individuals that one affected case infects during the course of their illness and specifically applies to a population of people who were previously free of infection and have not been vaccinated. Based on the report, R_0 from nCoV is 2.2, which estimated that, on average, each patient has been spreading infection to 2.2 other people.[15] One reason for the rapid spread may be related to the atypical symptoms in the early stage in some patients infected with nCoV.

A recent study showed that nCoV was detected in stool samples of patients with abdominal symptoms.[16] However, it is difficult to differentiate and screen patients with atypical symptoms. Nevertheless, the rapid human-to-human transmission among close contacts is an important feature in nCoV pneumonia.[10,11,15]

The patients admitted to the ICU were older and had a greater number of comorbid conditions than those not admitted to the ICU. This suggests that age and comorbidity may be risk factors for poor outcome. However, there was no difference in the proportion of men and women between ICU patients and non-ICU patients. These data differ from the recent report that showed 2019-nCoV infection is more likely to affect males.[8] The possible explanation is that the nCoV infection in patients in the previous report was related to exposure associated with the Huanan Seafood Wholesale Market, and most of the affected patients were male workers. Compared with symptoms in non-ICU patients, symptoms were more common in critically ill patients, including dyspnea, abdominal pain, and anorexia. The onset of symptoms may help physicians identify the patients with poor prognosis. In this cohort, the overall rates of severe hypoxia and invasive ventilation were higher than those in the previous study,[9] likely because the cases in the previous study were from the early epidemic stage of the NCIP, and the current cases are from the stage of outbreak.

The most common laboratory abnormalities observed in this study were depressed total lymphocytes, prolonged prothrombin time, and elevated lactate dehydrogenase. Compared with non-ICU patients, patients who received ICU care had numerous laboratory abnormalities. These abnormalities suggest that 2019-nCoV infection may be associated with cellular immune deficiency, coagulation activation, myocardia injury, hepatic injury, and kidney injury. These laboratory abnormalities are similar to those previously observed in patients with MERS-CoV and SARS-CoV infection.

The dynamic profile of laboratory findings was tracked in 33 patients with NCIP (5 nonsurvivors and 28 survivors). In the nonsurvivors, the neutrophil count, D-dimer, blood urea, and creatinine levels continued to increase, and the lymphocyte counts continued to decrease until death occurred. Neutrophilia may be related to cytokine storm induced by virus invasion, coagulation activation could have been related to sustained inflammatory response, and acute kidney injury could have been related to direct effects of the virus, hypoxia, and shock. The 3 pathologic mechanisms may be associated with the death of patients with NCIP.

Until now, no specific treatment has been recommended for coronavirus infection except for meticulous supportive care.[17] Currently, the approach to this disease is to control the source of infection; use of personal protection precaution to reduce the risk of transmission; and early diagnosis, isolation, and supportive treatments for affected patients. Antibacterial agents are ineffective. In addition, no antiviral agents have been found to provide benefit for treating SARS and MERS. All of the patients in this study received antibacterial agents, 90% received antiviral therapy, and 45% received methylprednisolone. The dose of oseltamivir and methylprednisolone varied depending on disease severity. However, no effective outcomes were observed.

This study has several limitations. First, respiratory tract specimens were used to diagnose NCIP through RT-PCR. The serum of patients was not obtained to evaluate the viremia. The viral load is a potentially useful marker associated with disease severity of coronavirus infection, and this should be determined in NCIP. Second, hospital-related transmission/infection could not be definitively proven but was suspected and presumed based on timing and patterns of exposure to infected patients and subsequent development of infection. Third, among the 138 cases, most patients are still hospitalized at the time of manuscript submission. Therefore, it is difficult to assess risk factors for poor outcome, and continued observations of the natural history of the disease are needed.

Conclusions

In this single-center case series of 138 hospitalized patients with confirmed NCIP in Wuhan, China, presumed hospital-related transmission of 2019-nCoV was suspected in 41% of patients, 26% of patients received ICU care, and mortality was 4.3%.

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Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China

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Summary

Background A recent cluster of pneumonia cases in Wuhan, China, was caused by a novel betacoronavirus, the 2019 novel coronavirus (2019-nCoV). We report the epidemiological, clinical, laboratory, and radiological characteristics and treatment and clinical outcomes of these patients.

Methods All patients with suspected 2019-nCoV were admitted to a designated hospital in Wuhan. We prospectively collected and analysed data on patients with laboratory-confirmed 2019-nCoV infection by real-time RT-PCR and next-generation sequencing. Data were obtained with standardised data collection forms shared by the International Severe Acute Respiratory and Emerging Infection Consortium from electronic medical records. Researchers also directly communicated with patients or their families to ascertain epidemiological and symptom data. Outcomes were also compared between patients who had been admitted to the intensive care unit (ICU) and those who had not.

Findings By Jan 2, 2020, 41 admitted hospital patients had been identified as having laboratory-confirmed 2019-nCoV infection. Most of the infected patients were men (30 [73%] of 41); less than half had underlying diseases (13 [32%]), including diabetes (eight [20%]), hypertension (six [15%]), and cardiovascular disease (six [15%]). Median age was 49·0 years (IQR 41·0–58·0). 27 (66%) of 41 patients had been exposed to Huanan seafood market. One family cluster was found. Common symptoms at onset of illness were fever (40 [98%] of 41 patients), cough (31 [76%]), and myalgia or fatigue (18 [44%]); less common symptoms were sputum production (11 [28%] of 39), headache (three [8%] of 38), haemoptysis (two [5%] of 39), and diarrhoea (one [3%] of 38). Dyspnoea developed in 22 (55%) of 40 patients (median time from illness onset to dyspnoea 8·0 days [IQR 5·0–13·0]). 26 (63%) of 41 patients had lymphopenia. All 41 patients had pneumonia with abnormal findings on chest CT. Complications included acute respiratory distress syndrome (12 [29%]), RNAaemia (six [15%]), acute cardiac injury (five [12%]) and secondary infection (four [10%]). 13 (32%) patients were admitted to an ICU and six (15%) died. Compared with non-ICU patients, ICU patients had higher plasma levels of IL2, IL7, IL10, GSCF, IP10, MCP1, MIP1A, and TNFα.

Interpretation The 2019-nCoV infection caused clusters of severe respiratory illness similar to severe acute respiratory syndrome coronavirus and was associated with ICU admission and high mortality. Major gaps in our knowledge of the origin, epidemiology, duration of human transmission, and clinical spectrum of disease need fulfilment by future studies.

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Introduction

Coronaviruses are enveloped non-segmented positive-sense RNA viruses belonging to the family Coronaviridae and the order Nidovirales and broadly distributed in humans and other mammals.[1] Although most human coronavirus infections are mild, the epidemics of the two betacoronaviruses, severe acute respiratory syndrome coronavirus (SARS-CoV)[2–4] and Middle East respiratory syndrome coronavirus (MERS-CoV),[5,6] have caused more than 10 000 cumulative cases in the past two decades, with mortality rates of 10% for SARS-CoV and 37% for MERS-CoV.[7,8] The coronaviruses already identified might only be the tip of the iceberg, with potentially more novel and severe zoonotic events to be revealed.

In December, 2019, a series of pneumonia cases of unknown cause emerged in Wuhan, Hubei, China, with clinical presentations greatly resembling viral pneumonia.[9] Deep sequencing analysis from lower respiratory tract samples indicated a novel coronavirus, which was named 2019 novel coronavirus (2019-nCoV). Thus far, more than 800 confirmed cases, including in health-care workers, have been identified in Wuhan, and several exported cases have been confirmed in other provinces in China, and in Thailand, Japan, South Korea, and the USA.[10–13]

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Research in context

Evidence before this study

Human coronaviruses, including hCoV-229E, OC43, NL63, and HKU1, cause mild respiratory diseases. Fatal coronavirus infections that have emerged in the past two decades are severe acute respiratory syndrome coronavirus (SARS-CoV) and the Middle East respiratory syndrome coronavirus. We searched PubMed and the China National Knowledge Infrastructure database for articles published up to Jan 11, 2020, using the keywords "novel coronovirus", "2019 novel coronavirus", or "2019-nCoV". No published work about the human infection caused by the 2019 novel coronavirus (2019-nCoV) could be identified.

Added value of this study

We report the epidemiological, clinical, laboratory, and radiological characteristics, treatment, and clinical outcomes of 41 laboratory-confirmed cases infected with 2019-nCoV. 27 (66%) of 41 patients had a history of direct exposure to the Huanan seafood market. The median age of patients was 49·0 years (IQR 41·0–58·0), and 13 (32%) patients had underlying disease. All patients had pneumonia. A third of patients were admitted to intensive care units, and six died. High concentrations of cytokines were recorded in plasma of critically ill patients infected with 2019-nCoV.

Implications of all the available evidence

2019-nCoV caused clusters of fatal pneumonia with clinical presentation greatly resembling SARS-CoV. Patients infected with 2019-nCoV might develop acute respiratory distress syndrome, have a high likelihood of admission to intensive care, and might die. The cytokine storm could be associated with disease severity. More efforts should be made to know the whole spectrum and pathophysiology of the new disease.

We aim to describe epidemiological, clinical, laboratory, and radiological characteristics, treatment, and outcomes of patients confirmed to have 2019-nCoV infection, and to compare the clinical features between intensive care unit (ICU) and non-ICU patients. We hope our study findings will inform the global community of the emergence of this novel coronavirus and its clinical features.

Methods

Patients

Following the pneumonia cases of unknown cause reported in Wuhan and considering the shared history of exposure to Huanan seafood market across the patients, an epidemiological alert was released by the local health authority on Dec 31, 2019, and the market was shut down on Jan 1, 2020. Meanwhile, 59 suspected cases with fever and dry cough were transferred to a designated hospital starting from Dec 31, 2019. An expert team of physicians, epidemiologists, virologists, and government officials was soon formed after the alert.

Since the cause was unknown at the onset of these emerging infections, the diagnosis of pneumonia of unknown cause in Wuhan was based on clinical characteristics, chest imaging, and the ruling out of common bacterial and viral pathogens that cause pneumonia. Suspected patients were isolated using airborne precautions in the designated hospital, Jin Yin-tan Hospital (Wuhan, China), and fit-tested N95 masks and airborne precautions for aerosol-generating procedures were taken. This study was approved by the National Health Commission of China and Ethics Commission of Jin Yin-tan Hospital (KY-2020-01.01). Written informed consent was waived by the Ethics Commission of the designated hospital for emerging infectious diseases.

Procedures

Local centres for disease control and prevention collected respiratory, blood, and faeces specimens, then shipped them to designated authoritative laboratories to detect the pathogen (NHC Key Laboratory of Systems Biology of Pathogens and Christophe Mérieux Laboratory, Beijing, China). A novel coronavirus, which was named 2019-nCoV, was isolated then from lower respiratory tract specimen and a diagnostic test for this virus was developed soon after that.[14] Of 59 suspected cases, 41 patients were confirmed to be infected with 2019-nCoV. The presence of 2019-nCoV in respiratory specimens was detected by next-generation sequencing or real-time RT-PCR methods. The primers and probe target to envelope gene of CoV were used and the sequences were as follows: forward primer 5′-TCAGAATGCCAATCTCCCCAAC-3′; reverse primer 5′-AAAGGTCCACCCGATACATTGA-3′; and the probe 5′CY5-CTAGTTACACTAGCCATCCTTACTGC-3′BHQ1. Conditions for the amplifications were 50°C for 15 min, 95°C for 3 min, followed by 45 cycles of 95°C for 15 s and 60°C for 30 s.

Initial investigations included a complete blood count, coagulation profile, and serum biochemical test (including renal and liver function, creatine kinase, lactate dehydrogenase, and electrolytes). Respiratory specimens, including nasal and pharyngeal swabs, bronchoalveolar lavage fluid, sputum, or bronchial aspirates were tested for common viruses, including influenza, avian influenza, respiratory syncytial virus, adenovirus, parainfluenza virus, SARS-CoV and MERS-CoV using real-time RT-PCR assays approved by the China Food and Drug Administration. Routine bacterial and fungal examinations were also performed.

Given the emergence of the 2019-nCoV pneumonia cases during the influenza season, antibiotics (oral and intravenous) and oseltamivir (orally 75 mg twice daily) were empirically administered. Corticosteroid therapy

(methylprednisolone 40–120 mg per day) was given as a combined regimen if severe community-acquired pneumonia was diagnosed by physicians at the designated hospital. Oxygen support (eg, nasal cannula and invasive mechanical ventilation) was administered to patients according to the severity of hypoxaemia. Repeated tests for 2019-nCoV were done in patients confirmed to have 2019-nCoV infection to show viral clearance before hospital discharge or discontinuation of isolation.

Data collection

We reviewed clinical charts, nursing records, laboratory findings, and chest x-rays for all patients with laboratory-confirmed 2019-nCoV infection who were reported by the local health authority. The admission data of these patients was from Dec 16, 2019, to Jan 2, 2020. Epidemiological, clinical, laboratory, and radiological characteristics and treatment and outcomes data were obtained with standardised data collection forms (modified case record form for severe acute respiratory infection clinical characterisation shared by the International Severe Acute Respiratory and Emerging Infection Consortium) from electronic medical records. Two researchers also independently reviewed the data collection forms to double check the data collected. To ascertain the epidemiological and symptom data, which were not available from electronic medical records, the researchers also directly communicated with patients or their families to ascertain epidemiological and symptom data.

Cytokine and chemokine measurement

To characterise the effect of coronavirus on the production of cytokines or chemokines in the acute phase of the illness, plasma cytokines and chemokines (IL1B, IL1RA, IL2, IL4, IL5, IL6, IL7, IL8 (also known as CXCL8), IL9, IL10, IL12p70, IL13, IL15, IL17A, Eotaxin (also known as CCL11), basic FGF2, GCSF (CSF3), GMCSF (CSF2), IFNγ, IP10 (CXCL10), MCP1 (CCL2), MIP1A (CCL3), MIP1B (CCL4), PDGFB, RANTES (CCL5), TNFα, and VEGFA were measured using Human Cytokine Standard 27-Plex Assays panel and the Bio-Plex 200 system (Bio-Rad, Hercules, CA, USA) for all patients according to the manufacturer's instructions. The plasma samples from four healthy adults were used as controls for cross-comparison. The median time from being transferred to a designated hospital to the blood sample collection was 4 days (IQR 2–5).

Detection of coronavirus in plasma

Each 80 µL plasma sample from the patients and contacts was added into 240 µL of Trizol LS (10296028; Thermo Fisher Scientific, Carlsbad, CA, USA) in the Biosafety Level 3 laboratory. Total RNA was extracted by Direct-zol RNA Miniprep kit (R2050; Zymo research, Irvine, CA, USA) according to the manufacturer's instructions and 50 µL elution was obtained for each sample. 5 µL RNA was used for real-time RT-PCR, which targeted the *NP* gene using AgPath-ID One-Step RT-PCR Reagent (AM1005; Thermo Fisher Scientific). The final reaction mix concentration of the primers was 500 nM and probe was 200 nM. Real-time RT-PCR was performed using the following conditions: 50°C for 15 min and 95°C for 3 min, 50 cycles of amplification at 95°C for 10 s and 60°C for 45 s. Since we did not perform tests for detecting infectious virus in blood, we avoided the term viraemia and used RNAaemia instead. RNAaemia was defined as a positive result for real-time RT-PCR in the plasma sample.

Definitions

Acute respiratory distress syndrome (ARDS) and shock were defined according to the interim guidance of WHO

For more on the **International Severe Acute Respiratory and Emerging Infection Consortium** see https://isaric.tghn.org/

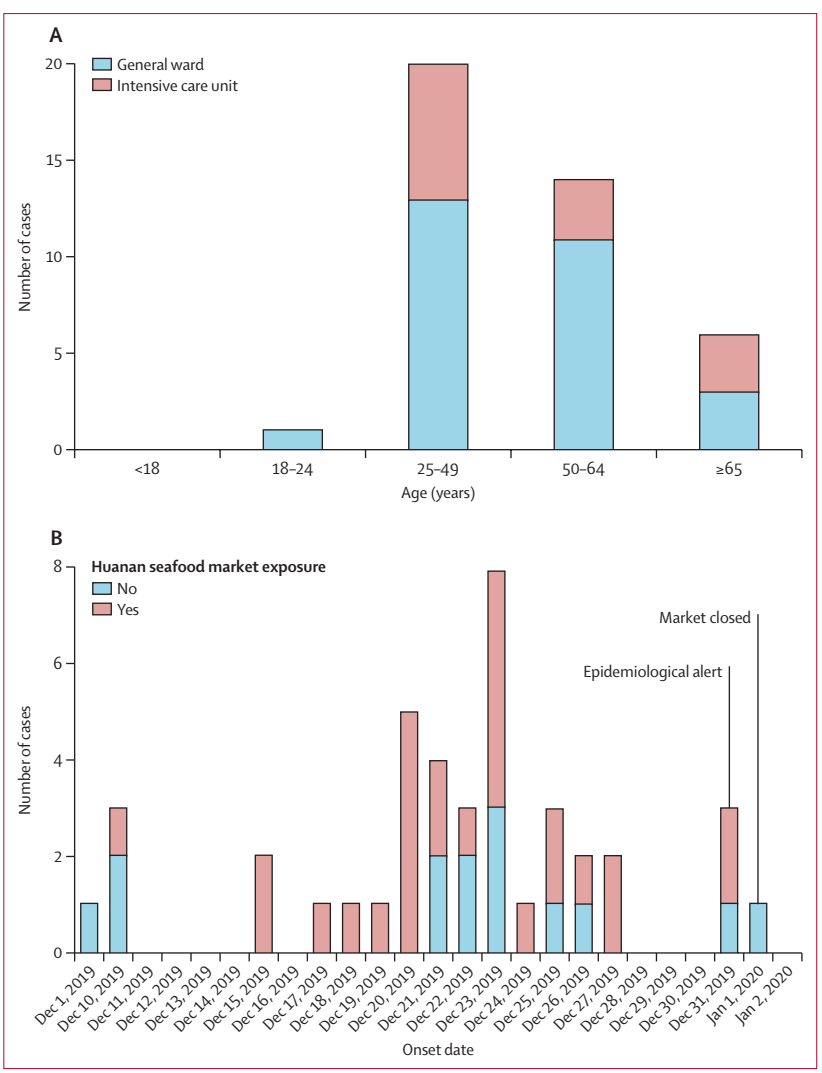

Figure 1: **Date of illness onset and age distribution of patients with laboratory-confirmed 2019-nCoV infection**

(A) Number of hospital admissions by age group. (B) Distribution of symptom onset date for laboratory-confirmed cases. The Wuhan local health authority issued an epidemiological alert on Dec 30, 2019, and closed the Huanan seafood market 2 days later.

	All patients (n=41)	ICU care (n=13)	No ICU care (n=28)	p value
Characteristics				
Age, years	49·0 (41·0–58·0)	49·0 (41·0–61·0)	49·0 (41·0–57·5)	0·60
Sex	..	..	..	0·24
Men	30 (73%)	11 (85%)	19 (68%)	..
Women	11 (27%)	2 (15%)	9 (32%)	..
Huanan seafood market exposure	27 (66%)	9 (69%)	18 (64%)	0·75
Current smoking	3 (7%)	0	3 (11%)	0·31
Any comorbidity	13 (32%)	5 (38%)	8 (29%)	0·53
Diabetes	8 (20%)	1 (8%)	7 (25%)	0·16
Hypertension	6 (15%)	2 (15%)	4 (14%)	0·93
Cardiovascular disease	6 (15%)	3 (23%)	3 (11%)	0·32
Chronic obstructive pulmonary disease	1 (2%)	1 (8%)	0	0·14
Malignancy	1 (2%)	0	1 (4%)	0·49
Chronic liver disease	1 (2%)	0	1 (4%)	0·68
Signs and symptoms				
Fever	40 (98%)	13 (100%)	27 (96%)	0·68
Highest temperature, °C	..	..	..	0·037
<37·3	1 (2%)	0	1 (4%)	..
37·3–38·0	8 (20%)	3 (23%)	5 (18%)	..
38·1–39·0	18 (44%)	7 (54%)	11 (39%)	..
>39·0	14 (34%)	3 (23%)	11 (39%)	..
Cough	31 (76%)	11 (85%)	20 (71%)	0·35
Myalgia or fatigue	18 (44%)	7 (54%)	11 (39%)	0·38
Sputum production	11/39 (28%)	5 (38%)	6/26 (23%)	0·32
Headache	3/38 (8%)	0	3/25 (12%)	0·10
Haemoptysis	2/39 (5%)	1 (8%)	1/26 (4%)	0·46
Diarrhoea	1/38 (3%)	0	1/25 (4%)	0·66
Dyspnoea	22/40 (55%)	12 (92%)	10/27 (37%)	0·0010
Days from illness onset to dyspnoea	8·0 (5·0–13·0)	8·0 (6·0–17·0)	6·5 (2·0–10·0)	0·22
Days from first admission to transfer	5·0 (1·0–8·0)	8·0 (5·0–14·0)	1·0 (1·0–6·5)	0·002
Systolic pressure, mm Hg	125·0 (119·0–135·0)	145·0 (123·0–167·0)	122·0 (118·5–129·5)	0·018
Respiratory rate >24 breaths per min	12 (29%)	8 (62%)	4 (14%)	0·0023

Data are median (IQR), n (%), or n/N (%), where N is the total number of patients with available data. p values comparing ICU care and no ICU care are from χ^2 test, Fisher's exact test, or Mann-Whitney U test. 2019-nCoV=2019 novel coronavirus. ICU=intensive care unit.

Table 1: **Demographics and baseline characteristics of patients infected with 2019-nCoV**

for novel coronavirus.[9] Hypoxaemia was defined as arterial oxygen tension (PaO_2) over inspiratory oxygen fraction (FIO_2) of less than 300 mm Hg.[15] Acute kidney injury was identified and classified on the basis of the highest serum creatinine level or urine output criteria according to the kidney disease improving global outcomes classification.[16] Secondary infection was diagnosed if the patients had clinical symptoms or signs of nosocomial pneumonia or bacteraemia, and was combined with a positive culture of a new pathogen from a lower respiratory tract specimen (including the sputum, transtracheal aspirates, or bronchoalveolar lavage fluid, or from blood samples taken ≥48 h after admission).[17] Cardiac injury followed the definition used in our previous study in H7N9 patients.[18] In brief, cardiac injury was diagnosed if serum levels of cardiac biomarkers (eg, troponin I) were above the 99th percentile upper reference limit, or new abnormalities were shown in electrocardiography and echocardiography.

Statistical analysis

Continuous variables were expressed as median (IQR) and compared with the Mann-Whitney U test; categorical variables were expressed as number (%) and compared by χ^2 test or Fisher's exact test between ICU care and no ICU care groups. Boxplots were drawn to describe plasma cytokine and chemokine concentrations.

A two-sided α of less than 0·05 was considered statistically significant. Statistical analyses were done using the SAS software, version 9.4, unless otherwise indicated.

Role of the funding source

The funder of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report. The corresponding authors had full access to all the data in the study and had final responsibility for the decision to submit for publication.

Results

By Jan 2, 2020, 41 admitted hospital patients were identified as laboratory-confirmed 2019-nCoV infection in Wuhan. 20 [49%]) of the 2019-nCoV-infected patients were aged 25–49 years, and 14 (34%) were aged 50–64 years (figure 1A). The median age of the patients was 49·0 years (IQR 41·0–58·0; table 1). In our cohort of the first 41 patients as of Jan 2, no children or adolescents were infected. Of the 41 patients, 13 (32%) were admitted to the ICU because they required high-flow nasal cannula or higher-level oxygen support measures to correct hypoxaemia. Most of the infected patients were men (30 [73%]); less than half had underlying diseases (13 [32%]), including diabetes (eight [20%]), hypertension (six [15%]), and cardiovascular disease (six [15%]).

27 (66%) patients had direct exposure to Huanan seafood market (figure 1B). Market exposure was similar between the patients with ICU care (nine [69%]) and those with non-ICU care (18 [64%]). The symptom onset date of the first patient identified was Dec 1, 2019. None of his family members developed fever or any respiratory symptoms. No epidemiological link was found between the first patient and later cases. The first fatal case, who had continuous exposure to the market, was admitted to hospital because of a 7-day history of fever, cough, and dyspnoea. 5 days after illness onset, his wife, a 53-year-old woman who had no known history of exposure to the market, also presented with pneumonia and was hospitalised in the isolation ward.

The most common symptoms at onset of illness were fever (40 [98%] of 41 patients), cough (31 [76%]), and myalgia or fatigue (18 [44%]); less common symptoms

were sputum production (11 [28%] of 39), headache (three [8%] of 38), haemoptysis (two [5%] of 39), and diarrhoea (one [3%] of 38; table 1). More than half of patients (22 [55%] of 40) developed dyspnoea. The median duration from illness onset to dyspnoea was 8·0 days (IQR 5·0–13·0). The median time from onset of symptoms to first hospital admission was 7·0 days (4·0–8·0), to shortness of breath was 8·0 days (5·0–13·0), to ARDS was 9·0 days (8·0–14·0), to mechanical ventilation was 10·5 days (7·0–14·0), and to ICU admission was 10·5 days (8·0–17·0; figure 2).

The blood counts of patients on admission showed leucopenia (white blood cell count less than 4×10^9/L; ten [25%] of 40 patients) and lymphopenia (lymphocyte count $<1{\cdot}0\times10^9$/L; 26 [63%] patients; table 2). Prothrombin time and D-dimer level on admission were higher in ICU patients (median prothrombin time 12·2 s [IQR 11·2–13·4]; median D-dimer level 2·4 mg/L [0·6–14·4]) than non-ICU patients (median prothrombin time 10·7 s [9·8–12·1], p=0·012; median D-dimer level 0·5 mg/L [0·3–0·8], p=0·0042). Levels of aspartate aminotransferase were increased in 15 (37%) of 41 patients, including eight (62%) of 13 ICU patients and seven (25%) of 28 non-ICU patients. Hypersensitive troponin I (hs-cTnI) was increased substantially in five patients, in whom the diagnosis of virus-related cardiac injury was made.

Most patients had normal serum levels of procalcitonin on admission (procalcitonin <0·1 ng/mL; 27 [69%] patients; table 2). Four ICU patients developed secondary infections. Three of the four patients with secondary infection had procalcitonin greater than 0·5 ng/mL (0·69 ng/mL, 1·46 ng/mL, and 6·48 ng/mL).

On admission, abnormalities in chest CT images were detected among all patients. Of the 41 patients, 40 (98%) had bilateral involvement (table 2). The typical findings of chest CT images of ICU patients on admission were bilateral multiple lobular and subsegmental areas of consolidation (figure 3A). The representative chest CT findings of non-ICU patients showed bilateral ground-glass opacity and subsegmental areas of consolidation (figure 3B). Later chest CT images showed bilateral ground-glass opacity, whereas the consolidation had been resolved (figure 3C).

Initial plasma IL1B, IL1RA, IL7, IL8, IL9, IL10, basic FGF, GCSF, GMCSF, IFNγ, IP10, MCP1, MIP1A, MIP1B, PDGF, TNFα, and VEGF concentrations were higher in both ICU patients and non-ICU patients than in healthy adults (appendix pp 6–7). Plasma levels of IL5, IL12p70, IL15, Eotaxin, and RANTES were similar between healthy adults and patients infected with 2019-nCoV. Further comparison between ICU and non-ICU patients showed that plasma concentrations of IL2, IL7, IL10, GCSF, IP10, MCP1, MIP1A, and TNFα were higher in ICU patients than non-ICU patients.

All patients had pneumonia. Common complications included ARDS (12 [29%] of 41 patients), followed by RNAaemia (six [15%] patients), acute cardiac injury (five [12%] patients), and secondary infection (four [10%] patients; table 3). Invasive mechanical ventilation was required in four (10%) patients, with two of them (5%) had refractory hypoxaemia and received extracorporeal membrane oxygenation as salvage therapy. All patients were administered with empirical antibiotic treatment, and 38 (93%) patients received antiviral therapy (oseltamivir). Additionally, nine (22%) patients were given systematic corticosteroids. A comparison of clinical features between patients who received and did not receive systematic corticosteroids is in the appendix (pp 1–5).

As of Jan 22, 2020, 28 (68%) of 41 patients have been discharged and six (15%) patients have died. Fitness for discharge was based on abatement of fever for at least 10 days, with improvement of chest radiographic evidence and viral clearance in respiratory samples from upper respiratory tract.

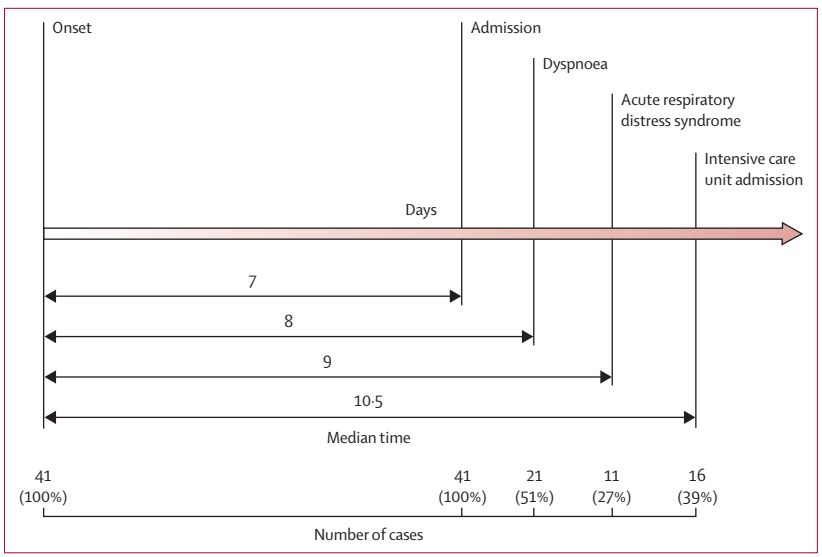

Figure 2: **Timeline of 2019-nCoV cases after onset of illness**

Discussion

We report here a cohort of 41 patients with laboratory-confirmed 2019-nCoV infection. Patients had serious, sometimes fatal, pneumonia and were admitted to the designated hospital in Wuhan, China, by Jan 2, 2020. Clinical presentations greatly resemble SARS-CoV. Patients with severe illness developed ARDS and required ICU admission and oxygen therapy. The time between hospital admission and ARDS was as short as 2 days. At this stage, the mortality rate is high for 2019-nCoV, because six (15%) of 41 patients in this cohort died.

See Online for appendix

The number of deaths is rising quickly. As of Jan 24, 2020, 835 laboratory-confirmed 2019-nCoV infections were reported in China, with 25 fatal cases. Reports have been released of exported cases in many provinces in China, and in other countries;

	All patients (n=41)	ICU care (n=13)	No ICU care (n=28)	p value
White blood cell count, ×10⁹/L	6·2 (4·1–10·5)	11·3 (5·8–12·1)	5·7 (3·1–7·6)	0·011
<4	10/40 (25%)	1/13 (8%)	9/27 (33%)	0·041
4–10	18/40 (45%)	5/13 (38%)	13/27 (48%)	..
>10	12/40 (30%)	7/13 (54%)	5/27 (19%)	..
Neutrophil count, ×10⁹/L	5·0 (3·3–8·9)	10·6 (5·0–11·8)	4·4 (2·0–6·1)	0·00069
Lymphocyte count, ×10⁹/L	0·8 (0·6–1·1)	0·4 (0·2–0·8)	1·0 (0·7–1·1)	0·0041
<1·0	26/41 (63%)	11/13 (85%)	15/28 (54%)	0·045
≥1·0	15/41 (37%)	2/13 (15%)	13/28 (46%)	..
Haemoglobin, g/L	126·0 (118·0–140·0)	122·0 (111·0–128·0)	130·5 (120·0–140·0)	0·20
Platelet count, ×10⁹/L	164·5 (131·5–263·0)	196·0 (165·0–263·0)	149·0 (131·0–263·0)	0·45
<100	2/40 (5%)	1/13 (8%)	1/27 (4%)	0·45
≥100	38/40 (95%)	12/13 (92%)	26/27 (96%)	..
Prothrombin time, s	11·1 (10·1–12·4)	12·2 (11·2–13·4)	10·7 (9·8–12·1)	0·012
Activated partial thromboplastin time, s	27·0 (24·2–34·1)	26·2 (22·5–33·9)	27·7 (24·8–34·1)	0·57
D-dimer, mg/L	0·5 (0·3–1·3)	2·4 (0·6–14·4)	0·5 (0·3–0·8)	0·0042
Albumin, g/L	31·4 (28·9–36·0)	27·9 (26·3–30·9)	34·7 (30·2–36·5)	0·0066
Alanine aminotransferase, U/L	32·0 (21·0–50·0)	49·0 (29·0–115·0)	27·0 (19·5–40·0)	0·038
Aspartate aminotransferase, U/L	34·0 (26·0–48·0)	44·0 (30·0–70·0)	34·0 (24·0–40·5)	0·10
≤40	26/41 (63%)	5/13 (38%)	21/28 (75%)	0·025
>40	15/41 (37%)	8/13 (62%)	7/28 (25%)	..
Total bilirubin, mmol/L	11·7 (9·5–13·9)	14·0 (11·9–32·9)	10·8 (9·4–12·3)	0·011
Potassium, mmol/L	4·2 (3·8–4·8)	4·6 (4·0–5·0)	4·1 (3·8–4·6)	0·27
Sodium, mmol/L	139·0 (137·0–140·0)	138·0 (137·0–139·0)	139·0 (137·5–140·5)	0·26
Creatinine, µmol/L	74·2 (57·5–85·7)	79·0 (53·1–92·7)	73·3 (57·5–84·7)	0·84
≤133	37/41 (90%)	11/13 (85%)	26/28 (93%)	0·42
>133	4/41 (10%)	2/13 (15%)	2/28 (7%)	..
Creatine kinase, U/L	132·5 (62·0–219·0)	132·0 (82·0–493·0)	133·0 (61·0–189·0)	0·31
≤185	27/40 (68%)	7/13 (54%)	20/27 (74%)	0·21
>185	13/40 (33%)	6/13 (46%)	7/27 (26%)	..
Lactate dehydrogenase, U/L	286·0 (242·0–408·0)	400·0 (323·0–578·0)	281·0 (233·0–357·0)	0·0044
≤245	11/40 (28%)	1/13 (8%)	10/27 (37%)	0·036
>245	29/40 (73%)	12/13 (92%)	17/27 (63%)	..
Hypersensitive troponin I, pg/mL	3·4 (1·1–9·1)	3·3 (3·0–163·0)	3·5 (0·7–5·4)	0·08
>28 (99th percentile)	5/41 (12%)	4/13 (31%)	1/28 (4%)	0·017
Procalcitonin, ng/mL	0·1 (0·1–0·1)	0·1 (0·1–0·4)	0·1 (0·1–0·1)	0·031
<0·1	27/39 (69%)	6/12 (50%)	21/27 (78%)	0·0029
≥0·1 to <0·25	7/39 (18%)	3/12 (25%)	4/27 (15%)	..
≥0·25 to <0·5	2/39 (5%)	0/12	2/27 (7%)	..
≥0·5	3/39 (8%)	3/12 (25%)*	0/27	..
Bilateral involvement of chest radiographs	40/41 (98%)	13/13 (100%)	27/28 (96%)	0·68
Cycle threshold of respiratory tract	32·2 (31·0–34·5)	31·1 (30·0–33·5)	32·2 (31·1–34·7)	0·39

Data are median (IQR) or n/N (%), where N is the total number of patients with available data. p values comparing ICU care and no ICU care are from χ^2, Fisher's exact test, or Mann-Whitney U test. 2019-nCoV=2019 novel coronavirus. ICU=intensive care unit. *Complicated typical secondary infection during the first hospitalisation.

Table 2: **Laboratory findings of patients infected with 2019-nCoV on admission to hospital**

some health-care workers have also been infected in Wuhan. Taken together, evidence so far indicates human transmission for 2019-nCoV. We are concerned that 2019-nCoV could have acquired the ability for efficient human transmission.[19] Airborne precautions, such as a fit-tested N95 respirator, and other personal protective equipment are strongly recommended. To prevent further spread of the disease in health-care settings that are caring for patients infected with 2019-nCoV, onset of fever and respiratory symptoms should be closely monitored among health-care workers. Testing of respiratory specimens should be done immediately once a diagnosis is suspected. Serum antibodies should be tested among health-care workers

before and after their exposure to 2019-nCoV for identification of asymptomatic infections.

Similarities of clinical features between 2019-nCoV and previous betacoronavirus infections have been noted. In this cohort, most patients presented with fever, dry cough, dyspnoea, and bilateral ground-glass opacities on chest CT scans. These features of 2019-nCoV infection bear some resemblance to SARS-CoV and MERS-CoV infections.[20,21] However, few patients with 2019-nCoV infection had prominent upper respiratory tract signs and symptoms (eg, rhinorrhoea, sneezing, or sore throat), indicating that the target cells might be located in the lower airway. Furthermore, 2019-nCoV patients rarely developed intestinal signs and symptoms (eg, diarrhoea), whereas about 20–25% of patients with MERS-CoV or SARS-CoV infection had diarrhoea.[21] Faecal and urine samples should be tested to exclude a potential alternative route of transmission that is unknown at this stage.

The pathophysiology of unusually high pathogenicity for SARS-CoV or MERS-CoV has not been completely understood. Early studies have shown that increased amounts of proinflammatory cytokines in serum (eg, IL1B, IL6, IL12, IFNγ, IP10, and MCP1) were associated with pulmonary inflammation and extensive lung damage in SARS patients.[22] MERS-CoV infection was also reported to induce increased concentrations of proinflammatory cytokines (IFNγ, TNFα, IL15, and IL17).[23] We noted that patients infected with 2019-nCoV also had high amounts of IL1B, IFNγ, IP10, and MCP1, probably leading to activated T-helper-1 (Th1) cell responses. Moreover, patients requiring ICU admission had higher concentrations of GCSF, IP10, MCP1, MIP1A, and TNFα than did those not requiring ICU admission, suggesting that the cytokine storm was associated with disease severity. However, 2019-nCoV infection also initiated increased secretion of T-helper-2 (Th2) cytokines (eg, IL4 and IL10) that suppress inflammation, which differs from SARS-CoV infection.[22] Further studies are necessary to characterise the Th1 and Th2 responses in 2019-nCoV infection and to elucidate the pathogenesis. Autopsy or biopsy studies would be the key to understand the disease.

In view of the high amount of cytokines induced by SARS-CoV,[22,24] MERS-CoV,[25,26] and 2019-nCoV infections, corticosteroids were used frequently for treatment of patients with severe illness, for possible benefit by reducing inflammatory-induced lung injury. However, current evidence in patients with SARS and MERS

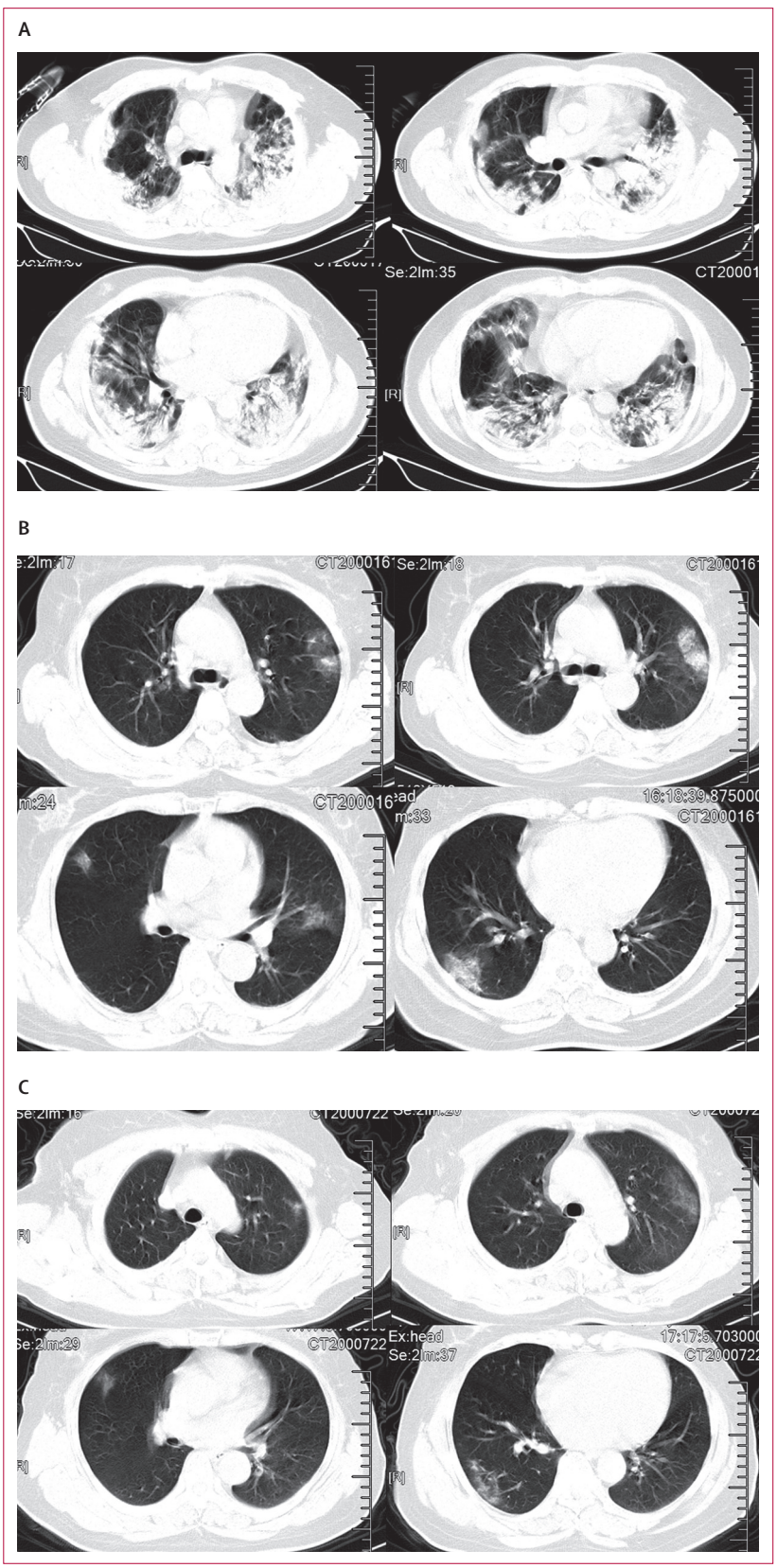

Figure 3: **Chest CT images**

(A) Transverse chest CT images from a 40-year-old man showing bilateral multiple lobular and subsegmental areas of consolidation on day 15 after symptom onset. Transverse chest CT images from a 53-year-old woman showing bilateral ground-glass opacity and subsegmental areas of consolidation on day 8 after symptom onset (B), and bilateral ground-glass opacity on day 12 after symptom onset (C).

	All patients (n=41)	ICU care (n=13)	No ICU care (n=28)	p value
Duration from illness onset to first admission	7·0 (4·0–8·0)	7·0 (4·0–8·0)	7·0 (4·0–8·5)	0·87
Complications				
Acute respiratory distress syndrome	12 (29%)	11 (85%)	1 (4%)	<0·0001
RNAaemia	6 (15%)	2 (15%)	4 (14%)	0·93
Cycle threshold of RNAaemia	35·1 (34·7–35·1)	35·1 (35·1–35·1)	34·8 (34·1–35·4)	0·3545
Acute cardiac injury*	5 (12%)	4 (31%)	1 (4%)	0·017
Acute kidney injury	3 (7%)	3 (23%)	0	0·027
Secondary infection	4 (10%)	4 (31%)	0	0·0014
Shock	3 (7%)	3 (23%)	0	0·027
Treatment				
Antiviral therapy	38 (93%)	12 (92%)	26 (93%)	0·46
Antibiotic therapy	41 (100%)	13 (100%)	28 (100%)	NA
Use of corticosteroid	9 (22%)	6 (46%)	3 (11%)	0·013
Continuous renal replacement therapy	3 (7%)	3 (23%)	0	0·027
Oxygen support	..	..	..	<0·0001
Nasal cannula	27 (66%)	1 (8%)	26 (93%)	..
Non-invasive ventilation or high-flow nasal cannula	10 (24%)	8 (62%)	2 (7%)	..
Invasive mechanical ventilation	2 (5%)	2 (15%)	0	..
Invasive mechanical ventilation and ECMO	2 (5%)	2 (15%)	0	..
Prognosis	..	..	..	0·014
Hospitalisation	7 (17%)	1 (8%)	6 (21%)	..
Discharge	28 (68%)	7 (54%)	21 (75%)	..
Death	6 (15%)	5 (38%)	1 (4%)	..

Data are median (IQR) or n (%). p values are comparing ICU care and no ICU care. 2019-nCoV=2019 novel coronavirus. ICU=intensive care unit. NA=not applicable. ECMO=extracorporeal membrane oxygenation. *Defined as blood levels of hypersensitive troponin I above the 99th percentile upper reference limit (>28 pg/mL) or new abnormalities shown on electrocardiography and echocardiography.

Table 3: **Treatments and outcomes of patients infected with 2019-nCoV**

suggests that receiving corticosteroids did not have an effect on mortality, but rather delayed viral clearance.[27–29] Therefore, corticosteroids should not be routinely given systemically, according to WHO interim guidance.[30] Among our cohort of 41 laboratory-confirmed patients with 2019-nCoV infection, corticosteroids were given to very few non-ICU cases, and low-to-moderate dose of corticosteroids were given to less than half of severely ill patients with ARDS. Further evidence is urgently needed to assess whether systematic corticosteroid treatment is beneficial or harmful for patients infected with 2019-nCoV.

No antiviral treatment for coronavirus infection has been proven to be effective. In a historical control study,[31] the combination of lopinavir and ritonavir among SARS-CoV patients was associated with substantial clinical benefit (fewer adverse clinical outcomes). Arabi and colleagues initiated a placebo-controlled trial of interferon beta-1b, lopinavir, and ritonavir among patients with MERS infection in Saudi Arabia.[32] Preclinical evidence showed the potent efficacy of remdesivir (a broad-spectrum antiviral nucleotide prodrug) to treat MERS-CoV and SARS-CoV infections.[33,34] As 2019-nCoV is an emerging virus, an effective treatment has not been developed for disease resulting from this virus. Since the combination of lopinavir and ritonavir was already available in the designated hospital, a randomised controlled trial has been initiated quickly to assess the efficacy and safety of combined use of lopinavir and ritonavir in patients hospitalised with 2019-nCoV infection.

Our study has some limitations. First, for most of the 41 patients, the diagnosis was confirmed with lower respiratory tract specimens and no paired nasopharyngeal swabs were obtained to investigate the difference in the viral RNA detection rate between upper and lower respiratory tract specimens. Serological detection was not done to look for 2019-nCoV antibody rises in 18 patients with undetectable viral RNA. Second, with the limited number of cases, it is difficult to assess host risk factors for disease severity and mortality with multivariable-adjusted methods. This is a modest-sized case series of patients admitted to hospital; collection of standardised data for a larger cohort would help to further define the clinical presentation, natural history, and risk factors. Further studies in outpatient, primary care, or community settings are needed to get a full picture of the spectrum of clinical severity. At the same time, finding of statistical tests and p values should be interpreted with caution, and non-significant p values do not necessarily rule out difference between ICU and non-ICU patients. Third, since the causative pathogen has just been identified, kinetics of viral load and antibody titres were not available. Finally, the potential exposure bias in our study might account for why no paediatric or adolescent patients were reported in this cohort. More effort should be made to answer these questions in future studies.

Both SARS-CoV and MERS-CoV were believed to originate in bats, and these infections were transmitted directly to humans from market civets and dromedary camels, respectively.[35] Extensive research on SARS-CoV and MERS-CoV has driven the discovery of many SARS-like and MERS-like coronaviruses in bats. In 2013, Ge and colleagues[36] reported the whole genome sequence of a SARS-like coronavirus in bats with that ability to use human ACE2 as a receptor, thus having replication potentials in human cells.[37] 2019-nCoV still needs to be studied deeply in case it becomes a global health threat. Reliable quick pathogen tests and feasible differential diagnosis based on clinical description are crucial for clinicians in their first contact with suspected patients. Because of the pandemic potential of 2019-nCoV, careful surveillance is essential to monitor its future host adaption, viral evolution, infectivity, transmissibility, and pathogenicity.

Contributors

BC and JW had the idea for and designed the study and had full access to all data in the study and take responsibility for the integrity of the

data and the accuracy of the data analysis. YWa, GF, XG, JiXu, HL, and BC contributed to writing of the report. BC contributed to critical revision of the report. YWa, GF, XG, JiXu, and HL contributed to the statistical analysis. All authors contributed to data acquisition, data analysis, or data interpretation, and reviewed and approved the final version.

Declaration of interests

All authors declare no competing interests.

Data sharing

The data that support the findings of this study are available from the corresponding author on reasonable request. Participant data without names and identifiers will be made available after approval from the corresponding author and National Health Commission. After publication of study findings, the data will be available for others to request. The research team will provide an email address for communication once the data are approved to be shared with others. The proposal with detailed description of study objectives and statistical analysis plan will be needed for evaluation of the reasonability to request for our data. The corresponding author and National Health Commission will make a decision based on these materials. Additional materials may also be required during the process.

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Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study

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Summary

Background In December, 2019, a pneumonia associated with the 2019 novel coronavirus (2019-nCoV) emerged in Wuhan, China. We aimed to further clarify the epidemiological and clinical characteristics of 2019-nCoV pneumonia.

Methods In this retrospective, single-centre study, we included all confirmed cases of 2019-nCoV in Wuhan Jinyintan Hospital from Jan 1 to Jan 20, 2020. Cases were confirmed by real-time RT-PCR and were analysed for epidemiological, demographic, clinical, and radiological features and laboratory data. Outcomes were followed up until Jan 25, 2020.

Findings Of the 99 patients with 2019-nCoV pneumonia, 49 (49%) had a history of exposure to the Huanan seafood market. The average age of the patients was 55·5 years (SD 13·1), including 67 men and 32 women. 2019-nCoV was detected in all patients by real-time RT-PCR. 50 (51%) patients had chronic diseases. Patients had clinical manifestations of fever (82 [83%] patients), cough (81 [82%] patients), shortness of breath (31 [31%] patients), muscle ache (11 [11%] patients), confusion (nine [9%] patients), headache (eight [8%] patients), sore throat (five [5%] patients), rhinorrhoea (four [4%] patients), chest pain (two [2%] patients), diarrhoea (two [2%] patients), and nausea and vomiting (one [1%] patient). According to imaging examination, 74 (75%) patients showed bilateral pneumonia, 14 (14%) patients showed multiple mottling and ground-glass opacity, and one (1%) patient had pneumothorax. 17 (17%) patients developed acute respiratory distress syndrome and, among them, 11 (11%) patients worsened in a short period of time and died of multiple organ failure.

Interpretation The 2019-nCoV infection was of clustering onset, is more likely to affect older males with comorbidities, and can result in severe and even fatal respiratory diseases such as acute respiratory distress syndrome. In general, characteristics of patients who died were in line with the MuLBSTA score, an early warning model for predicting mortality in viral pneumonia. Further investigation is needed to explore the applicability of the MuLBSTA score in predicting the risk of mortality in 2019-nCoV infection.

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Introduction

Since Dec 8, 2019, several cases of pneumonia of unknown aetiology have been reported in Wuhan, Hubei province, China.[1–3] Most patients worked at or lived around the local Huanan seafood wholesale market, where live animals were also on sale. In the early stages of this pneumonia, severe acute respiratory infection symptoms occurred, with some patients rapidly developing acute respiratory distress syndrome (ARDS), acute respiratory failure, and other serious complications. On Jan 7, a novel coronavirus was identified by the Chinese Center for Disease Control and Prevention (CDC) from the throat swab sample of a patient, and was subsequently named 2019-nCoV by WHO.[4]

Coronaviruses can cause multiple system infections in various animals and mainly respiratory tract infections in humans, such as severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS).[5–7] Most patients have mild symptoms and good prognosis. So far, a few patients with 2019-nCoV have developed severe pneumonia, pulmonary oedema, ARDS, or multiple organ failure and have died. All costs of 2019-nCoV treatment are covered by medical insurance in China.

At present, information regarding the epidemiology and clinical features of pneumonia caused by 2019-nCoV is scarce.[1–3] In this study, we did a comprehensive exploration of the epidemiology and clinical features of 99 patients with confirmed 2019-nCoV pneumonia admitted to Jinyintan Hospital, Wuhan, which admitted the first patients with 2019-nCoV to be reported on.

Methods

Study design and participants

For this retrospective, single-centre study, we recruited patients from Jan 1 to Jan 20, 2020, at Jinyintan Hospital in Wuhan, China. Jinyintan Hospital is a hospital for adults (ie, aged ≥14 years) specialising in infectious diseases. According to the arrangements put in place by

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Research in context

Evidence before this study

We searched PubMed on Jan 25, 2020, for articles that describe the epidemiological and clinical characteristics of the 2019 novel coronavirus (2019-nCoV) in Wuhan, China, using the search terms "novel coronavirus" and "pneumonia" with no language or time restrictions. Previously published research discussed the epidemiological and clinical characteristics of severe acute respiratory syndrome coronavirus or Middle East respiratory syndrome coronavirus, and primary study for the evolution of the novel coronavirus from Wuhan. The only report of clinical features of patients infected with 2019-nCoV was published on Jan 24, 2020, with 41 cases included.

Added value of this study

We have obtained data on 99 patients in Wuhan, China, to further explore the epidemiology and clinical features of 2019-nCoV. This study is, to our knowledge, the largest case series to date of 2019-nCoV infections, with 99 patients who were transferred to Jinyintan Hospital from other hospitals all over Wuhan, and provides further information on the demographic, clinical, epidemiological, and laboratory features of patients. It presents the latest status of 2019-nCoV infection in China and is an extended investigation of the previous report, with 58 extra cases and more details on combined bacterial and fungal infections. In all patients admitted with medical comorbidities of 2019-nCoV, a wide range of clinical manifestations can be seen and are associated with substantial outcomes.

Implications of all the available evidence

The 2019-nCoV infection was of clustering onset, is more likely to affect older men with comorbidities, and could result in severe and even fatal respiratory diseases such as acute respiratory distress syndrome. Early identification and timely treatment of critical cases of 2019-nCoV are important. Effective life support and active treatment of complications should be provided to effectively reduce the severity of patients' conditions and prevent the spread of this new coronavirus in China and worldwide.

the Chinese Government, adult patients were admitted centrally to the hospital from the whole of Wuhan without selectivity. All patients at Jinyintan Hospital who were diagnosed as having 2019-nCoV pneumonia according to WHO interim guidance were enrolled in this study.[4] All the data of included cases have been shared with WHO. The study was approved by Jinyintan Hospital Ethics Committee and written informed consent was obtained from patients involved before enrolment when data were collected retrospectively.

Procedures

We obtained epidemiological, demographic, clinical, laboratory, management, and outcome data from patients' medical records. Clinical outcomes were followed up to Jan 25, 2020. If data were missing from the records or clarification was needed, we obtained data by direct communication with attending doctors and other health-care providers. All data were checked by two physicians (XD and YQ).

Laboratory confirmation of 2019-nCoV was done in four different institutions: the Chinese CDC, the Chinese Academy of Medical Science, Academy of Military Medical Sciences, and Wuhan Institute of Virology, Chinese Academy of Sciences. Throat-swab specimens from the upper respiratory tract that were obtained from all patients at admission were maintained in viral-transport medium. 2019-nCoV was confirmed by real-time RT-PCR using the same protocol described previously.[3] RT-PCR detection reagents were provided by the four institutions. Other respiratory viruses including influenza A virus (H1N1, H3N2, H7N9), influenza B virus, respiratory syncytial virus, parainfluenza virus, adenovirus, SARS coronavirus (SARS-CoV), and MERS coronavirus (MERS-CoV) were also examined with real-time RT-PCR

Sputum or endotracheal aspirates were obtained at admission for identification of possible causative bacteria or fungi. Additionally, all patients were given chest x-rays or chest CT.

Outcomes

We describe epidemiological data (ie, short-term [occasional visits] and long-term [worked at or lived near] exposure to Huanan seafood market); demographics; signs and symptoms on admission; comorbidity; laboratory results; co-infection with other respiratory pathogens; chest radiography and CT findings; treatment received for 2019-nCoV; and clinical outcomes.

Statistical analysis

We present continuous measurements as mean (SD) if they are normally distributed or median (IQR) if they are not, and categorical variables as count (%). For laboratory results, we also assessed whether the measurements were outside the normal range. We used SPSS (version 26.0) for all analyses.

Role of the funding source

The funder of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report. The corresponding authors had full access to all the data in the study and had final responsibility for the decision to submit for publication.

Results

99 patients with 2019-nCoV were included in this study, two of whom were husband and wife. In total, 49 (49%)

patients were clustered and had a history of exposure to the Huanan seafood market. Among them, there were 47 patients with long-term exposure history, most of whom were salesmen or market managers, and two patients with short-term exposure history, who were shoppers. None of the patients were medical staff. Most patients were men, with a mean age of 55·5 years (SD 13·1; table 1). 50 (51%) patients had chronic diseases, including cardiovascular and cerebrovascular diseases, endocrine system disease, digestive system disease, respiratory system disease, malignant tumour, and nervous system disease (table 1).

On admission, most patients had fever or cough and a third of patients had shortness of breath (table 2). Other symptoms included muscle ache, headache, confusion, chest pain, and diarrhoea (table 2). Many patients presented with organ function damage, including 17 (17%) with ARDS, eight (8%) with acute respiratory injury, three (3%) with acute renal injury, four (4%) with septic shock, and one (1%) with ventilator-associated pneumonia (table 2).

On admission, leucocytes were below the normal range in nine (9%) patients and above the normal range in 24 (24%) patients (table 3). 38 (38%) patients had neutrophils above the normal range. Lymphocytes and haemoglobin were below the normal range in many

	Patients (n=99)
Age, years	
Mean (SD)	55·5 (13·1)
Range	21–82
≤39	10 (10%)
40–49	22 (22%)
50–59	30 (30%)
60–69	22 (22%)
≥70	15 (15%)
Sex	
Female	32 (32%)
Male	67 (68%)
Occupation	
Agricultural worker	2 (2%)
Self-employed	63 (64%)
Employee	15 (15%)
Retired	19 (19%)
Exposure to Huanan seafood market*	49 (49%)
Long-term exposure history	47 (47%)
Short-term exposure history	2 (2%)
Chronic medical illness	50 (51%)
Cardiovascular and cerebrovascular diseases	40 (40%)
Digestive system disease	11 (11%)
Endocrine system disease†	13 (13%)
Malignant tumour	1 (1%)
Nervous system disease	1 (1%)
Respiratory system disease	1 (1%)
Admission to intensive care unit	23 (23%)
Clinical outcome	
Remained in hospital	57 (58%)
Discharged	31 (31%)
Died	11 (11%)

Data are n (%) unless specified otherwise. 2019-nCoV=2019 novel coronavirus. *Long-term exposure is having worked at or lived in or around Huanan seafood market, whereas short-term exposure is having been to Huanan seafood market occasionally. †12 were diabetic.

Table 1: **Demographics, baseline characteristics, and clinical outcomes of 99 patients admitted to Wuhan Jinyintan Hospital (Jan 1–20, 2020) with 2019-nCoV pneumonia**

	Patients (n=99)
Signs and symptoms at admission	
Fever	82 (83%)
Cough	81 (82%)
Shortness of breath	31 (31%)
Muscle ache	11 (11%)
Confusion	9 (9%)
Headache	8 (8%)
Sore throat	5 (5%)
Rhinorrhoea	4 (4%)
Chest pain	2 (2%)
Diarrhoea	2 (2%)
Nausea and vomiting	1 (1%)
More than one sign or symptom	89 (90%)
Fever, cough, and shortness of breath	15 (15%)
Comorbid conditions	
Any	33 (33%)
ARDS	17 (17%)
Acute renal injury	3 (3%)
Acute respiratory injury	8 (8%)
Septic shock	4 (4%)
Ventilator-associated pneumonia	1 (1%)
Chest x-ray and CT findings	
Unilateral pneumonia	25 (25%)
Bilateral pneumonia	74 (75%)
Multiple mottling and ground-glass opacity	14 (14%)
Treatment	
Oxygen therapy	75 (76%)
Mechanical ventilation	
Non-invasive (ie, face mask)	13 (13%)
Invasive	4 (4%)
CRRT	9 (9%)
ECMO	3 (3%)
Antibiotic treatment	70 (71%)
Antifungal treatment	15 (15%)
Antiviral treatment	75 (76%)
Glucocorticoids	19 (19%)
Intravenous immunoglobulin therapy	27 (27%)

2019-nCoV=2019 novel coronavirus. ARDS=acute respiratory distress syndrome. ECMO=extracorporeal membrane oxygenation. CRRT=continuous renal replacement therapy.

Table 2: **Clinical characteristics and treatment of patients with 2019-nCoV pneumonia**

	Patients (n=99)
Blood routine	
Leucocytes (×10⁹ per L; normal range 3·5–9·5)	7·5 (3·6)
Increased	24 (24%)
Decreased	9 (9%)
Neutrophils (×10⁹ per L; normal range 1·8–6·3)	5·0 (3·3–8·1)
Increased	38 (38%)
Lymphocytes (×10⁹ per L; normal range 1·1–3·2)	0·9 (0·5)
Decreased	35 (35%)
Platelets (×10⁹ per L; normal range 125·0–350·0)	213·5 (79·1)
Increased	4 (4%)
Decreased	12 (12%)
Haemoglobin (g/L; normal range 130·0–175·0)	129·8 (14·8)
Decreased	50 (51%)
Coagulation function	
Activated partial thromboplastin time (s; normal range 21·0–37·0)	27·3 (10·2)
Increased	6 (6%)
Decreased	16 (16%)
Prothrombin time (s; normal range 10·5–13·5)	11·3 (1·9)
Increased	5 (5%)
Decreased	30 (30%)
D-dimer (μg/L; normal range 0·0–1·5)	0·9 (0·5–2·8)
Increased	36 (36%)
Blood biochemistry	
Albumin (g/L; normal range 40·0–55·0)	31·6 (4·0)
Decreased	97 (98%)
Alanine aminotransferase (U/L; normal range 9·0–50·0)	39·0 (22·0–53·0)
Increased	28 (28%)
Aspartate aminotransferase (U/L; normal range 15·0–40·0)	34·0 (26·0–48·0)
Increased	35 (35%)
Total bilirubin (μmol/L; normal range 0·0–21·0)	15·1 (7·3)
Increased	18 (18%)
Blood urea nitrogen (mmol/L; normal range 3·6–9·5)	5·9 (2·6)
Increased	6 (6%)
Decreased	17 (17%)
Serum creatinine (μmol/L; normal range 57·0–111·0)	75·6 (25·0)
Increased	3 (3%)
Decreased	21 (21%)
Creatine kinase (U/L; normal range 50·0–310·0)	85·0 (51·0–184·0)
Increased	13 (13%)
Decreased	23 (23%)
Lactate dehydrogenase (U/L; normal range 120·0–250·0)	336·0 (260·0–447·0)
Increased	75 (76%)
Myoglobin (ng/mL; normal range 0·0–146·9)	49·5 (32·2–99·8)
Increased	15 (15%)
Glucose (mmol/L; normal range 3·9–6·1)	7·4 (3·4)
Increased	51 (52%)
Decreased	1 (1%)

(Table 3 continues in next column)

(Continued from previous column)

	Patients (n=99)
Infection-related biomarkers	
Procalcitonin (ng/mL; normal range 0·0–5·0)	0·5 (1·1)
Increased	6 (6%)
Interleukin-6 (pg/mL; normal range 0·0–7·0)	7·9 (6·1–10·6)
Increased	51 (52%)
Erythrocyte sedimentation rate (mm/h; normal range 0·0–15·0)	49·9 (23·4)
Increased	84 (85%)
Serum ferritin (ng/mL; normal range 21·0–274·7)	808·7 (490·7)
Increased	62 (63%)
C-reactive protein (mg/L; normal range 0·0–5·0)*	51·4 (41·8)
Increased	63/73 (86%)
Co-infection	
Other viruses	0
Bacteria	1 (1%)
Fungus	4 (4%)

Data are n (%), n/N (%), mean (SD), and median (IQR). Increased means over the upper limit of the normal range and decreased means below the lower limit of the normal range. 2019-nCoV=2019 novel coronavirus. *Data available for 73 patients.

Table 3: **Laboratory results of patients with 2019-nCoV pneumonia**

patients (table 3). Platelets were below the normal range in 12 (12%) patients and above the normal range in four (4%). 43 patients had differing degrees of liver function abnormality, with alanine aminotransferase (ALT) or aspartate aminotransferase (AST) above the normal range (table 3); one patient had severe liver function damage (ALT 7590 U/L, AST 1445 U/L). Most patients had abnormal myocardial zymogram, which showed the elevation of creatine kinase in 13 (13%) patients and the elevation of lactate dehydrogenase in 75 (76%) patients, one of whom also showed abnormal creatine kinase (6280 U/L) and lactate dehydrogenase (20740 U/L). Seven (7%) patients had different degrees of renal function damage, with elevated blood urea nitrogen or serum creatinine. Regarding the infection index, procalcitonin was above the normal range in six (6%) patients. Most patients had serum ferritin above the normal range (table 3). 73 patients were tested for C-reactive protein, most of whom had levels above the normal range (table 3).

All patients were tested for nine respiratory pathogens and the nucleic acid of influenza viruses A and B. Bacteria and fungi culture were done at the same time. We did not find other respiratory viruses in any of the patients. *Acinetobacter baumannii*, *Klebsiella pneumoniae*, and *Aspergillus flavus* were all cultured in one patient. *A baumannii* turned out to be highly resistant to antibiotics. One case of fungal infection was diagnosed as *Candida glabrata* and three cases of fungal infection were diagnosed as *Candida albicans*.

According to chest x-ray and CT, 74 (75%) patients showed bilateral pneumonia (75%) with just 25 (25%)

patients showing unilateral pneumonia (table 2). 14 (14%) patients showed multiple mottling and ground-glass opacity (table 2; figure). Additionally, pneumothorax occurred in one (1%) patient.

All patients were treated in isolation. 75 (76%) patients received antiviral treatment, including oseltamivir (75 mg every 12 h, orally), ganciclovir (0·25 g every 12 h, intravenously), and lopinavir and ritonavir tablets (500 mg twice daily, orally). The duration of antiviral treatment was 3–14 days (median 3 days [IQR 3–6]).

Most patients were given antibiotic treatment (table 2); 25 (25%) patients were treated with a single antibiotic and 45 (45%) patients were given combination therapy. The antibiotics used generally covered common pathogens and some atypical pathogens; when secondary bacterial infection occurred, medication was administered according to the results of bacterial culture and drug sensitivity. The antibiotics used were cephalosporins, quinolones, carbapenems, tigecycline against methicillin-resistant *Staphylococcus aureus*, linezolid, and antifungal drugs. The duration of antibiotic treatment was 3–17 days (median 5 days [IQR 3–7]). 19 (19%) patients were also treated with methylprednisolone sodium succinate, methylprednisolone, and dexamethasone for 3–15 days (median 5 [3–7]).

13 patients used non-invasive ventilator mechanical ventilation for 4–22 days (median 9 days [IQR 7–19]). Four patients used an invasive ventilator to assist ventilation for 3–20 days (median 17 [12–19]). The ventilator adopted P-SIMV mode, the inhaled oxygen concentration was 35–100%, and the positive end-expiratory pressure was 6–12 cm H_2O. All four patients were still using ventilators at data cutoff. Moreover, nine (9%) patients received continuous blood purification due to renal failure and three (3%) patients were treated with extracorporeal membrane oxygenation (ECMO; table 2).

By the end of Jan 25, 31 (31%) patients had been discharged and 11 (11%) patients had died; all other patients were still in hospital (table 1). The first two deaths were a 61-year-old man (patient 1) and a 69-year-old man (patient 2). They had no previous chronic underlying disease but had a long history of smoking. Patient 1 was transferred to Jinyintan Hospital and diagnosed with severe pneumonia and ARDS. He was immediately admitted to the intensive care unit (ICU) and given an intubated ventilator-assisted breathing therapy. Later, the patient, having developed severe respiratory failure, heart failure, and sepsis, experienced a sudden cardiac arrest on the 11th day of admission and was declared dead. Patient 2 had severe pneumonia and ARDS after admission. The patient was transferred to the ICU and given ventilator-assisted breathing, and received anti-infection and ECMO treatment after admission. The patient's hypoxaemia remained unresolved. On the ninth day of admission, the patient died of severe pneumonia, septic shock, and respiratory failure. The intervals

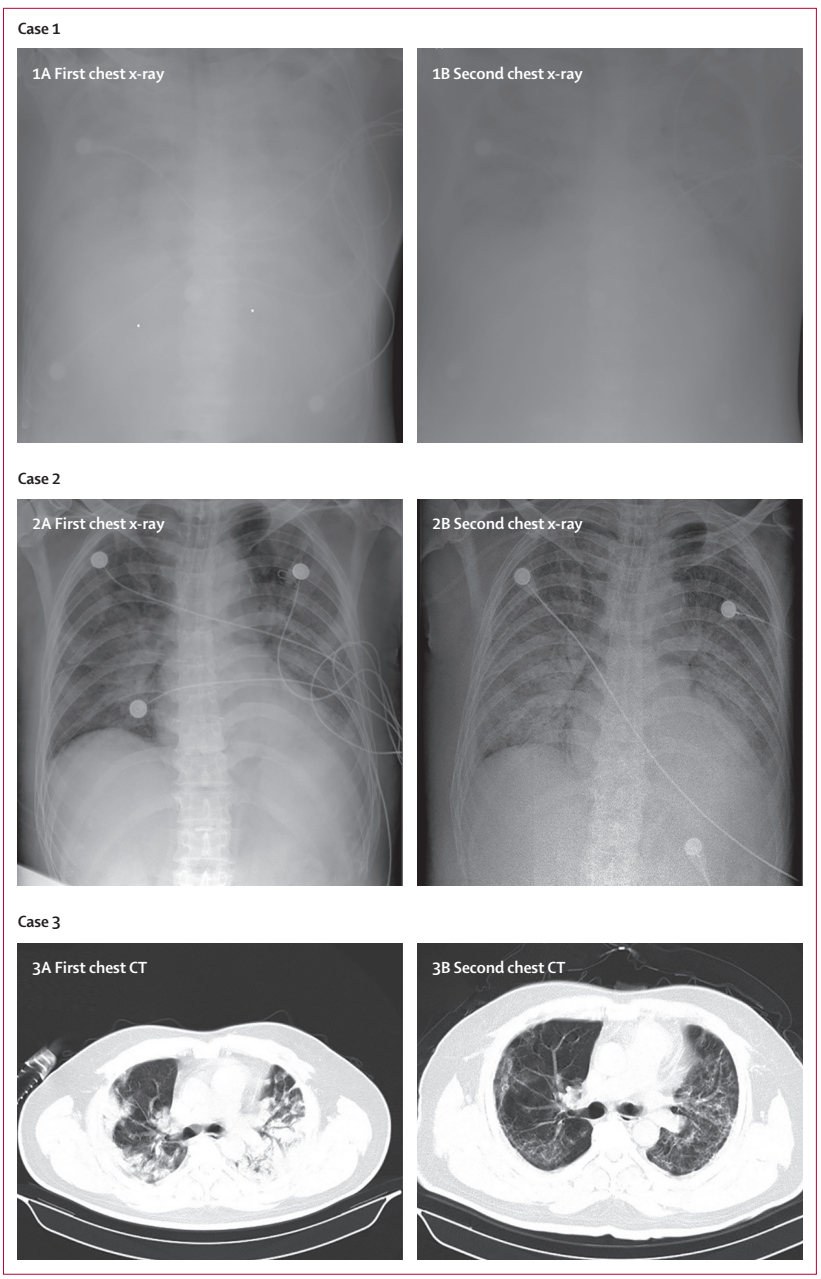

Figure: **Chest x-rays and chest CTs of three patients**
Case 1: chest x-ray was obtained on Jan 1 (1A). The brightness of both lungs was diffusely decreased, showing a large area of patchy shadow with uneven density. Tracheal intubation was seen in the trachea and the heart shadow outline was not clear. The catheter shadow was seen from the right axilla to the mediastinum. Bilateral diaphragmatic surface and costal diaphragmatic angle were not clear, and chest x-ray on Jan 2 showed worse status (1B). Case 2: chest x-ray obtained on Jan 6 (2A). The brightness of both lungs was decreased and multiple patchy shadows were observed; edges were blurred, and large ground-glass opacity and condensation shadows were mainly on the lower right lobe. Tracheal intubation could be seen in the trachea. Heart shadow roughly presents in the normal range. On the left side, the diaphragmatic surface is not clearly displayed. The right side of the diaphragmatic surface was light and smooth and rib phrenic angle was less sharp. Chest x-ray on Jan 10 showed worse status (2B). Case 3: chest CT obtained on Jan 1 (3A) showed mass shadows of high density in both lungs. Bright bronchogram is seen in the lung tissue area of the lesion, which is also called bronchoinflation sign. Chest CT on Jan 15 showed improved status (3B).

between the onset of symptoms and the use of ventilator-assisted breathing in the two patients were 3 days and 10 days, respectively. The course of the disease and lung lesions progressed rapidly in both patients, with both developing multiple organ failure in a short time. The deaths of these two patients were consistent with the MuLBSTA score, an early warning model for predicting mortality in viral pneumonia.[8]

Of the remaining nine patients who died, eight patients had lymphopenia, seven had bilateral pneumonia, five were older than 60 years, three had hypertension, and one was a heavy smoker.

Discussion

This is an extended descriptive study on the epidemiology and clinical characteristics of the 2019-nCoV, including data on 99 patients who were transferred to Jinyintan Hospital from other hospitals across Wuhan. It presents the latest status of the 2019-nCoV infection in China and adds details on combined bacterial and fungal infections.

Human coronavirus is one of the main pathogens of respiratory infection. The two highly pathogenic viruses, SARS-CoV and MERS-CoV, cause severe respiratory syndrome in humans and four other human coronaviruses (HCoV-OC43, HCoV-229E, HCoV-NL63, HCoV-HKU1) induce mild upper respiratory disease. The major SARS-CoV outbreak involving 8422 patients occurred during 2002–03 and spread to 29 countries globally.[9,10] MERS-CoV emerged in Middle Eastern countries in 2012 but was imported into China.[11,12] The sequence of 2019-nCoV is relatively different from the six other coronavirus subtypes but can be classified as betacoronavirus. SARS-CoV and MERS-CoV can be transmitted directly to humans from civets and dromedary camels, respectively, and both viruses originate in bats, but the origin of 2019-nCoV needs further investigation.[13–15] 2019-nCoV also has enveloped virions that measure approximately 50–200 nm in diameter with a single positive-sense RNA genome.[16] Club-shaped glycoprotein spikes in the envelope give the virus a crown-like or coronal appearance. Transmission rates are unknown for 2019-nCoV; however, there is evidence of human-to-human transmission. None of the 99 patients we examined were medical staff, but 15 medical workers have been reported with 2019-nCoV infection, 14 of whom are assumed to have been infected by the same patient.[17] The mortality of SARS-CoV has been reported as more than 10% and MERS-CoV at more than 35%.[5,18] At data cutoff for this study, mortality of the 99 included patients infected by 2019-nCoV was 11%, resembling that in a previous study.[3] However, additional deaths might occur in those still hospitalised.

We observed a greater number of men than women in the 99 cases of 2019-nCoV infection. MERS-CoV and SARS-CoV have also been found to infect more males than females.[19,20] The reduced susceptibility of females to viral infections could be attributed to the protection from X chromosome and sex hormones, which play an important role in innate and adaptive immunity.[21] Additionally, about half of patients infected by 2019-nCoV had chronic underlying diseases, mainly cardiovascular and cerebrovascular diseases and diabetes; this is similar to MERS-CoV.[19] Our results suggest that 2019-nCoV is more likely to infect older adult males with chronic comorbidities as a result of the weaker immune functions of these patients.[19–22]

Some patients, especially severely ill ones, had co-infections of bacteria and fungi. Common bacterial cultures of patients with secondary infections included *A baumannii*, *K pneumoniae*, *A flavus*, *C glabrata*, and *C albicans*.[8] The high drug resistance rate of *A baumannii* can cause difficulties with anti-infective treatment, leading to higher possibility of developing septic shock.[23] For severe mixed infections, in addition to the virulence factors of pathogens, the host's immune status is also one of the important factors. Old age, obesity, and presence of comorbidity might be associated with increased mortality.[24] When populations with low immune function, such as older people, diabetics, people with HIV infection, people with long-term use of immunosuppressive agents, and pregnant women, are infected with 2019-nCoV, prompt administration of antibiotics to prevent infection and strengthening of immune support treatment might reduce complications and mortality.

In terms of laboratory tests, the absolute value of lymphocytes in most patients was reduced. This result suggests that 2019-nCoV might mainly act on lymphocytes, especially T lymphocytes, as does SARS-CoV. Virus particles spread through the respiratory mucosa and infect other cells, induce a cytokine storm in the body, generate a series of immune responses, and cause changes in peripheral white blood cells and immune cells such as lymphocytes. Some patients progressed rapidly with ARDS and septic shock, which was eventually followed by multiple organ failure. Therefore, early identification and timely treatment of critical cases is of crucial importance. Use of intravenous immunoglobulin is recommended to enhance the ability of anti-infection for severely ill patients and steroids (methylprednisolone 1–2 mg/kg per day) are recommended for patients with ARDS, for as short a duration of treatment as possible. Some studies suggest that a substantial decrease in the total number of lymphocytes indicates that coronavirus consumes many immune cells and inhibits the body's cellular immune function. Damage to T lymphocytes might be an important factor leading to exacerbations of patients.[25] The low absolute value of lymphocytes could be used as a reference index in the diagnosis of new coronavirus infections in the clinic.

In general, the characteristics of patients who died were in line with the early warning model for predicting mortality in viral pneumonia in our previous study: the MuLBSTA score.[8] The MuLBSTA score system contains six indexes, which are multilobular infiltration, lymphopenia, bacterial

co-infection, smoking history, hypertension, and age. Further investigation is needed to explore the applicability of the MuLBSTA score in predicting the risk of mortality in 2019-nCoV infection.

This study has several limitations. First, only 99 patients with confirmed 2019-nCoV were included; suspected but undiagnosed cases were ruled out in the analyses. It would be better to include as many patients as possible in Wuhan, in other cities in China, and even in other countries to get a more comprehensive understanding of 2019-nCoV. Second, more detailed patient information, particularly regarding clinical outcomes, was unavailable at the time of analysis; however, the data in this study permit an early assessment of the epidemiological and clinical characteristics of 2019-nCoV pneumonia in Wuhan, China.

In conclusion, the infection of 2019-nCoV was of clustering onset, is more likely to infect older men with comorbidities, and can result in severe and even fatal respiratory diseases such as ARDS.

Contributors

NC, XD, FG, YH, YQ, JW, YL, YW, JX, TY, and LZ collected the epidemiological and clinical data and processed statistical data. NC and MZ drafted the manuscript. JQ and XZ revised the final manuscript. XZ is responsible for summarising all data related to the virus. LZ is responsible for summarising all epidemiological and clinical data.

Declaration of interests

We declare no competing interests.

Acknowledgments

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From: Alan Dorsinville
Subject: CLUE: Additional Article for Clinical Characteristics of COVID-19
Date: Friday, February 28, 2020 12:20:24 PM
Attachments: Japan MOH Diamond Princess COVIF-19 Field Briefing 2_19_2020.docx
MN_standards_scarce_resources.pdf
Clinical 138 hospitalized nCoV Wuhan_JAMA 2020_Wang.pdf
clinical features 2019-nCoV_Lancet 2020_Huang.pdf
Epi and clinical 99 cases nCoV_Lancet 2020_Chen.pdf

Hello all,

Resending documents from earlier for new CLUE members who joined this week along with **link** to new article that provides great clinical overview for COVID-19.

Attached is the report on the Diamond Princess cruise ship, Minnesota's strategies for scarce resources, and several other articles about COVID-19 symptoms. You can also refer to the CDC site for a summary of clinical presentation.

Thank you,
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Published: 19 February 2020

Field Briefing: Diamond Princess COVID-19 Cases

Background:

A cruise ship, named the Diamond Princess, had travel that originated in Yokohama on 20 January and included stops in Japan (Kagoshima), Hong Kong, Vietnam, Taiwan and Japan (Okinawa), before arriving back in Yokohama on 3 February. During this time, a passenger who disembarked on 25 January in Hong Kong, has presented with cough since 19 Jan and was confirmed positive for Novel coronavirus on 1 February. The Japanese government requested that the Diamond Princess stay at port, with no passengers or crew disembarking, in Yokohama when it arrived on 3 February. During 3-4 February, health status of all passengers and crew members were checked by questionnaire by quarantine officers, and respiratory specimens were taken from symptomatic passengers, crew, and their close contacts to test for Novel coronavirus. On 5 February, a lab-confirmed case of COVID-19 led to the quarantine of the Diamond Princess for 14 days beginning at 7am, with passengers requested to stay in their cabins. As of 5 February, there was a total of 3711 individuals on board the Diamond Princess, with 2666 passengers and 1045 crew members.

Quarantine Measures:

At the beginning of the quarantine period, crew members were provided with personal protective equipment (PPE) and instructed on appropriate IPC practices. On 7 February, passengers were provided thermometers for self-monitoring of body temperature, with instructions on calling a "Fever Call Center", if they had a fever above 37.5C. Passengers who developed fever were referred to the medical team in charge and were tested for Novel coronavirus. Passengers who developed serious illness, including non-COVID-19 morbidities, were referred the ship's Medical Center, which provided essential health services. Those passengers with lab-confirmed COVID-19 were disembarked and transferred to an isolation ward at healthcare facilities. Their cabinmates were defined as "close contacts" and were therefore tested. If positive, they were also confirmed as a case and disembarked to a healthcare facility. If they tested negative, they remained on board but with a 14-day quarantine period reset after the last contact with the confirmed case. All crew and healthcare staff onboard the Diamond Princess were instructed to follow international guidance on infection prevention and control. To maintain operations of the ship, some crew continued to perform essential, limited services while the ship remained in quarantine. This led to those crew members not remaining fully isolated, in the same manner as passengers, during the quarantine period.

Data Collection:

Initially, only symptomatic cases and close contacts were being tested for COVID-19. This was changed on 11 February, due to the expansion of laboratory capacity, with quarantine officers systematically collecting respiratory specimens from all passengers by age group, starting with those 80 years old and older as well as individuals with co-morbidities, such as diabetes or a heart condition. Respiratory specimens collected were tested via PCR for confirmation of Novel coronavirus. Epidemiological data collected was initially limited due to the emergency nature of the quarantine and included data on onset of symptoms, date of lab confirmation, and close contacts. A confirmed case of COVID-19, for this report, is anyone, passenger or crew, who had a positive PCR test for Novel coronavirus, independent of their symptom presentation. In most cases, the "population on board," refers to the 3,711 passenger and crew aboard Diamond Princess on 5 February.

Preliminary Results:

As of 18 February, there have been 531 confirmed cases (14.3% of all individuals on board on 5 February), including 65 crew and 466 passengers. A total 2404 respiratory specimens were tested, and 542 were positive (22.5), including double tests. Among confirmed COVID-19 cases with recorded symptom onset (n=184), there were 33 (18%) with onset dates before 6 February, which was the first full day of quarantine, and 151 (82%) with onset dates on or after the 6th. A total 255 (48%) of the confirmed cases were asymptomatic when the respiratory specimen was collected. Of these, 8 were crew and 247 were passengers. (Information on development of symptoms after disembarkation of asymptomatic confirmed cases is not currently available.) A total 23 passengers with reported onset dates were confirmed after another passenger in the same cabin had been confirmed. From 13 February to now, 81% of cases among confirmed passengers or crew with reported onset dates (n=22) occurred in crew (n=13) or passengers from cabins with a previously confirmed case (n=5).

Preliminary Conclusions:

Based on the number of confirmed cases by onset date, there is clear evidence that substantial transmission of COVID-19 had been occurring prior to implementation of quarantine on the Diamond Princess on 5 February (see also febrile patient visits to the on-board clinic below). The decline in the number of confirmed cases, based on reported onset dates, implies that the quarantine intervention was effective in reducing transmission among passengers. Transmission toward the end of the quarantine period, which is scheduled to end for most passengers on 19 Feb, appears to have occurred mostly among crew or within passenger cabins. It should be noted that due to the nature of the ship, individual isolation of all those aboard was not possible. Sharing of cabins was necessary, and some crew had to continue to perform essential duties for the functioning of the vessel with passengers aboard.

Recent confirmations of asymptomatic cases can be explained by the systematic testing of passengers that began around 14 Feb. Although some of these cases may have been secondary cases within a given cabin, it is difficult to know when transmission occurred. They may have been infected before the quarantine began. Nevertheless, these asymptomatic cases have been disembarked and their cabinmates have been defined as close contacts with their 14-day isolation reset on the day the asymptomatic case was disembarked. The systematic testing of asymptomatic cases was useful in screening these persons before allowing them to disembark.

Preliminary Actions/Guidance:

Those persons (mostly passengers) who have completed the 14-day quarantine, have not tested positive, and pass a medical check on the 14th day, will be disembarked on the 19th.

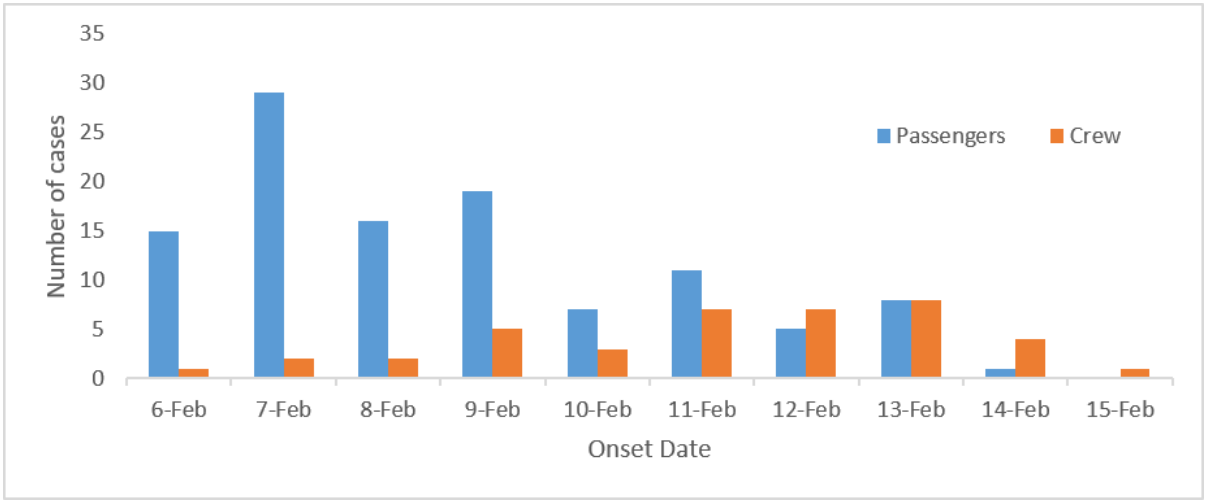
Those individuals who were in contact with a confirmed case will be put in isolation until they complete the 14-day period beginning after the last day of their suspected contact with a case. This includes a large proportion of the crew members of the Diamond Princess. The crew performed essential tasks that allowed the quarantine to occur successfully for 14 days and should be appreciated for their service.

As the persons aboard were exposed to a high-risk environment for a prolonged period, all persons who disembark should be careful about the health conditions for the time being and immediately report to a public health center if they develop symptoms.

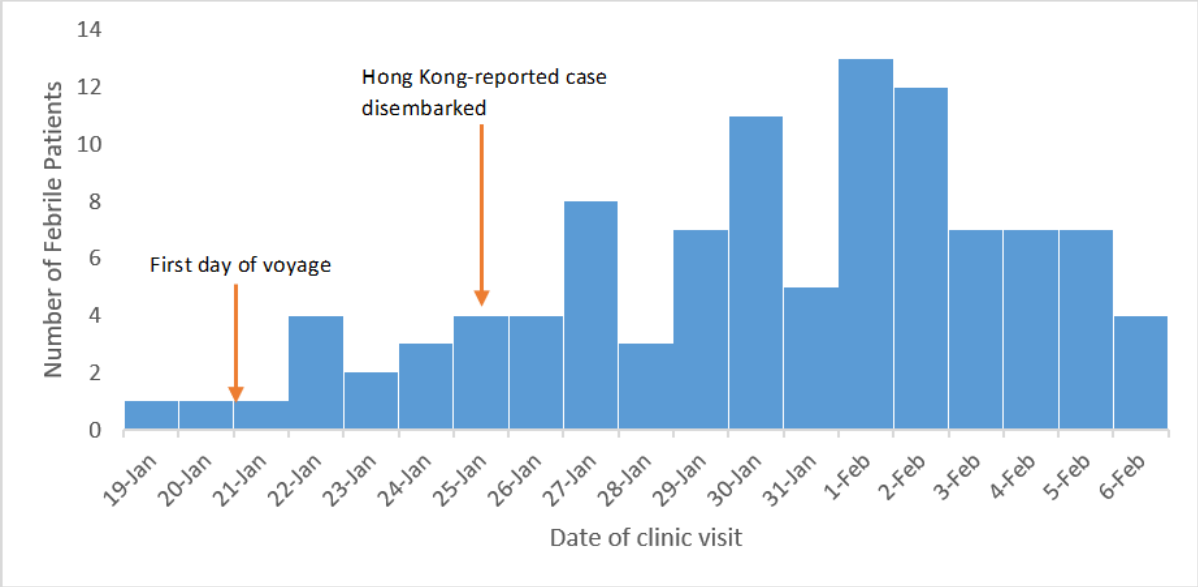
Percent of persons aboard who were confirmed with COVID-19 by age group and symptom status at the time of specimen collection.

Age group	Symptomatic confirmed cases (%)	Asymptomatic confirmed cases (%)	Total confirmed cases (%)	Persons aboard on 5 February
00-09	0(0)	1(6)	1(6)	16
10-19	1(4)	1(4)	2(9)	23
20-29	18(5)	2(1)	20(6)	347
30-39	18(4)	5(1)	23(5)	429
40-49	18(5)	7(2)	25(8)	333
50-59	27(7)	22(6)	49(12)	398
60-69	73(8)	56(6)	129(14)	924
70-79	92(9)	136(13)	228(22)	1015
80-89	27(13)	25(12)	52(24)	215
90-99	2(18)	0(0)	2(18)	11
Total	**276(7)**	**255(7)**	**531(14)**	**3711**

Number of confirmed COVID-19 cases with reported onset dates, by onset date, aboard Diamond Princess, 6 – 17 February 2020 (n=151)



Febrile Patients, by date of clinic visit, Diamond Princess clinic, 19 Jan - 2 Feb 2020 (n=79)



Characteristics of COVID-19 Cases with reported on-set dates of 6 – 17 Feb 2020 (n=53).

Date of Onset (n cases)	Crew	Passengers	Passengers from cabins with another confirmed case (%)
17 Feb (0)	0	0	0
16 Feb (0)	0	0	0
15 Feb (1)	1	0	0
14 Feb (5)	4	1	1 (100%) [0]
13 Feb (16)	8	8	4 (50%) [2]
12 Feb (12)	7	5	0 (00%) [2]
11 Feb (18)	7	11	3 (27%) [1]
10 Feb (10)	3	7	3 (43%) [1]
9 Feb (24)	5	19	6 (32%) [9]
8 Feb (18)	2	16	1 (6%) [3]
7 Feb (31)	2	29	4 (14%) [10]
6 Feb (16)	1	15	1 (7%) [6]
Total	**40**	**111**	**23 (21%) [34]**

Note, the number in brackets represents the number of additional confirmed cases in the same cabin with unknown onset date.

PATIENT CARE
STRATEGIES FOR SCARCE RESOURCE SITUATIONS

MINNESOTA MDH DEPARTMENT OF HEALTH

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PATIENT CARE
STRATEGIES FOR SCARCE RESOURCE SITUATIONS

Summary Card

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

Potential trigger events:	•Mass Casualty Incident (MCI) •Infrastructure damage/loss •Pandemic/Epidemic	•Supplier shortage •Recall/contamination of product •Isolation of facility due to access problems (flooding, etc)

How to use this card set:

1. Recognize or anticipate resource shortfall
2. Implement appropriate incident management system and plans; assign subject matter experts (technical specialists) to problem
3. Determine degree of shortfall, expected demand, and duration; assess ability to obtain needed resources via local, regional, or national vendors or partners
4. Find category of resource on index
5. Refer to specific recommendations on card
6. Decide which strategies to implement and/or develop additional strategies appropriate for the facility and situation
7. Assure consistent regional approach by informing public health authorities and other facilities if contingency or crisis strategies will continue beyond 24h and no regional options exist for re-supply or patient transfer; activate regional scarce resource coordination plans as appropriate
8. Review strategies every operational period or as availability (supply/demand) changes

Core strategies to be employed (generally in order of preference) during, or in anticipation of a scarce resource situation are:

Prepare - pre-event actions taken to minimize resource scarcity (e.g., stockpiling of medications)
Substitute - use an essentially equivalent device, drug, or personnel for one that would usually be available (e.g., morphine for fentanyl)
Adapt – use a device, drug, or personnel that are not equivalent but that will provide sufficient care (e.g., anesthesia machine for mechanical ventilation)
Conserve – use less of a resource by lowering dosage or changing utilization practices (e.g., minimizing use of oxygen driven nebulizers to conserve oxygen)
Re-use – re-use (after appropriate disinfection / sterilization) items that would normally be single-use items
Re-allocate – restrict or prioritize use of resources to those patients with a better prognosis or greater need

Capacity Definitions:

Conventional capacity – The spaces, staff, and supplies used are *consistent with daily practices* within the institution. These spaces and practices are used during a major mass casualty incident that triggers activation of the facility emergency operations plan.

Contingency capacity – The spaces, staff, and supplies used are not consistent with daily practices, but provide care to a standard that is *functionally equivalent* to usual patient care practices. These spaces or practices may be used temporarily during a major mass casualty incident or on a more sustained basis during a disaster (when the demands of the incident exceed community resources).

Crisis capacity – Adaptive spaces, staff, and supplies are not consistent with usual standards of care, but provide *sufficiency* of care in the setting of a catastrophic disaster (i.e., provide the best possible care to patients given the circumstances and resources available). Crisis capacity activation constitutes a significant adjustment to standards of care (Hick et al, 2009).

This card set is designed to facilitate a structured approach to resource shortfalls at a healthcare facility. It is a decision support tool and assumes that incident management is implemented and that key personnel are familiar with ethical frameworks and processes that underlie these decisions (for more information see Institute of Medicine 2012 Crisis Standards of Care: A Systems Framework for Catastrophic Disaster Response http://www.iom.edu/Reports/2012/Crisis-Standards-of-Care-A-Systems-Framework-for-Catastrophic-Disaster-Response.aspx and the Minnesota Pandemic Ethics Project - http://www.health.state.mn.us/divs/idepc/ethics/). Each facility will have to determine the most appropriate steps to take to address specific shortages. Pre-event familiarization with the contents of this card set is recommended to aid with event preparedness and anticipation of specific resource shortfalls. The cards do not provide comprehensive guidance, addressing only basic common categories of medical care. Facility personnel may determine additional coping mechanisms for the specific situation in addition to those outlined on these cards.

The content of this card set was developed by the Minnesota Department of Health (MDH) Science Advisory Team in conjunction with many subject matter experts whose input is greatly appreciated. This guidance does not represent the policy of MDH. Facilities and personnel implementing these strategies in crisis situations should assure communication of this to their healthcare and public health partners to assure the invocation of appropriate legal and regulatory protections in accord with State and Federal laws. This guidance may be updated or changed during an incident by the Science Advisory Team and MDH. The weblinks and resources listed are examples, and may not be the best sources of information available. Their listing does not imply endorsement by MDH. This guidance does not replace the judgement of the clinical staff and consideration of other relevant variables and options during an event.

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OXYGEN

STRATEGIES FOR SCARCE RESOURCE SITUATIONS

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

RECOMMENDATIONS	*Strategy*	*Conventional*	*Contingency*	*Crisis*
Inhaled Medications • Restrict the use of Small Volume Nebulizers when inhaler substitutes are available. • Restrict continuous nebulization therapy. • Minimize frequency through medication substitution that results in fewer treatments (6h-12h instead of 4h-6h applications).	*Substitute & Conserve*			
High-Flow Applications • Restrict the use of high-flow cannula systems as these can demand 12 to 40 LPM flows. • Restrict the use of simple and partial rebreathing masks to 10 LPM maximum. • Restrict use of Gas Injection Nebulizers as they generally require oxygen flows between 10 LPM and 75 LPM. • Eliminate the use of oxygen-powered venturi suction systems as they may consume 15 to 50 LPM.	*Conserve*			
Air-Oxygen Blenders • Eliminate the low-flow reference bleed occurring with any low-flow metered oxygen blender use. This can amount to an additional 12 LPM. Reserve air-oxygen blender use for mechanical ventilators using high-flow non-metered outlets. (These do not utilize reference bleeds). • Disconnect blenders when not in use.	*Conserve*			
Oxygen Conservation Devices • Use reservoir cannulas at 1/2 the flow setting of standard cannulas. • Replace simple and partial rebreather mask use with reservoir cannulas at flowrates of 6-10 LPM.	*Substitute & Adapt*			
Oxygen Concentrators if Electrical Power Is Present • Use hospital-based or independent home medical equipment supplier oxygen concentrators if available to provide low-flow cannula oxygen for patients and preserve the primary oxygen supply for more critical applications.	*Substitute & Conserve*			
Monitor Use and Revise Clinical Targets • Employ oxygen titration protocols to optimize flow or % to match targets for SPO2 or PaO2. • Minimize overall oxygen use by optimization of flow. • Discontinue oxygen at earliest possible time. **Starting Example** / **Initiate O2** / **O2 Target** Normal Lung Adults: SPO2 <90% / SPO2 90% Infants & Peds: SPO2 <90% / SPO2 90-95% Severe COPD History: SPO2 <85% / SPO2 90% **Note**: Targets may be adjusted further downward depending on resources available, the patient's clinical presentation, or measured PaO2 determination.	*Conserve*			
Expendable Oxygen Appliances • Use terminal sterilization or high-level disinfection procedures for oxygen appliances, small & large-bore tubing, and ventilator circuits. Bleach concentrations of 1:10, high-level chemical disinfection, or irradiation may be suitable. Ethylene oxide gas sterilization is optimal, but requires a 12-hour aeration cycle to prevent ethylene chlorohydrin formation with polyvinyl chloride plastics.	*Re-use*			
Oxygen Re-Allocation • Prioritize patients for oxygen administration during severe resource limitations.	*Re-Allocate*			

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STAFFING

STRATEGIES FOR SCARCE RESOURCE SITUATIONS

RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Staff and Supply Planning • Assure facility has process and supporting policies for disaster credentialling and privileging - including degree of supervision required, clinical scope of practice, mentoring and orientation, and verification of credentials • Encourage employee preparedness planning (www.ready.gov and other resources). • Cache adequate personal protective equipment (PPE) and support supplies. • Educate staff on institutional disaster response. • Educate staff on community, regional and state disaster plans and resources. • Develop facility plans addressing staff's family / pets or staff shelter needs.	*Prepare*			
Focus Staff *Time* on Core Clinical Duties • Minimize meetings and relieve administrative responsibilities not related to event. • Reduce documentation requirements. • Cohort patients to conserve PPE and reduce staff PPE donning/doffing time and frequency. • Restrict elective appointments and procedures.	*Conserve*			
Use Supplemental Staff • Bring in equally trained staff (burn or critical care nurses, Disaster Medical Assistance Team [DMAT], other health system or Federal sources). • Equally trained staff from administrative positions (nurse managers).	*Substitute*			
• Adjust personnel work schedules (longer but less frequent shifts, etc.) if this will not result in skill / PPE compliance deterioration. • Use family members/lay volunteers to provide basic patient hygiene and feeding – releasing staff for other duties.	*Adapt*			
Focus Staff *Expertise* on Core Clinical Needs • Personnel with specific critical skills (ventilator, burn management) should concentrate on those skills; specify job duties that can be safely performed by other medical professionals. • Have specialty staff oversee larger numbers of less-specialized staff and patients (for example, a critical care nurse oversees the intensive care issues of 9 patients while 3 medical/surgical nurses provide basic nursing care to 3 patients each). • Limit use of laboratory, radiographic, and other studies, to allow staff reassignment and resource conservation. • Reduce availability of non-critical laboratory, radiographic, and other studies.	*Conserve*			
Use Alternative Personnel to Minimize Changes to Standard of Care • Use less trained personnel with appropriate mentoring and just-in-time education (e.g., healthcare trainees or other health care workers, Minnesota Responds Medical Reserve Corps, retirees). • Use less trained personnel to take over portions of skilled staff workload for which they have been trained. • Provide just-in-time training for specific skills. • Cancel most sub-specialty appointments, endoscopies, etc. and divert staff to emergency duties including in-hospital or assisting public health at external clinics/screening/dispensing sites.	*Adapt*			

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NUTRITIONAL SUPPORT

STRATEGIES FOR SCARCE RESOURCE SITUATIONS

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

RECOMMENDATIONS	*Strategy*	*Conventional*	*Contingency*	*Crisis*
Food • Maintain hospital supply of inexpensive, simple to prepare, long-shelf life foodstuffs as contingency for at least 96 hours without resupply, with additional supplies according to hazard vulnerability analysis (e.g., grains, beans, powdered milk, powdered protein products, pasta, and rice). Access existing or devise new emergency/disaster menu plans. • Maintain hospital supply of at least 30 days of enteral and parenteral nutrition components and consider additional supplies based on institution-specific needs. Review vendor agreements and their contingencies for delivery and production, including alternate vendors. Note: A 30-day supply based on usual use may be significantly shortened by the demand of a disaster.	*Prepare*			
Water • Stock bottled water sufficient for drinking needs for at least 96 hours if feasible (for staff, patients and family/visitors), or assure access to drinking water apart from usual supply. Potential water sources include food and beverage distributors. • Ensure there is a mechanism in place to verify tap water is safe to drink. • Infants: assure adequate stocks of formula and encourage breastfeeding.	*Prepare*			
Staff/Family • Plan to feed additional staff, patients, and family members of staff/patients in select situations (ice storm as an example of a short-term incident, an epidemic as an example of a long-term incident).	*Prepare*			
Planning • Work with stakeholders to encourage home users of enteral and parenteral nutrition to have contingency plans and alternate delivery options. Home users of enteral nutrition typically receive delivery of 30 days supply and home users of parenteral nutrition typically receive a weekly supply. Anticipate receiving supply requests from home users during periods of shortage. Work with vendors regarding their plans for continuity of services and delivery. • Identify alternate sources of food supplies for the facility should prime vendors be unavailable (including restaurants – which may be closed during epidemics). Consider additional food supplies at hospitals that do not have food service management accounts. • Determine if policy on family provision of food to patients is in place, and what modifications might be needed or permitted in a disaster.	*Prepare*			
• Liberalize diets and provide basic nutrients orally, if possible. Total parenteral nutrition (TPN) use should be limited and prioritized for neonatal and critically ill patients.	*Substitute*			
• Non-clinical personnel serve meals and may assist preparation. • Follow or modify current facility guidelines for provision of food/feeding by family members of patients. • Anticipate and have a plan for the receipt of food donations. If donated food is accepted, it should be non-perishable, prepackaged, and in single serving portions.	*Adapt*			
• Collaborate with pharmacy and nutrition services to identify patients appropriate to receive parenteral nutrition support vs. enteral nutrition. Access premixed TPN/PPN solutions from vendor if unable to compound. Refer to Centers for Disease Control (CDC) Fact Sheets and American Society for Parenteral and Enteral Nutrition (ASPEN) Guidelines. Substitute oral supplements for enteral nutrition products if needed.	*Substitute & Adapt*			
• Eliminate or modify special diets temporarily. • Use blenderized food and fluids for enteral feedings rather than enteral nutrition products if shortages occur. Examples: 1. The Oley Foundation: Making Your Own Food for Tube Feeding, http://www.oley.org/lifeline/TubetalkSO07.html#Making%20your%20own 2. Klein, Marsha Dunn, and Suzanne Evans Morris. Homemade Blended Formula Handbook. Tucson: Mealtime Notions LLC, 2007.	*Adapt*			

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MEDICATION ADMINISTRATION

STRATEGIES FOR SCARCE RESOURCE SITUATIONS

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Cache / Increase Supply Levels • Patients should have at least 30 days supply of home medications and obtain 90 day supply if pandemic, epidemic, or evacuation is imminent. • Examine formulary to determine commonly-used medications and classes that will be in immediate / high demand. • Increase supply levels or cache critical medications - particularly for low-cost items and analgesics. • Key examples include: **Analgesia**: • morphine, other narcotic and non-narcotic (non-steroidals, acetaminophen) class - injectable and oral (narcotic conversion tool at http://www.globalrph.com/narcoticonv.htm) **Sedation**: • particularly benzodiazepine (lorazepam, midazolam, diazepam) injectables **Anti-infective**: • narrow and broad spectrum antibiotics for pneumonia, skin infections, open fractures, sepsis (e.g.: cephalosporins, quinolones, tetracyclines, macrolides, aminoglycosides, clindamycin, etc.), select antivirals **Pulmonary**: • metered dose inhalers (albuterol, inhaled steroids), oral steroids (dexamethasone, prednisone) **Behavioral Health**: • haloperidol, other injectable and oral anti-psychotics, common anti-depressants, anxiolytics **Other**: • sodium bicarbonate, paralytics, induction agents (etomidate, propofol), proparacaine/tetracaine, atropine, pralidoxime, epinephrine, local anesthetics, antiemetics, insulin, common oral anti-hypertensive and diabetes medications	*Prepare*			
Use Equivalent Medications • Obtain medications from alternate supply sources (pharmaceutical representatives, pharmacy caches). **Pulmonary**: • Metered dose inhalers instead of nebulized medications **Analgesia/ Sedation**: • Consider lorazepam for propofol substitution (and other agents in short supply) • ICU analgesia/sedation drips Morphine 4-10mg IV load then 2mg/h and titrate / re-bolus as needed usual 3-20mg/h); lorazepam 2-8mg or midazolam 1-5mg IV load then 2-8mg/h drip	*Substitute*			
Anti-infective: • Examples: cephalosporins, gentamicin, clindamycin substitute for unavailable broad-spectrum antibiotic • Target therapy as soon as possible based upon organism identified.	*Substitute*			
Other: • Beta blockers, diuretics, calcium channel blockers, ace inhibitors, anti-depressants, anti-infectives				
Reduce Use During High Demand • Restrict use of certain classes if limited stocks likely to run out (restrict use of prophylactic / empiric antibiotics after low risk wounds, etc.). • Decrease dose; consider using smaller doses of medications in high demand / likely to run out (reduce doses of medications allowing blood pressure or glucose to run higher to ensure supply of medications adequate for anticipated duration of shortage). • Allow use of personal medications (inhalers, oral medications) in hospital.	*Conserve*			
• Do without - consider impact if medications not taken during shortage (statins, etc.).	*Conserve*			

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MEDICATION ADMINISTRATION

STRATEGIES FOR SCARCE RESOURCE SITUATIONS (cont.)

RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Modify Medication Administration • Emphasize oral, nasogastric, subcutaneous routes of medication administration. • Administer medications by gravity drip rather than IV pump if needed: *IV drip rate calculation - drops / minute = amount to be infused x drip set / time (minutes) (drip set = qtts / mL - 60, 10, etc.).* • Rule of 6: pt wgt (kg) x 6 = mg drug to add to 100mL fluid = 1mcg / kg / min for each 1 mL / hour NOTE: For examples, see http://www.dosagehelp.com/iv_rate_drop.html	*Adapt*			
• Consider use of select medications beyond expiration date.* • Consider use of veterinary medications when alternative treatments are not available.*	*Adapt*			
Restrict Allocation of Select Medications • Allocate limited stocks of medications with consideration of regional/state guidance and available epidemiological information (e.g.: anti-viral medications such as olseltamivir)	*Re-Allocate*			
• Allocate limited stock to support other re-allocation decisions (ventilator use, etc.).	*Re-Allocate*			

*Legal protection such as Food and Drug Administration approval or waiver required.

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HEMODYNAMIC SUPPORT AND IV FLUIDS

STRATEGIES FOR SCARCE RESOURCE SITUATIONS

RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Cache Additional Intravenous (IV) Cannulas, Tubing, Fluids, Medications, and Administration Supplies	*Prepare*			
Use Scheduled Dosing and Drip Dosing When Possible • Reserve IV pump use for critical medications such as sedatives and hemodynamic support.	*Conserve*			
Minimize Invasive Monitoring • Substitute other assessments (e.g., clinical signs, ultrasound) of central venous pressure (CVP). • When required, assess CVP intermittently via manual methods using bedside saline manometer or transducer moved between multiple patients as needed, or by height of blood column in CVP line held vertically while patient supine.	*Conserve*			
Emphasize Oral Hydration Instead of IV Hydration When Possible Utilize appropriate oral rehydration solution: • Oral rehydration solution: 1 liter water (5 cups) + 1 tsp salt + 8 tsp sugar, add flavor (e.g., ½ cup orange juice, other) as needed. • Rehydration for moderate dehydration 50-100mL / kg over 2-4 hours Pediatric hydration: Pediatric maintenance fluids: • 4 mL/kg/h for first 10kg of body weight (40 mL/h for 1st 10 kg) • 2 mL/kg/h for second 10kg of body weight (20 mL/h for 2nd 10kg = 60 mL/h for 20kg child) • 1 mL/kg/h for each kg over 20kg (example - 40 kg child = 60 mL/h plus 20 mL/h = 80 mL/h) Supplement for each diarrhea or emesis NOTE: Clinical (urine output, etc.) and laboratory (BUN, urine specific gravity) assessments and electrolyte correction are key components of fluid therapy and are not specifically addressed by these recommendations. NOTE: For further information and examples, see http://rehydrate.org, http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5216a1.htm and http://www.ped.med.utah.edu/cai/howto/IntravenousFluidOrders.PDF.	*Substitute*			
Provide Nasogastric Hydration Instead of IV Hydration When Practical • Patients with impediments to oral hydration may be successfully hydrated and maintained with nasogastric (NG) tubes. • For fluid support, 8-12F (pediatric: infant 3.5F, < 2yrs 5F) tubes are better tolerated than standard size tubes.	*Substitute*			
Substitute Epinephrine for Other Vasopressor Agents • For hemodynamically unstable patients who are adequately volume-resuscitated, consider adding 6mg epinephrine (6mL of 1:1000) to 1000mL NS on minidrip tubing and titrate to target blood pressure. • Epinephrine 1:1000 (1mg/mL) multi-dose vials available for drip use.	*Substitute*			
Re-use CVP, NG, and Other Supplies After Appropriate Sterilization / Disinfection • Cleaning for all devices should precede high-level disinfection or sterilization. • High-level disinfection for at least twenty minutes for devices in contact with body surfaces (including mucous membranes);glutaraldehyde, hydrogen peroxide 6%, or bleach (5.25%) diluted 1:20 (2500 ppm) are acceptable solutions. NOTE: chlorine levels reduced if stored in polyethylene containers - double the bleach concentration to compensate). • Sterilize devices in contact with bloodstream (e.g., ethylene oxide sterilization for CVP catheters).	*Re-use*		(disinfection – NG, etc)	(sterilization - central line, etc)

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HEMODYNAMIC SUPPORT AND IV FLUIDS

STRATEGIES FOR SCARCE RESOURCE SITUATIONS (cont.)

RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Intraosseous / Subcutaneous (Hypodermoclysis) Replacement Fluids • Consider as an option when alternative routes of fluid administration are impossible/unavailable • Intraosseous before percutaneous Intraosseous • Intraosseous infusion is not generally recommended for hydration purposes, but may be used until alternative routes are available. Intraosseous infusion requires pump or pressure bag. Rate of fluid delivery is often limited by pain of pressure within the marrow cavity. This may be reduced by pre-medication with lidocaine 0.5mg/kg slow IV push. Hypodermoclysis • Cannot correct more than moderate dehydration via this technique. • Many medications cannot be administered subcutaneously. • Common infusion sites: pectoral chest, abdomen, thighs, upper arms. • Common fluids: normal saline (NS), D5NS, D5 1/2 NS (Can add up to 20-40 mEq potassium if needed.) • Insert 21/24 gauge needle into subcutaneous tissue at a 45 degree angle, adjust drip rate to 1-2 mL per minute. (May use 2 sites simultaneously if needed.) • Maximal volume about 3 liters / day; requires site rotation. • Local swelling can be reduced with massage to area. • Hyaluronidase 150 units / liter facilitates fluid absorption but not required; may not decrease occurrence of local edema.	*Substitute*			
Consider Use of Veterinary and Other Alternative Sources for Intravenous Fluids and Administration Sets	*Adapt*			

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MECHANICAL VENTILATION / EXTERNAL OXYGENATION

STRATEGIES FOR SCARCE RESOURCE SITUATIONS

RECOMMENDATIONS	*Strategy*	*Conventional*	*Contingency*	*Crisis*
Increase Hospital Stocks of Ventilators and Ventilator Circuits, ECMO or bypass circuits	*Prepare*			
Access Alternative Sources for Ventilators / specialized equipment • Obtain specialized equipment from vendors, healthcare partners, regional, state, or Federal stockpiles via usual emergency management processes and provide just-in-time training and quick reference materials for obtained equipment.	*Substitute*			
Decrease Demand for Ventilators • Increase threshold for intubation / ventilation. • Decrease elective procedures that require post-operative intubation. • Decrease elective procedures that utilize anesthesia machines. • Use non-invasive ventilatory support when possible.	*Conserve*			
Re-use Ventilator Circuits • Appropriate cleaning must precede sterilization. • If using gas (ethylene oxide) sterilization, allow full 12 hour aeration cycle to avoid accumulation of toxic byproducts on surface. • Use irradiation or other techniques as appropriate.	*Re-use*			
Use Alternative Respiratory Support Technologies • Use transport ventilators with appropriate alarms - especially for stable patients without complex ventilation requirements. • Use anesthesia machines for mechanical ventilation as appropriate / capable. • Use bi-level (BiPAP) equipment to provide mechanical ventilation. • Consider bag-valve ventilation as temporary measure while awaiting definitive solution / equipment (as appropriate to situation – extremely labor intensive and may consume large amounts of oxygen).	*Adapt*			
Assign Limited Ventilators to Patients Most Likely to Benefit if No Other Options Are Available ***STEP ONE*:** assess patient acuity using SOFA (see next page+) scoring table and/or other parameters appropriate to the situation (agent-specific prognostic indicators, modifications based on agent involved).	*Re-allocate*			

ORGAN SYSTEM	SCORE = 0	1	2	3	4
RESPIRATORY Pa02 / FI02	> 400	≤ 400	≤ 300	≤ 200 with resp. support	≤ 100 with resp. support
HEMATOLOGIC Platelets	> 150	≤ 150	≤ 100	≤ 50	≤ 20
HEPATIC Bilirubin (mg / dl)	< 1.2	1.2 – 1.9	2.0 – 5.9	6 – 11.9	≥ 12
CARDIOVASCULAR Hypotension	None	Mean Arterial Pressure < 70 mmHg	Dopamine ≤ 5 or any Dobutamine	Dopamine > 5 or Epi < 0.1 or Nor-Epi ≤ 0.1	Dopamine > 15 or Epi > 0.1 or Nor-Epi > 0.1
CENTRAL NERVOUS SYSTEM Glasgow Coma Score	15	13 - 14	10 - 12	6 - 9	<6
RENAL Creatinine	<1.2	1.2 - 1.9	2.0 - 3.4	3.5 - 4.9	≥5.0

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MECHANICAL VENTILATION / EXTERNAL OXYGENATION

STRATEGIES FOR SCARCE RESOURCE SITUATIONS (cont.)

RECOMMENDATIONS				***Strategy***	***Crisis***
***STEP TWO*:** Compared to other patient(s) requiring and awaiting external ventilation / oxygenation, does this patient have significant differences in prognosis or resource utilization in one or more categories below that would justify re-allocation of the ventilator / unit? Factors listed in relative order of importance/weight. Injury/epidemiologic factors may have the highest predictive value in some cases and may also affect the predictive ability of the SOFA score.				*Re-allocate*	
Criteria	Patient keeps resource		Resource re-allocated		
1. Organ system function[a]	Low potential for death (SOFA score ≤ 7)	Intermediate potential for death (SOFA score 8-11)	High potential for death (SOFA score ≥12)		
2. Duration of benefit / prognosis	Good prognosis based upon epidemiology of specific disease/ injury. No severe underlying disease.[b]	Indeterminate / intermediate prognosis based upon epidemiology of specific disease / injury Severe underlying disease with poor long-term prognosis and/or ongoing resource demand (e.g., home oxygen dependent, dialysis dependent) and unlikely to survive more than 1-2 years.	Poor prognosis based upon epidemiology of specific disease / injury (e.g., pandemic influenza) Severe underlying disease with poor short-term (e.g., <1 year) prognosis		
3. Duration of need	Short duration – flash pulmonary edema, chest trauma, other conditions anticipating < 3 days on ventilator	Moderate duration – e.g., pneumonia in healthy patient (estimate 3-7 days on ventilator)	Long duration – e.g., ARDS, particularly in setting of preexisting lung disease (estimate > 7 days on ventilator)		
4. Response to mechanical ventilation	Improving ventilatory parameters over time[c]	Stable ventilatory parameters over time	Worsening ventilatory parameters over time		

[a] The Sequential Organ Failure Assessment (SOFA) score is the currently preferred assessment tool but other predictive models may be used depending on the situation / epidemiology. Note: SOFA scores were not designed to forecast mortality, and thus single or a few point difference between patients may not represent a 'substantial difference' in mortality, but larger differences and trends can be extremely helpful in determining resource assignment.

[b] Examples of underlying diseases that predict poor short-term survival include (but are not limited to):

1. Congestive heart failure with ejection fraction < 25% (or persistent ischemia unresponsive to therapy or non-reversible ischemia with pulmonary edema)
2. Severe chronic lung disease including pulmonary fibrosis, cystic fibrosis, obstructive or restrictive diseases requiring continuous home oxygen use prior to onset of acute illness
3. Central nervous system, solid organ, or hematopoietic malignancy with poor prognosis for recovery
4. Cirrhosis with ascites, history of variceal bleeding, fixed coagulopathy or encephalopathy
5. Acute hepatic failure with hyperammonemia

[c] Changes in Oxygenation Index over time may provide comparative data, though of uncertain prognostic significance.
OI = MAWP x FiO2 / PaO2 where: OI = oxygenation index, MAWP= Mean Airway Pressure, FiO2 = inspired oxygen concentration, PaO2 = arterial oxygen pressure (May be estimated from oxygen dissociation curve if blood gas unavailable.)

***STEP THREE*:** Re-allocate ventilator / resource only if patient presenting with respiratory failure has significantly better chance of survival/benefit as compared to patient currently receiving ventilation. Follow additional regional and state/federal guidance and institutional processes for scarce resource situations.

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BLOOD PRODUCTS

STRATEGIES FOR SCARCE RESOURCE SITUATIONS

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

Category	RECOMMENDATIONS	Healthcare Facility	Blood Center	Strategy	Conventional	Contingency	Crisis
All Blood Products	• Increase donations if required, and consider local increase in frozen reserves • Increase O positive levels • Consider maintaining a frozen blood reserve if severe shortage • Increase recruitment for specific product needs		√	*Prepare*			
	• Consider adjustments to donor HGB/HCT eligibility		√	*Adapt*			
	• Relax travel deferrals for possible malaria and BSE (bovine spongiform encephalitis)*		√	*Prepare*			
Packed Red Blood Cells	• Use cell-saver and auto-transfusion to degree possible	√		*Re-use*			
	• Limit O negative use to women of child-bearing age • Use O positive in emergent transfusion in males or non-child bearing females to conserve O negative	√		*Conserve*			
	• Change donations from whole blood to 2x RBC apheresis collection if specific shortage of PRBCs		√	*Adapt*			
	• More aggressive crystalloid resuscitation prior to transfusion in shortage situations (blood substitutes may play future role)	√		*Conserve*			
	• Long-term shortage, collect autologous blood pre-operatively and consider cross-over transfusion	√		*Conserve*			
	• Enforce lower hemoglobin triggers for transfusion (for example, HGB 7)	√		*Conserve*			
	• Consider limiting high-consumption elective surgeries (select cardiac, orthopedic, etc)	√		*Conserve*			
	• Consider use of erythropoietin (EPO) for chronic anemia in appropriate patients	√		*Adapt*			
	• Further limit PRBC use, if needed, to active bleeding states, consider subsequent restrictions including transfusion only for end-organ damage, then to shock states only	√		*Re-allocate*			
	• Consider Minimum Qualifications for Survival (MQS) limits on use of PRBCs (for example, only initiate for patients that will require < 6 units PRBCs and/or consider stopping transfusion when > 6 units utilized). Specific MQS limits should reflect available resources at facility.	√		*Re-allocate*			
	• Reduce or waive usual 56 day inter-donation period* based upon pre-donation hemoglobin		√	*Adapt*			
	• Reduce weight restrictions for 2x RBC apheresis donations according to instruments used and medical director guidance*		√	*Adapt*			
Fresh Frozen Plasma	• Though not true substitute, consider use of fibrinolysis inhibitors or other modalities to reverse coagulopathic states (tranexamic acid, aminocaproic acid, activated coagulation factor use, or other appropriate therapies)	√		*Substitute*			
	• Consider reduction in red cell : FFP ratios in massive transfusion protocols in consultation with blood bank medical staff	√		*Conserve*			
	• No anticipatory use of FFP in hemorrhage without documented coagulopathy	√		*Conserve*			
	• Obtain FDA variance to exceed 24 collections per year for critical types*		√	*Adapt*			

*FDA approval/variance required via American Association of Blood Banks (AABB)

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BLOOD PRODUCTS

STRATEGIES FOR SCARCE RESOURCE SITUATIONS (cont.)

Category	RECOMMENDATIONS	Healthcare Facility	Blood Center	Strategy	Conventional	Contingency	Crisis
Platelets	• Though not true substitute, consider use of desmopressin (DDAVP) to stimulate improved platelet performance in renal and hepatic failure patients	√		*Substitute*			
	• May use leukoreduced whole blood pooled platelets (and, if required, consider non-leukoreduced whole blood pooled platelets)		√	*Adapt*	Leukoreduced		Non-leukoreduced
	• Convert less needed ABO Whole Blood to Apheresis		√	*Adapt*			
	• Transfuse platelets only for active bleeding, further restrict to life-threatening bleeding if required by situation	√		*Conserve*			
	• No prophylactic use of platelets	√		*Conserve*			
	• Accept female platelet donors without HLA antibody screen		√	*Adapt*			
	• Accept female donors for pooled and stored platelets		√	*Adapt*			
	• Apply for variance of 7 day outdate requirement*		√	*Adapt*			
	• Consider a 24 hr hold until the culture is obtained and immediate release for both Pool and Apheresis		√	*Adapt*			
	• Obtain FDA variance to allow new Pool and Store sites to ship across state lines*		√	*Adapt*			
	• Reduce pool sizes to platelets from 3 whole blood donations		√	*Adapt*			

*FDA approval/variance required via American Association of Blood Banks (AABB)

RENAL REPLACEMENT THERAPY
REGIONAL RESOURCE CARD

MINNESOTA HEALTHCARE SYSTEM
PREPAREDNESS PROGRAM

Resource cards are intended to provide incident-specific tactics and planning information to supplement the general strategy cards. They are organized according to the 'CO-S-TR' framework of incident response planning – http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=8844490&fulltextType=RA&fileId=S193578930000135X

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Command, Control, Communication, Coordination	**General Preparedness Information** Compared to other critical care interventions, hemodialysis offers equipment availability, expansion capacity, and care coordination that greatly reduces the risk of contingency and crisis care, at least in our geographic area. Disaster dialysis challenges generally result from: 1. Lack of clean water sources (each hemodialysis requires about 160 liters ultra-clean water) 2. Relocation of dialysis-dependent patients to a new area (evacuation of nursing homes, flood zones, etc.) 3. Increase in patients requiring dialysis (crush syndrome, unusual infections) <u>Outpatient</u> • Primary providers are DaVita and Fresenius – both have extensive contingency plans to increase capacity and relocate patients (including toll-free numbers to access dialysis services) • Renal Network 11 (multi-state renal planning, quality, and emergency preparedness) has database of all dialysis patients in the state/region and assists coordination activities (http://www.esrdnet11.org/resources/disaster_prep_resources.asp) <u>Inpatient</u> • Most facilities lease inpatient services via contract with above or other agencies; some have own nurses and program – plans should account for contingency use of alternate services / leasing services <u>Patient preparedness</u> • Patients should have a disaster plan – including specific foods set aside for up to 72h. Note that shelters are unlikely to have foods conducive to renal dietary needs (low sodium, etc.) • Personal planning guidance is available at: http://www.kidney.org/atoz/pdf/disaster_prepardness.pdf **Shortage of Renal Replacement Therapy (RRT) Resources** • Affected facility should contact involved/affected dialysis provider companies and organizations as expert consultants[1] (MDH OEP and the Renal Network 11 website maintain contact information)	*Prepare*			
Space	**Relocated Patients Requiring Outpatient Dialysis** • Contact usual outpatient provider network to schedule at new facility – refer patients to 'hotlines' as needed **Excess Patients Requiring Dialysis** • Transfer patients to other facilities capable of providing dialysis • Consider moving patients to facilities with in-house water purification if water quality is an issue for multiple inpatients requiring dialysis	*Substitute*			
	• Consider moving other inpatient or outpatient dialysis staff and equipment to facilities requiring increased dialysis capacity	*Adapt*			

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RENAL REPLACEMENT THERAPY
REGIONAL RESOURCE CARD

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Supplies	**Water Supply** • Quantify water-purifying machines available for bedside dialysis machines • Identify facilities providing high-volume services that purify their own water and pipe to specific rooms in the dialysis unit, intensive care, etc. • Identify water-purifying and dialysis machines to be obtained through lease agreements	*Prepare*			
	Water Contamination • Consider alternate sources of highly purified water	*Prepare*			
	• Consider transferring stable inpatients to outpatient dialysis centers for dialysis treatments and vice versa	*Substitute*			
	• Consider use of MN National Guard water reserves and purification equipment – but must assure adequate purity for dialysis (potable is NOT sufficiently clean)	*Adapt*			
	Power Outage or Shortage • Consider transferring stable inpatients to outpatient dialysis centers for dialysis treatments and vice versa • Consider transferring inpatients to other hospitals • Consider transfer of outpatients to other facilities for care until issue resolved	*Substitute* *Adapt*			
	Dialysis Catheters, Machines, Reverse Osmosis Machines, and/or Other Supply Shortages ***Note:*** Dialysis catheters and tubing are inexpensive, relatively interchangeable, and supplied by several manufacturers				
	• Stock adequate dialysis tubing sets and venous access catheters (Quinton, etc.) for at least one month's usual use • Identify provider network and other sources of supplies and machines	*Prepare*			
	• Transfer machines/supplies between outpatient centers and hospitals, or between hospitals	*Substitute*			
Staff	**Dialysis Staff Shortages**[2] • Non-dialysis nursing staff to take on "routine" elements of dialysis nursing (e.g., taking VS, monitoring respiratory and hemodynamic status, etc.)	*Substitute*			
	• Dialysis nursing staff to supervise non-dialysis nursing staff providing some dialysis functions • Outpatient dialysis techs may be used to supervise dialysis runs if provider deficit is critical issue (would be unlikely aside from potentially in pandemic or other situation affecting staff)	*Adapt*			
Special	**Community Planning** • Medical needs of re-located renal failure patients are substantial; planning on community level should incorporate their medication and dietary needs during evacuation and sheltering activities.	*Prepare*			
Triage	**Insufficient Resources Available For All Patients Requiring Dialysis** • Change dialysis from 'scheduled' to 'as needed' based on clinical and laboratory findings (particularly hyperkalemia and impairment of respiration) – parameters may change based on demand for resources	*Conserve*			
	• Conceivable (but extraordinary, given outpatient dialysis machine resources) situations may occur where resources are insufficient to the point that some patients may not be able to receive dialysis (for example, pandemic when demand nationwide exceeds available resources) – access to dialysis should be considered as part of critical care intervention prioritization (see Mechanical Ventilation Strategies for Scarce Resource Situations)	*Re-allocate*			

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RENAL REPLACEMENT THERAPY
REGIONAL RESOURCE CARD

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Treatment	**Crush Syndrome** • Initiate IV hydration and acidosis prevention protocols "in the field" for crush injuries to prevent/treat rhabdomyolysis in hospital settings	*Conserve*			
	Mode of Dialysis • Restrict to hemodialysis only for inpatient care (avoid continuous renal replacement therapy(CRRT) and peritoneal dialysis (PD) due to duration of machine use (CRRT) and supply issues (PD))	*Substitute*			
	Increased Demand on Resources • Shorten duration of dialysis for patients that are more likely to tolerate it safely • Patients to utilize their home "kits" of medication (Kayexalate) and follow dietary plans to help increase time between treatments, if necessary	*Conserve*			
Transportation	**Transportation Interruptions** • Dialysis patients may require alternate transportation to assure ongoing access to dialysis treatment. • Chronic patients should coordinate with their service providers / dialysis clinics first for transportation and other assistance during service/transportation interruptions. • Emergency management and/or the health and medical sector may have to supplement contingency transportation to dialysis during ice storms or other interruptions to transportation.	*Prepare* *Adapt*			

[1] The major national dialysis corporations have extensive experience contending with disasters; their input during any anticipated or actual incident is imperative to optimize the best patient care in Minnesota.

[2] See Staffing in the Core Clinical Strategies for Scarce Resource Situations card set.

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BURN TREATMENT
REGIONAL RESOURCE CARD

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

Resource cards are intended to provide incident-specific tactics and planning information to supplement the general strategy cards. They are organized according to the 'CO-S-TR' framework of incident response planning – http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=8844490&fulltextType=RA&fileId=S193578930000135X

<table>
<tr><th>Category</th><th>RESOURCE and RECOMMENDATIONS</th><th>Strategy</th><th>Conventional</th><th>Contingency</th><th>Crisis</th></tr>
<tr><td rowspan="1">Command, Control, Communication, Coordination</td><td>

General Preparedness Information

- This cardset is specifically designed to address supplies and needs during the first 24 hours of care

American Burn Association verified burn centers in Minnesota	Referral/Consultation Phone numbers	# Burn Beds
Hennepin County Medical Center (HCMC)	1-800-424-4262	17
Regions Hospital (Regions)	1-800-922-BURN (2876)	18

- Additional capacity and burn expertise may be available at:
  - Essentia Health-Duluth (15 bed burn unit)
  - Mayo Clinic St. Marys Hospital in Rochester (no burn unit)
- Burn casualties must be stabilized at the receiving hospital and then transferred to a burn center. Burn casualties should initially be transported to the highest level of burn/trauma care that is available in the area.
- Metro Regional Hospital Resource Center (RHRC) will coordinate transfers of patients to concentrate as many burn patients at, or close to, burn centers per Metropolitan Cooperative Burn Plan
- Greater Minnesota incident – contact MDH-OEP on-call (via State Duty Officer) if HCMC and Regions are unable to accommodate casualties or if assistance required with transportation/resource issues; affected regional healthcare coalition/Regional Healthcare Preparedness Coordinator will coordinate with MDH and Metro RHRC
- Mass burn incidents are unusual but must be anticipated. The ability of non-burn center hospitals to stabilize successfully and initially treat victims is critical to successful response. All hospitals should plan for incidents considering their relative size and role in the community
- In a mass burn incident, burn consultation resources will be provided. Resource contacts may be outside of Minnesota (e.g., University of Michigan), because HCMC and Regions staff will be occupied with patient care and transfer activities

</td><td>Prepare</td><td></td><td></td><td></td></tr>
<tr><td rowspan="3">Space</td><td>

Space

- Maximal use of burn beds at HCMC, Regions, and Essentia Health-Duluth

</td><td>Adapt</td><td></td><td></td><td rowspan="3"></td></tr>
<tr><td>

- Expand burn units at HCMC and Regions into other ICU spaces at those hospitals

</td><td>Conserve</td><td></td><td></td></tr>
<tr><td>

- Transfer non-burn ICU patients out of HCMC and Regions to other facilities according to Metro Compact, if necessary
- Cohort overflow at institutions close to burn centers (Abbott Northwestern, St. Joseph's, Children's)
- Forward movement to regional burn centers in adjoining states as required to assure appropriate ongoing care in coordination with MDH-OEP and Great Lakes Healthcare Partership (FEMA Region V - MN, WI, IL, IN, MI, OH), and IA and MO burn centers (most burn centers have 6-12 beds each)
- National Disaster Medical System (NDMS) patient movement may be required in massive incidents. In such an event, a burn transfer coordination point will be designated and contact information circulated to hospitals

</td><td>Adapt</td><td></td><td></td></tr>
</table>

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BURN TREATMENT
REGIONAL RESOURCE CARD

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Supplies — Typical Planning Numbers	**Hospital Outpatient Supply Planning**	*Prepare Increase Supply*			

Center Type	Burn Center	Level I & II Trauma Centers	Level III & IV Trauma Centers
Number of Outpatients	100	50	25

Outpatient clinics and urgent care centers may also cache appropriate supplies for their location and patient population.
Suggested supplies per patient for first 72 hours (amounts needed will vary) include:

- 5 - 8 cm x18 cm (3 x 7 inch) sheets petroleum-impregnated gauze (e.g., Adaptic)
- 4 - 10 cm (4 inch) rolls of stretchable roller gauze (e.g., Kerlix); variety of sizes suggested
- 2 - 120 g (4 oz) tube bacitracin
- 30 tablets of ibuprofen 800 mg and stock liquid form for pediatric use
- 50 – opioid analgesic tablets (50 tablets for 5 day supply if 1-2 tablets every 4 to 6 hours); also stock pediatric alternatives
- Assume half of all patients will require tetanus boosters
- Especially in smaller communities, outpatient/pharmacy resources may be limited. Assess and plan for up to 72 hours without re-supply

Adapt

Inpatient Supply Planning

Institutions should prepare based on role in community. In contingency/crisis situation, emphasis moves away from silver-impregnated dressings (expensive to stockpile) to bacitracin/petrolatum-impregnated dressings (e.g. Adaptic). If transfer is possible within the first 24 hours, simple dry sterile sheets or dressings are appropriate - see Burn Triage Card for further information.

Prepare Increase Supply

Adapt

Center Type	Burn Center	Level I & II Trauma Centers	Level III & IV Trauma Centers
Number of Inpatients	50	10	5

Consider stocking, or having plans to obtain supplies sufficient for 2-3 days of care.
Estimated usage of supplies per 24 hours **per patient** is below.

- 15 - 8 cm x 18 cm (3 x 7 inch) sheets petroleum gauze (about 50 % of total body surface area (BSA) normal body mass patient - use as average for major burn patient)
- 2 - bacitracin 120 g (4 oz) tubes (or 1 lb. jar for 2 victims)
- 10 rolls of 10 cm (4 inch) stretchable roller gauze, such as Kerlix
- 2 - 5 cm (2 inch) rolls stretchable roller gauze (e.g., Kerlix) for fingers/toes/small area wrapping - can cut 4 inch in half also
- Morphine (or equivalent) 10 mg/hour x 24 hours = (roughly) 250mg/day/patient
- Massive doses of opioid analgesia and anxiolytics may be required by burn patients (including any patients that are only receiving palliative care)
- 1 tetanus booster per 2 patients
- IV fluid - for example from Parkland formula 4mL/kg x 50% BSA = 14 liters of fluid. Lactated Ringers usually preferred, but saline acceptable
- 1 - central line (including 20% pediatric sizes)

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BURN TREATMENT
REGIONAL RESOURCE CARD

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Staff	**Staff** • Strongly consider pre-incident training on care of major burns for physician and nursing staff; have quick-reference cards/materials available for burn stabilization • Identify staff with prior burn treatment experience (e.g., military) • Plan for just-in-time training for non-burn nursing and physician staff, reinforcing key points of burn patient care (including importance of adequate fluid resuscitation, urine output parameters, principles of analgesia, etc.) • Consider sending burn-trained RN/MD to affected center to assist with triage and initial management if staffing allows. • Burn nurses and physicians provide burn/dressing related care only; other ICU and floor nursing and physician staff provide supportive care. Adjust burn nurse staffing patterns as needed. See *Staffing Strategies for Scarce Resource Situations* sheet for further considerations • Consider just-in-time training on dressing changes, wound care and monitoring – especially at non-burn centers • MDH may work with state and upper Midwest experts to set up a 'hotline' and/or telemedicine or other virtual means by which non-burn centers may easily consult with burn experts • National Disaster Medical System (NDMS) personnel and other supplemental staff may be required	*Prepare* *Adapt* *Adapt* *Conserve* *Adapt* *Substitute*			
Special	**Special Considerations** Consider availability of resources for: • Airway/inhalational injury – extra airway management supplies, bag-valve assemblies, etc. • Pediatric age-appropriate intravenous, intraosseous access devices, medication dosing guides • Consider carbon monoxide or cyanide poisoning if closed space smoke exposure – consult Poison Control Center* • Inhalational exposure – aggressive, early airway management for inhalational injuries • Electrical – high incidence of rhabdomyolysis and internal injuries – increase fluid resuscitation, add bicarbonate to intravenous fluids to alkalinize urine, monitor serum bicarbonate, creatinine, and creatine kinase • Chemical and radiologic – consider need for specific therapies - consult Poison Control Center* • Consider need for decontamination - consult Poison Control Center* • Psychological support for patients, their families and staff. (Do not under-estimate the increased stress and psychological impact of a burn incident, particularly a mass casualty incident, on health care providers.) * Poison Control Center 1-800-222-1222	*Prepare*			

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Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Triage	**Critical Burns – Transfer to Burn Center As Soon As Possible** • See Burn Triage Card • Regardless of the extent of burn involvement, palliation of pain should be considered a priority. If large number of casualties and very severe burns, triage may have to be implemented based on knowledge of percent burn, age and underlying health issues, combined trauma or other conditions (such as severe inhalational injury). Initially, full support should be provided to as many patients as possible. **A triage table may contribute to decisions made by burn surgeons but should NOT substitute for a more global assessment of patient prognosis.** (Saffle JR, Gibran N, Jordan M. Defining the ratio of outcomes to resources for triage of burn patients in mass casualties. J Burn Care Rehabil. 2005;26:478-482)	*Conserve* *Re-Allocate*			

Age (yrs)	Burn Size (% total body surface area)									
	0-10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	71-80%	81-90%	91%+
0-1.9	Very high	Very high	Very high	High	Medium	Medium	Medium	Low	Low	Low/ Expectant
2.0-4.9	Outpatient	Very high	Very high	High	High	High	Medium	Medium	Low	Low
5.0-19.9	Outpatient	Very high	Very high	High	High	High	Medium	Medium	Medium	Low
20.0-29.9	Outpatient	Very high	Very high	High	High	Medium	Medium	Medium	Low	Low
30.0-39.9	Outpatient	Very high	Very high	High	Medium	Medium	Medium	Medium	Low	Low
40.0-49.9	Outpatient	Very high	Very high	Medium	Medium	Medium	Medium	Low	Low	Low
50.0-59.9	Outpatient	Very high	Very high	Medium	Medium	Medium	Low	Low	Low/ Expectant	Low/ Expectant
60.0-69.9	Very high	Very high	Medium	Medium	Low	Low	Low	Low/ Expectant	Low/ Expectant	Low/ Expectant
70.0+	Very high	Medium	Medium	Low	Low	Low/ Expectant	Expectant	Expectant	Expectant	Expectant

Outpatient: Survival and good outcome expected, without requiring initial admission; **Very High:** Survival and good outcome expected with limited/short-term initial admission and resource allocation (straightforward resuscitation, LOS <14-21 days, 1-2 surgical procedures); **High:** Survival and good outcome expected (survival ≥ 90%) with aggressive and comprehensive resource allocation, including aggressive fluid resuscitation, admission ≥14-21 days, multiple surgeries, prolonged rehabilitation; **Medium:** Survival 50-90% and/or aggressive care and comprehensive resource allocation required, including aggressive resuscitation, initial admission ≥14-21 days, multiple surgeries and prolonged rehabilitation; **Low:** Survival <50% even with long-term aggressive treatment and resource allocation; **Expectant:** Predicted survival ≤10% even with unlimited aggressive treatment.

BURN TREATMENT
REGIONAL RESOURCE CARD

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Treatment	**Treatment** Provide stabilizing burn care (airway, fluid management, analgesia, etc. – see Burn Triage Card with initial priorities, wound care, and nursing care). After stabilizing care, assess need for transfer to burn center. In a mass burn incident, assure coordination with Regional Hospital Resource Center, which will help to prioritize transportation and manage logistics. Patients may have to be held for 1-2 days at non-burn centers awaiting transfer in some cases.	*Adapt*			
Transport	**Transport** • Initial dressings should be dry, sterile dressing if transfer planned. If transfer will be delayed, adaptic dressings may be applied in consultation with burn center. • In consultation with burn specialist, arrange air medical transport or ground transport as appropriate. If multiple institutions are affected, coordinate with Regional Hospital Resource Center/Regional Healthcare Preparedness Coordinators • Obtain consultation with burn experts for ongoing care and triage/transportation prioritization if immediate transportation/referral is not possible • Plan for oxygen, fluids, and analgesia requirements during transport • Consider need for airway intervention prior to transport • Multi-agency coordination center may be used to help prioritize use of transportation assets • Consider use of Metro Mass Casualty Incident (MCI) buses for large numbers of patients being transferred (contact MDH-OEP on-call via State Duty Officer) • Regional transfer may be required – Metro Regional Healthcare Resource Center will coordinate this with MDH-OEP and appropriate state and Federal (NDMS) resources	*Prepare* *Adapt*			

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BURN TRIAGE CARD

Patient Arrives / Initial Assessment

High risk features? *

- Partial thickness burns > 10% total body surface area (BSA)
- Burns that involve the face, hands, feet, genital area or joints
- Third degree burns
- Electrical burns, including lightning injury
- Chemical burns
- Inhalation injury
- Any patient with burns and concomitant trauma

* Consultation/special consideration recommended for elderly, children <5 years, underlying diseases such as diabetes, or special rehabilitation needs

Yes

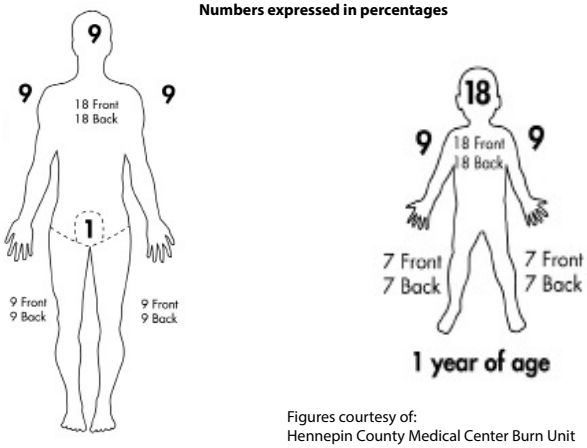
No

Minor

- Consider outpatient management, consultation/referral to wound/burn clinic or burn center as required
- Burn care outpatient supplies see Burn Treatment Regional Resource Card

Rule of Nines

Numbers expressed in percentages



Figures courtesy of:
Hennepin County Medical Center Burn Unit

American Burn Association Burn Centers in Minnesota	
Hennepin County Medical Center	1-800-424-4262
Regions Hospital	1-800-922-BURN (2876)

Initial Interventions:

Airway/Breathing – Assess airway and provide oxygen. Consider early intubation for >25% BSA burns. Intubation recommended: stridor, voice change, respiratory distress, circumferential neck burns, carbonaceous sputum, hypoxia, or prolonged transport time and major burn patient

Circulation - Assess vital signs and pulses. Burn shock common >20% BSA. Treat low blood pressure with IV fluids; consider other sources of hypotension. Avoid boluses when possible - increase fluid rates by 10% per hour for low urine output or lower blood pressures

Disability – Assess neurologic status (including sensation and motor); cervical spine protection if trauma/high-voltage (>1000 V) injury

Decontamination – Consider potential for chemical/radiologic contamination. Chemical burns should be irrigated for 30 minutes with body temperature water while consulting Poison Control* about specific treatments

Expose/Estimate - Remove clothing, jewelry, and contact lenses. Protect from hypothermia. Estimate second/third degree burn area (see figures below). Area of patient's hand (including fingers) equals 1% BSA

Fluids - IV access in non-burned tissue if possible. Start Lactated Ringers (LR) 4 mL/kg/% BSA. Give 50% over first 8 hours and rest over 16 hours from time of burn. Children <5 years add 2 ampules D50 to each liter of LR. May use normal saline if no LR available

History – Note time of injury, mechanism, AMPLET (Allergies, Medications, Past surgical and medical history, Last meal, Events surrounding the incident, Tetanus status)

Nasogastric or Orogastric - Insert tube for all intubated patients

Pain Control – Administer analgesia; extraordinary doses may be required to control pain adequately

Urine Output – All electrocutions, intubated patients, and major burns should have indwelling urinary catheter (e.g., Foley). Goal is 0.5mL/kg/hr output adults, 1mL/kg/hr children

Wound Care – Do not remove adherent clothing. Warm, dry dressings over burns - NO wet dressings

Special Considerations:

- Closed space exposure assume carbon monoxide and/or cyanide toxicity - provide 100% oxygen*
- High-voltage electrical – assume rhabdomyolysis and assess for internal injuries. Normal saline resuscitation untl clear urine output 1-2 mL/kg/hr. Monitor creatine kinase, serum bicarbonate and creatinine. Consult with burn/referral center for ongoing management

*Consult Minnesota Regional Poison Control Center at 1-800-222-1222.

Secondary Assessment – Critical Burn Features?

- >20% BSA second and/or third degree burns
- Intubated patient, inhalational injury, or prolonged closed-space smoke exposure
- Co-existing major trauma, rhabdomyolysis, or other complications
- Hemodynamic instability not responding to fluid resuscitation

Yes

No

High Priority For Transfer To Burn Center

- Continue fluid resuscitation and analgesia
- Escharotomies may be required to allow ventilation of patients with circumferential neck, chest or abdominal burns
- Arrange transfer and consultation
- Some patients in this category may be triaged to receive only palliative care (until/unless additional resources become available)

Secondary Priority For Transfer

- May have to manage in place awaiting transfer (24-48 hours)
- Obtain consultation from burn center - MDH may organize hotline/alternative resources during mass casualty incidents
- Cover burns with clean dry linens - no immediate dressings are necessary if transferred in the first 24 hours - after 24 hours consider bacitracin dressings per burn consultation
- Monitor urine output and provide IV fluids to maintain parameters as above
- Infection control – providers should gown, glove, and mask
- Follow cardiorespiratory and renal function
- Maintain body temperature
- Consider early use of enteral/tube feedings if oral intake inadequate
- Analgesia
- Circulation, Motor and Sensory function (CMS) checks
- Evaluate for other injuries

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PEDIATRICS
REGIONAL RESOURCE CARD

Resource cards are intended to provide incident-specific tactics and planning information to supplement the general strategy cards. They are organized according to the 'CO-S-TR' framework of incident response planning – http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=8844490&fulltextType=RA&fileId=S193578930000135X

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis

Command, Control, Communication, Coordination	**Planning and response considerations:**
	Tertiary centers with inpatient pediatric, trauma and PICU capability can provide consultation and transfer support based on patient needs. The following centers can provide real-time consultation in support of pediatric critical care when transfer is difficult or not possible or when highly specialized services (e.g. ECMO) are anticipated to be needed.
	• Pediatric hospital resources in Minnesota:
	  • Level I Pediatric Trauma Centers – Hennepin County Medical Center, Mayo Clinic Eugenio Litta Children's Hospital, Gillette Children's/Regions Hospital, Children's Hospitals and Clinics of Minnesota
	  • University of Minnesota Amplatz Children's Hospital
	  • St. Mary's Children's Hospital Duluth (Essentia)
	  • Other tertiary centers with inpatient pediatric and PICU capability
	• Pediatric patients will have to be stabilized (and in some cases treated, for 24 to 48 hours) at initial receiving hospital in major incident – all facilities must be prepared for pediatric cases
	• Facility procedures for patient tracking, unaccompanied minors, and release of minors to family/caregivers
	• Smaller incidents – facility-to-facility coordination
	• Metro - Regional Hospital Resource Center (RHRC) will coordinate transfers of patients to concentrate as many pediatric patients as possible at, or close to, pediatric centers per Metropolitan Cooperative Pediatric Plan (concentrate those less than 5 years of age and critically ill at children's hospitals)
	• Statewide incident impact
	  • MDH will work with Regional Healthcare Preparedness Coordinators (RHPCs) and hospitals/healthcare coalitions to facilitate patient and resource distribution
	  • Statewide consultation/referral hotline may be initiated as needed
		Prepare			

Space	**Space:** • Use maximal beds on pediatric unit and at pediatric centers noted above • Prioritize transfer of children < 8 years of age to pediatric specialty centers • Surge to non-pediatric, age-appropriate units within hospital • Distribute non-critical and older pediatric patients from overwhelmed pediatric centers to other accepting facilities • Expand acute outpatient care for the minimally injured/ill • Forward movement to regional pediatric centers in adjoining states as required to assure appropriate ongoing care – in coordination with MDH-OEP and Great Lakes Healthcare Partnership (FEMA V – MN, WI, IL, IN, OH, MI and city of Chicago) and/or National Disaster Medical System (NDMS) patient movement for catastrophic incident (unlikely to only affect pediatric portion of population)	*Adapt* *Conserve* *Substitute*			

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PEDIATRICS
REGIONAL RESOURCE CARD

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

<table>
<tr><th>Category</th><th>RESOURCE and RECOMMENDATIONS</th><th>Strategy</th><th>Conventional</th><th>Contingency</th><th>Crisis</th></tr>
<tr><td rowspan="2">Supplies</td><td>

Outpatient Supply Planning:

- Consider expansion of outpatient pediatric-specific supplies (e.g., crutches, pediatric-specific forms of analgesics) at facility to support discharged patients

Inpatient Supply Planning:

- Institutions should prepare based on role in community
- As a minimum, recommend each facility be prepared to care for the number of victims listed in the table below, based on their designated trauma level in the MN Trauma System.

<table>
<tr><th rowspan="2">Inpatient Type</th><th colspan="4">Minnesota State Trauma Designation</th></tr>
<tr><th>Level I</th><th>Level II</th><th>Level III</th><th>Level IV</th></tr>
<tr><td>Critical Injuries < age 8 yrs</td><td>8</td><td>6</td><td>4</td><td>2</td></tr>
<tr><td>Moderate Injuries < age 18 yrs</td><td>20</td><td>15</td><td>10</td><td>5</td></tr>
<tr><td>Minor Injuries < age 18 yrs</td><td>20</td><td>15</td><td>10</td><td>5</td></tr>
<tr><td>Infants < age 1 yr</td><td>4</td><td>3</td><td>2</td><td>1</td></tr>
</table>

</td><td rowspan="2">Prepare</td><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td></tr>
<tr><td>

The American Academy of Pediatrics/American College of Emergency Physicians recommended equipment list at http://pediatrics.aappublications.org/content/107/4/777.full.pdf+html is the basis for planning, with emphasis on:

- Airway equipment sufficient for number and age of victims
- Vascular access equipment, including adequate quantity of intravenous cannulas and intraosseous needles
- References, charts, or other systems for size/weight-based equipment and drug dosing (reference book, wall charts, Broselow tape, or similar)
- External warming devices (such as Bair-hugger™)
- State trauma system guidelines also identify pediatric equipment expectations

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</table>

PEDIATRICS
REGIONAL RESOURCE CARD

MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Staff	**Staff:** • Pre-incident pediatric medical/trauma critical care training should be conducted for physician and nursing staff expected to provide emergency care. Consider courses such as Advanced Pediatric Life Support, Pediatric Advanced Life Support • Staff that do not regularly provide pediatric emergency care but could be called upon in a disaster should receive pre-incident training and orientation to facility equipment. Scenario-based or other training (simulation and other brief, frequent training) is highly recommended • Just-in-time training may be required in certain situations for non-pediatric nursing and physician staff reinforcing key points of pediatric or incident-specific patient care (including pediatric assessment triage, importance of fluid management, urine output parameters, principles of analgesia, etc) • In a major incident, adjust pediatric physician and nurse staffing patterns as needed to provide supervision of key aspects of pediatric care. See *Staffing Strategies for Scarce Resource Situations* for further consideration; for example, have critical care staff supervise care at a higher level, delegating many bedside duties to other providers • MDH may work with in-state and adjacent state experts to set up 'hotline' to provide consultation to non-pediatric centers caring for pediatric patients (for example during pandemic) • National Disaster Medical System and/or other supplemental staff may be required to work in facilities (see *Staffing Strategies for Scarce Resource Situations*)	*Prepare* *Adapt* *Conserve* *Adapt* *Substitute*			
Special	**Consider availability of resources for:** • Social work/ family support • Psychological support for children, their families and staff (do not under-estimate the increased stress and psychological impact of a pediatric incident, particularly a mass casualty incident, on healthcare providers) • Discharge support and planning, particularly for rehabilitation and other specialty follow-up • Patient tracking and patient safety, particularly for unaccompanied minors (e.g. banding system to identify children and guardians) • Family / caregiver accommodations	*Prepare*			
Triage	**Consider early transfer to a facility providing pediatric intensive care services for:** • Progressing respiratory symptoms/hypoxia • Shock, or need for ongoing resuscitation • Critical trauma, including neurotrauma according to usual trauma triage criteria • Patients with concomitant burns should be transferred to Regions Hospital or Hennepin County Medical Center • Patients with complex underlying medical conditions may require consultation or special triage considerations	*Conserve*			

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MINNESOTA HEALTHCARE SYSTEM PREPAREDNESS PROGRAM

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Treatment	**Provide stabilizing care (airway, fluid management, analgesia, etc.) – see Pediatric Triage Card for initial priorities** **Special Considerations:** • Airway/Breathing and Circulation (ABCs) are still critical – do not deviate from usual trauma/critical care priorities due to size/age/behavior concerns • Pediatric airways are small; there is little room between partial and complete obstruction • Age and height-based estimations are NOT always accurate – always be prepared with a range of equipment sizes, especially for airway interventions • Assess skin color, capillary refill and heart rate for signs of poor perfusion. Hypotension is a late sign of shock in pediatric patients • Typically, pediatric patients respond to treatments more quickly than adults. Reassess them frequently and alter treatments to fit the response • Monitor for signs of pain and treat pediatric patients with analgesics via weight-based guidelines, then titrate to effect. Pediatric pain is often inadequately treated • Hypoglycemia and hypothermia are very common –anticipate, prevent, and correct as necessary • Monitor IV fluids carefully to control volume delivered in smaller patients (e.g., IV pumps or buretrols) • Double-check medication doses with team members, especially with medication drips as significant errors are common. DO NOT exceed maximum adult dose • Assessment may be difficult due to age-related and communication-related issues – history from the family/caregivers may be critical • Do not separate the child from family/guardian if at all possible • Medical alert bracelets and care plans should be sought for all children	*Prepare*			
Transportation	**After stabilizing care, assess need for transfer:** • Plan for oxygen, fluids, and analgesia requirements in transport • Consider need for airway intervention prior to transport • Consider plans for caregivers/family transportation • A mass casualty incident may affect more than one facility requiring coordination with regional healthcare coalitions to prioritize transportation and manage logistics via Multi-Agency Coordination • Regional transfer coordination may be required in major disasters – MDH Office of Emergency Preparedness will assist regional healthcare coalitions and involve appropriate State and Federal (NDMS) resources; in certain situations (such as pandemic, major mass casualty incident) patients may have to receive care in non-pediatric centers • Ensure that targeted medical record information (including name, allergies, medications given, current medications, age and family contact information) is always with patient • Arrange transport via air medical transport as appropriate – if multiple institutions affected coordinate with regional healthcare coalition and/or multi-agency coordination system	*Prepare* *Adapt*			

PEDIATRIC TRIAGE CARD For Mass Casualty Situations

Patient Arrives / Initial Assessment

High Risk Features? *

- Hypoxia or respiratory distress
- Multiple injuries or high-energy mechanism
- Signs of hypoperfusion / shock (may be isolated to tachycardia)
- Altered mental status

* Consultation may be warranted for age <5 years, or underlying complex illness/disease (congenital abnormality, etc.)

Yes →

No ↓

Minor:

- Assessment, treatment and observation
- Address psychosocial needs; re-unify with family; support as needed
- Discharge, if able, to secure environment if parent/guardian not accompanying

Initial interventions:

Airway – Assess and position airway; airway interventions as needed. Children < 5 years have small airways that do not tolerate edema well. Reassess frequently

Breathing – Assess for evidence of respiratory distress (retractions, hypoxia, grunting). Provide oxygen, bronchodilators (e.g., albuterol, epinephrine) and other interventions as needed

Circulation – Assess for signs of hypoperfusion including capillary refill, vital signs, pulses, etc. Fall in blood pressure is late and end-stage. Treat signs of hypoperfusion aggressively with 20 mL/kg normal saline (and 10 mL/kg packed red blood cells if hemorrhagic shock persists after initial boluses of saline), see Fluid Management below

Disability – Assess neurologic status (including sensation and motor) and need for cervical spine protection

Decontamination – Consider for chemical/radiologic – brush away loose material, then copious water. Consult Poison Control Center at 1-800-222-1222

Expose - Remove clothing, jewelry and, if mental status altered, contact lenses. Protect from heat loss; hypothermia is common

Fluids – IV fluids (see Fluid Management below)

Family – Avoid separating family/guardians from patients. Identify and notify patient's family/guardians of patient's status when possible

Glucose – Check fingerstick glucose for all significantly ill/injured children. Correct hypoglycemia

History – Note mechanism and time of injury, treatments pre-hospital, underlying diseases, tetanus status, medications/allergies, social history, family history, immunization history

Orogastric – Tube for all intubated patients (due to usual gastric distension)

Pain control – Titrated opioid analgesia, IV, intranasal, or subcutaneous as required for comfort (e.g., morphine 0.1 mg/kg or fentanyl 1 mcg/kg IV)

Temperature/Thermal – Protect from heat losses; initiate cooling/rewarming or anti-pyresis as indicated. Children lose body heat rapidly

Urine output– Target urine output to 0.5 - 1 ml/kg/hour. Indwelling urinary cathether as needed

↓

Secondary Assessment – Critical illness/injury?

- Intubated or progressive respiratory failure
- Multiple organ systems affected
- Surgical emergency
- Evidence of shock (poor perfusion, high lactate, persistent tachycardia) not responding to fluid resuscitation

Yes →

High Priority for Transfer to Pediatric Center

- Continue fluid resuscitation
- Arrange transfer and consultation
- May have to provide transfers, triage resources, or even provide palliative care as only intervention based on scope of injury/nature of incident. Re-triage as more resources become available or condition changes.

No ↓

Secondary Priority for Transfer

- May have to manage in place awaiting transfer (24-48 hours) (e.g. isolated orthopedic injuries)
- Obtain consultation from pediatric referral center (during mass casualty incident MDH may organize hotline)
- Diagnostic studies as indicated (minimize ionizing radiation without omitting necessary studies)
- Monitor urine output and provide IV fluids (see Fluid Management)
- Infection control – providers should gown, glove and mask as appropriate for illness/injury
- Follow cardiorespiratory and renal function, Circulation, Motor and Sensory function (CMS) and glucose checks at regular intervals
- Maintain body temperature
- Analgesia
- Psychological triage and support/family support

Fluid Management

- Initial fluid for resuscitation – normal saline
  - Initial bolus 20 mL/kg, repeat as needed
  - May initiate packed red blood cells 10 mL/kg if hemorrhage not responding to 40 mL/kg saline total bolus
- Maintenance fluid rate
  - 4 mL/kg/hr first 10 kg (40 mL/hr)
  - 2 mL/kg/hr second 10kg (20+40 = 60 mL/hr)
  - 1 mL/kg/hr each kg >20 kg
- Glucose replacement IV/IO
  - Neonate D10W 3 mL/kg
  - Under 4 years D25W 2mL/kg
  - ≥ 4 years D50W 1 mL/kg
- Goals – normal vital signs, urine output 0.5-1 mL/kg/hr

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Resource list of pediatric emergency equipment:
http://pediatrics.aappublications.org/content/107/4/777.full.html

For pediatric planning, response poster and materials, refer to MDH Pediatric Primer:
http://www.health.state.mn.us/oep/healthcare/pedsprimer.docx

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PALLIATIVE CARE
REGIONAL RESOURCE CARD

Resource cards are intended to provide incident-specific tactics and planning information to supplement the general strategy cards. They are organized according to the 'CO-S-TR' framework of incident response planning – http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=8844490&fulltextType=RA&fileId=S193578930000135X

Orientation to Specialty and Goals:

NOTE:
This card provides a focused description of palliative care management principles in disaster situations. These principles are relevant to all patients, as well as those who may receive palliative care as their only intervention due to demand on the healthcare system relative to their prognosis.

Specialty Description:
Palliative care has a goal of providing the best possible quality of life for people facing the pain and stress of a serious, but not necessarily terminal, medical condition. It can be appropriate for patients of any age and at any stage of an illness - from diagnosis on - and can be provided along with treatments for the medical condition.

Index:

Principles of Palliative Care:

- **Palliative care should be provided to ALL patients.**
- In a subset of patients, it may be the only care that is able to be provided due to the patient's prognosis and available resources
- Focuses on human contact and comfort in addition to medical care
- Increases the physical and mental well-being of the patient
- Is not abandonment or euthanasia, and does not aim to hasten death (though in some cases, the doses required to relieve severe symptoms may indirectly contribute to the dying process; however, this meets the ethical criteria for the double-effect principle where indirect harm is permissible in the service of a greater good)
- Relieves symptoms and provides physical comfort measures such as control of pain, nausea, dyspnea, temperature regulation, and positioning
- Assures respectful care, reassurance, and emotional and social support as possible

Disaster Considerations:

- Symptom support should be maintained in hospital and non-hospital environments – this will involve planning by outpatient entities such as hospice care, pharmacies, medical equipment providers as well as inpatient entities such as palliative care programs
- For existing hospice patients, the spectrum of care should be defined
- For those designated to receive only palliative care key considerations are:
  - ◊ Expected survival - hours, days, or weeks – this helps to guide needs, referrals, and resources
  - ◊ Required interventions – this helps guide location of care and support planning
  - ◊ Basis for designation – if the decision for palliative care is based on the lack of a single resource, there must be a plan for re-assessment if the patient's condition improves or more resources become available (i.e., would they qualify to receive additional treatment if more resources become available and how are they contacted/monitored) - see triage tree below
- Home health and other agencies will need to prioritize services relative to hospice patients during a disaster (as this can have significant impact on patient/family/agency planning)
- Supportive measures should be offered that maintain comfort, but do not prolong the dying process
  - ◊ If death is inevitable, there may be no point in providing intravenous fluids
  - ◊ **If death is not certain, other forms of support may be very reasonable as other resources become available**

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PALLIATIVE CARE
REGIONAL RESOURCE CARD

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis

Planning Resources	**Planning Resources:**
	• General palliative care resources and fact sheets
	  • End of Life/Palliative Education Resource Center (EPERC) - Medical College of Wisconsin http://www.eperc.mcw.edu/EPERC/FastFactsandConcepts
	• General recommendations for home care/family based care and infectious prevention
	  • Home Care Guide: Providing Care at Home http://www.minneapolismn.gov/www/groups/public/@health/documents/webcontent/wcms1p-088274.pdf
	• ICU care
	  • Improving Palliative Care in the ICU (IPAL-ICU project) http://www.capc.org/ipal-icu
	• General resources in palliative care and non-pharmacologic intervention
	  • Innovations in End-of-Life Care: Practical Strategies and International Perspectives http://www2.edc.org/lastacts/ http://www2.edc.org/lastacts/archives/archivesJuly02/nonpharm.pdf
		Prepare			

Planning / Communications and Coordination	**Key Minnesota Organizations:** • Minnesota Network of Hospice & Palliative Care (www.mnhpc.org) • Inpatient palliative care programs: Palliative care MD on 24 hour pager for most facilities/systems • Hospice programs: Majority of State has hospice program coverage and most programs usually have hospice MD on 24 hour pager - check with hospital health systems main contact/referral phone line	*Prepare*			

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PALLIATIVE CARE
REGIONAL RESOURCE CARD

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Communications and Coordination	**Communications and Coordination:** • Close coordination between hospitals, home care agencies, and public health is required prior to and during disasters in which increased home care and at-home palliative and hospice services are expected • Communications, including printed materials and a mechanism for ongoing situational awareness, are required during contingency and crisis events – this may involve conference calls or other means of keeping stakeholder agencies informed and up-to-date • In major disasters requiring proactive triage to palliative care only, MDH may provide additional guidance and incident-specific resources, which may include a hotline for advice and consultation about palliative care issues. Additional resources for families providing home care would also need to be made available by local and state public health and major healthcare systems **Communications with Families and Patients:** • Review advance care planning in the context of the current situation – proxy designations, advance directives, Physician Orders for Life-Sustaining Treatment (POLST) forms, http://www.mnmed.org/KeyIssues/POLSTCommunications/tabid/3291/Default.aspx. • Interventions able to be offered may not fulfill all of the preferences expressed in those directives http://www.health.state.mn.us/divs/fpc/profinfo/advdir.htm • Describe palliative support as a quality of life and aggressive symptom management framework that is not related to hastening death or euthanasia • Incorporate relevant cultural variables into palliative care plans • Proactively provide families and patients with up-to-date information on the resources in shortage and any relevant triage criteria/processes being used, as well as any necessary infection prevention measures • Explain the basis of triage decisions and any re-assessment or potential options. Re-frame goals of care with patient and family • Maintain hope despite changes in treatment/goals - factors that often decrease hope include feeling devalued, abandoned or isolated (“there is nothing more that can be done”), lack of direction and goals, and unrelieved pain and discomfort	*Prepare* *Adapt*			

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PALLIATIVE CARE
REGIONAL RESOURCE CARD

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Space	**Inpatient Space:** In crisis situations there may be a large number of patients that are receiving palliative care only – cohorted spaces may be an option for these patients. These areas should be: • Comfortable – the maximal physical comfort should be provided to patients and families and the environment and equipment should be as comfortable as possible given the resources available • Private – as much privacy as possible should be planned for the patients and families **Outpatient Space:** Facilities should have plans in place with home healthcare agencies as well as plans for family provision of palliative care. This may include: • Home care/hospice agencies should prioritize services to those with the most limited support or more intensive support needs during a disaster (e.g., prioritize services to those requiring intravenous fluids or medications, oxygen, or other high-intensity therapies - if these can be maintained during the disaster) • Phone banks and other indirect support services for families and patients **Transitions:** • When inpatients are receiving palliative care as their only treatment, they must be cared for in a space appropriate to their remaining life expectancy (i.e., patients with hours to live would not be moved, and patients with days or weeks remaining would be moved to another inpatient area or to home/outpatient care) • Access to pre-printed information for families guiding them in the provision of comfort care including: ◊ Analgesia and other medication dosing per physician or other instructions ◊ General information about prevention of decubitus ulcers and maintenance of comfort ◊ The dying process, what to expect, and what to plan for ◊ Resources that the family can use in case of questions or problems • Assure that appropriate infection prevention precautions are accounted for (e.g. droplet precautions)	*Adapt* *Conserve* *Adapt* *Substitute* *Adapt* *Conserve*			
Supplies	**Supplies:** There is no substitute for pre-event stockpiling of medications to treat key symptoms. *Every* disaster will require significant quantities of analgesics. The availability of adequate pain and symptom relief should be a key area of disaster planning. **Inpatient and Outpatient:** Anticipate the need for additional stocks of medications to provide analgesia and symptom relief for all patients. Inexpensive but critical medications to stockpile include: • Oral non-opioid analgesics (also valuable as anti-pyretics) • Opioid analgesics • Benzodiazepines • Anti-psychotics • Anti-emetics • Steroids • Diuretics Outpatient pharmacies should anticipate the need for increased supplies of these agents and support palliative care dosing of these agents that may be in excess of usual recommendations. • Avoid stockpiling or hoarding in the setting of increased demand.	*Prepare* *Adapt*			

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PALLIATIVE CARE
REGIONAL RESOURCE CARD

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Staff	**Staff:** • Physician and nursing staff expected to provide disaster palliative care should receive pre-incident palliative care training • Staff that do not regularly provide palliative care, but could be called upon in a disaster, should receive pre-incident training and orientation to facility resources • The facility should identify subject matter experts within their facility/area and obtain their input into palliative care planning. During a response, these experts can provide input on strategies and tactics, as well as provide overall clinical guidance and expertise	*Prepare*			
	• Faith-based and other community resources for non-clinical support may be critical assets for those receiving care at home • Spiritual resources should be made available to both patient and family if desired and feasible • Just-in-time training should be provided to nursing and physician staff as required to acquaint them with palliative care priorities, medication dosing, and other issues	*Conserve* *Adapt* *Substitute*			
	• Hospice agencies should have plans to adjust staff roles and triage services provided in response to increased demand • In case palliative care areas are activated, support these areas with staff that are comfortable with medication administration that can be supervised by staff with more experience. Precise recommendations on staffing are difficult as the needs of the patients can vary greatly, but every attempt should be made to provide adequate personnel to meet the comfort needs of patients – this may involve tiered use of professional and non-professional staff • Additional staff may have to be drawn from other institutions or fields, or from the Medical Reserve Corps (e.g., to provide broader support to homecare). These staff will also require just-in-time training • Regionally, palliative care teams that can support a facility in crisis or support additional outpatient care may be advantageous	*Conserve* *Adapt* *Substitute*			

Special	**Special:**
	When triage to 'palliative care only' in disasters is not by patient choice, management of expectations and transitions is critical to the physical and mental well-being of patient, family, and providers.
	• Consider availability of resources for:
	  • Social work/family resources
	  • Spiritual support
	  • Psychological support for patients and their families
	  • Discharge and/or death support and planning
	  • Family/caregiver accommodations
	  • Psychological support for staff
		Prepare			

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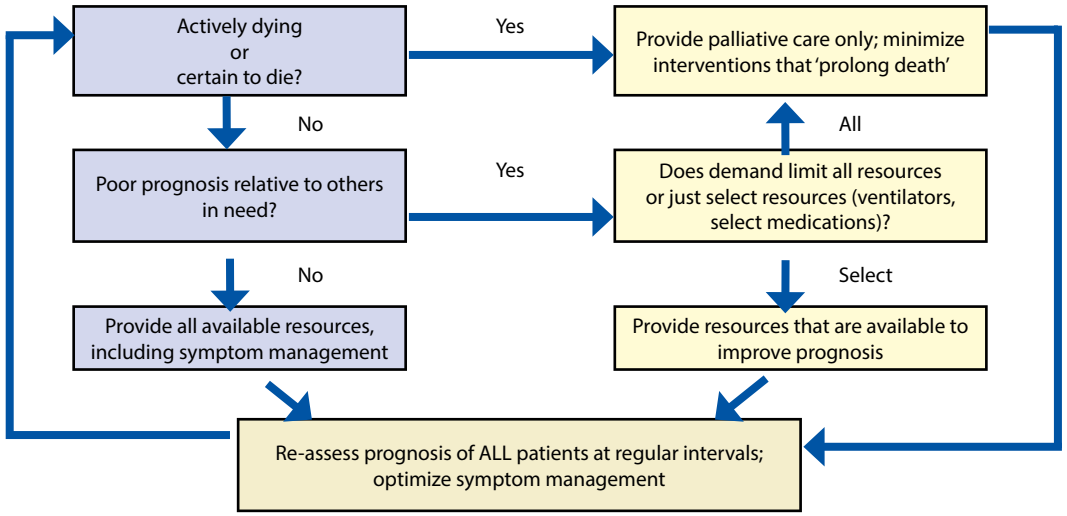
PALLIATIVE CARE
REGIONAL RESOURCE CARD

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Triage	**Triage:** • The need for palliative care should be anticipated in all disaster scenarios • Triage decisions may be required in minutes (multiple burn victims), over hours (many trauma victims), or over days or weeks (pandemic) • When it is clear that the volume of patients and current level of resources will require prioritizing some patients to palliative care only, triage criteria should be developed whenever possible and a formal triage team put in place (proactive measures may not be possible in the early phase of an incident, but should be implemented as soon as possible) • Location for palliative care should be optimized given the constraints of the incident – patients may be triaged to home, to other facilities, to inpatient units, or to other locations • Triage is dynamic. As resources allow, it is critical to re-triage patients so that they may receive resources that have become available. Predicted prognosis does not equate with actual outcome in many cases. (See triage tree below) **Triage Tree - Resource-dependent palliative care considerations**  	*Conserve* *Re-allocate* *Adapt*			

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Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
Treatment	**Treatment:** **Provide Symptomatic Management:** • Do not under-estimate the psychological impact on patients, caregivers and family of these situations. All of these persons may require medical and non-medical treatment for anxiety, grief, complicated grief, post-traumatic stress disorder and mental health issues due to the stress of these events • Treatment with appropriate doses of medication is important – see the opiate dosing references below as an example, but after initial doses, titrate to appropriate symptom relief as required, rather than to any specific recommended dose of medication • Adapt with the medications and resources that are available • Web resource for treatment: Medical College of Wisconsin End of Life / Palliative Educational Resource Center (EPERC) - http://www.eperc.mcw.edu/EPERC/FastFactsandConcepts **General Pain Management:** • 'WHO ladder' for pain relief ◊ For mild pain (unless contraindicated) use aspirin, acetaminophen or nonsteroidal anti-inflammatory agents ◊ If pain persists (mild to moderate) add oxycodone, hydrocodone, or similar oral opioids ◊ If pain is not controlled, increase the opioid dose (may consider oral hydromorphone or morphine) ◊ Add adjuvant medications to medication regimen as possible/needed to reduce opioid requirements • The patient's report of pain is the standard assessment tool to gauge if the pain management regime is adequate • Pediatric and unresponsive/non-verbal patients require alternate methods of assessment of non-verbal cues of distress • Numerical distress or visual/analog scales can provide standardized assessment • Adjuvant medical (anti-depressants, etc.) and non-medical treatments (acupuncture, etc.) may be valuable – expert consultation should be obtained in disasters where a longer timeframe allows these treatments to be implemented • Provision of non-medical comforts (company, quiet environment or music, pillows, etc.) is a critical component of palliative care and should be optimized according to patient needs **Opioid Management Principles for Disaster Situations:** • Oral morphine is the standard opioid from which potencies and conversion ratios are based for most other opioid medications • Opioids can be given by almost every possible route – oral, sublingual, intravenous, intranasal, intramuscular, rectal, or subcutaneous • Pain equivalence tables can vary. Incomplete cross tolerance exists when converting between different opioids – consider dose reductions of 25 – 50% for initial doses when switching drugs (depending on clinical circumstances)	*Prepare* *Adapt*			

Category	RESOURCE and RECOMMENDATIONS	Strategy	Conventional	Contingency	Crisis
	• Opioids typically do not have ceiling effects for analgesia. Limitations are usually related to side effects or intolerances • Patients with sustained-release opioid needs usually require short-acting opioid for breakthrough pain as well as for dose-finding for long-acting opioid dose adjustments. Short-acting breakthrough dose should typically be 10 -15 % of total 24 hour daily requirement of the sustained-release opioid • When dosing with opioids, remember common side effects and treat accordingly (e.g., constipation, nausea, pruritis, confusion, sedation). Respiratory depression is a rare event related to opioid dosing and usually occurs in the context of multiple drug class utilization, and other underlying chronic clinical conditions • Fentanyl transdermal patches require good adipose stores to be effective, as the real physiologic reservoir is underlying adipose tissue. If patients are thin, think of other opioid options • Best opioids to consider in the face of renal insufficiency include methadone, fentanyl, and dilaudid • Breakthrough dose: ⅓ to ½ of the twelve hour dose or 10-15 % of the 24 hour dose (if >3 breakthrough doses per 24 hr period consistently required, consider retitration of dose) • Titrating dosage, may use the following guideline: (Pain scores from 1-10 with 10 being worst imaginable) Pain > 7 Increase dose by 50% to 100% Pain 4 – 7 Increase dose by 25% to 50% Pain < 4 Increase dose by 25% if indicated/desired • Once a patient has 2 or fewer breakthrough doses and a steady state of medication has been reached, then a continuous release equianalgesic opioid may be initiated. Always start with an instant release before switching to continuous release. Note that continuous release opioids do not have mg/mg equivalence - e.g. a patient requiring 60mg of morphine elixir each day would not be started on 60mg of MS Contin as an equivalent dose • Switch from fixed combination acetaminophen/opioids to a single entity opioid when acetaminophen dose > 3000 - 4000 mg / day or as weight appropriate • Avoid fixed dose combination analgesics in pediatric patients when possible to allow more effective titration and avoid excess acetaminophen dosing • Consider use of methadone where available particularly for outpatient management of pain	*Prepare* *Adapt*			
Tracking	**Tracking:** • Assure that patients referred to home care (formally or informally) are tracked by public health and the appropriate agencies	*Prepare*			

Key Symptoms and Treatments:

Symptom	Pharmacologic Options	Additional Strategies
Pain	See 'WHO ladder' on page 7	Integrative therapies, acupuncture, hypnosis, interventional techniques, music therapy, heat/cold therapy, supportive caring
Dyspnea	Opioids and oxygen are standard therapy, additional agents of benefit may include benzodiazepines, bronchodilators, and nebulized furosemide (20 mg IV solution with 3 mL normal saline every 4 hours as needed)	Treat underlying cause, oxygen, direct air from fan onto face; integrative therapies, hypnosis.
Nausea	Serotonin antagonists (ondansetron), substance P antagonists (apprepitant), dopamine antagonists (procholorperazine), butyrophenones (haloperidol), corticosteroids, benzodiazepines, atypical antipsychotics (olanzapine), cannabinoids, anti-histamines (meclizine) , anticholinergics (scopolamine), substituted benzamide (metoclopramide)	Treat underlying cause; consider interventional options depending on underlying cause (e.g., small bowel obstruction consider nasogastric tube), integrative therapies, hypnosis, acupuncture, music therapy, supportive caring. Consider constipation as possible etiology if on chronic opioids.
Anxiety	Benzodiazepines, atypical antipsychotics, cannabinoids, anti-depressants	Treat underlying cause, spiritual support, supportive caring, integrative therapies, hypnosis, relaxation techniques, music therapy
Agitation / Delirium	Haloperidol, atypical antipsychotics, sedatives	Provide quiet, dark environment, hydration, support sleep hygiene, minimize stimulation, consider calming soft music Identify specific underlying cause if possible: • Benzodiazepine paradoxical agitation - consider discontinuing • Opioid neurotoxicity - consider opioid rotation • Steroid psychosis - consider dose change or elimination • Opioid withdrawal - consider tapering doses
Constipation	Docusate sodium, sennosides, polyethylene glycol, lactulose, magnesium citrate, bisacodyl, glycerine, enemas	Treat underlying conditions, hydration, consider subcutaneous methylnaltrexone for chronic opioid-induced constipation – ensure no mechanical obstruction re: risk of perforation (risk higher in patients on steroids)
Diarrhea	Loperamide 2 mg tablets if not contraindicated. Other interventions according to cause.	Determine underlying cause and potential therapies
Secretion control	Sublingual atropine; 1% eye drops 2-3 drops every 3-4 hours as needed; glycopyrolate (IV 0.4 mg every 4-6 hours, oral 2 mg every 8 hours or appropriate weight-based dose); scopolamine patch	Education for family regarding: death rattle, reposition in bed, very gentle suction +/-, mouth care
Skin breakdown / protection		Treat underlying cause, gentle repositioning, supportive pads, air mattress, specialty beds
Active dying	Aggressive supportive care depending needs. Do not 'prolong dying process' with on-going therapies such as transfusions, IV fluids, artificial nutrition, antibiotics. Stop medications that have no bearing on symptom support management. Focus on the 'patient as person' – not on clinical indicators. Oxygen does not offer symptom benefit for actively dying patients and oxygen delivery devices can be uncomfortable and cause sensations of claustrophobia.	Supportive care of family, education about dying process, spiritual support, psychosocial support, company, listening, storytelling, silence, companionship. Discontinue monitors and vital signs documentation.

DOSE CONVERSION TABLE FOR SELECTED OPIOIDS

(Consider dose reduction between opioid in view of incomplete cross tolerance)

Hydromorphone IV (mg / day)	Hydromorphone PO (mg/day)	Morphine IV (mg/day)	Morphine PO (mg/day)	Fentanyl* Transdermal (mcg/hr)	Oxycodone PO (mg/day)
2.5	12.5	17	50	25	30
5	25	33	100	50	65
7.5	37.5	50	150	75	100
10	50	67	200	100	130
12.5	62.5	83	250	125	165
15	75	100	300	150	200
17.5	87.5	117	350	175	230
20	100	133	400	200	265
22.5	112.5	150	450	225	300
25	125	167	500	250	330
27.5	137.5	183	550	275	360
30	150	200	600	300	400

* Transdermal Fentanyl absorption and response may vary depending on amount of adipose tissue present (i.e. better absorbed in patients with more adipose tissue, worse absorption in thin patients). Also, consider dose reduction (e.g. 25%) if transitioning from transdermal patch to oral opioid equivalent

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JAMA | Original Investigation | CARING FOR THE CRITICALLY ILL PATIENT

Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus–Infected Pneumonia in Wuhan, China

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IMPORTANCE In December 2019, novel coronavirus (2019-nCoV)–infected pneumonia (NCIP) occurred in Wuhan, China. The number of cases has increased rapidly but information on the clinical characteristics of affected patients is limited.

OBJECTIVE To describe the epidemiological and clinical characteristics of NCIP.

DESIGN, SETTING, AND PARTICIPANTS Retrospective, single-center case series of the 138 consecutive hospitalized patients with confirmed NCIP at Zhongnan Hospital of Wuhan University in Wuhan, China, from January 1 to January 28, 2020; final date of follow-up was February 3, 2020.

EXPOSURES Documented NCIP.

MAIN OUTCOMES AND MEASURES Epidemiological, demographic, clinical, laboratory, radiological, and treatment data were collected and analyzed. Outcomes of critically ill patients and noncritically ill patients were compared. Presumed hospital-related transmission was suspected if a cluster of health professionals or hospitalized patients in the same wards became infected and a possible source of infection could be tracked.

RESULTS Of 138 hospitalized patients with NCIP, the median age was 56 years (interquartile range, 42-68; range, 22-92 years) and 75 (54.3%) were men. Hospital-associated transmission was suspected as the presumed mechanism of infection for affected health professionals (40 [29%]) and hospitalized patients (17 [12.3%]). Common symptoms included fever (136 [98.6%]), fatigue (96 [69.6%]), and dry cough (82 [59.4%]). Lymphopenia (lymphocyte count, 0.8 × 10^9/L [interquartile range {IQR}, 0.6-1.1]) occurred in 97 patients (70.3%), prolonged prothrombin time (13.0 seconds [IQR, 12.3-13.7]) in 80 patients (58%), and elevated lactate dehydrogenase (261 U/L [IQR, 182-403]) in 55 patients (39.9%). Chest computed tomographic scans showed bilateral patchy shadows or ground glass opacity in the lungs of all patients. Most patients received antiviral therapy (oseltamivir, 124 [89.9%]), and many received antibacterial therapy (moxifloxacin, 89 [64.4%]; ceftriaxone, 34 [24.6%]; azithromycin, 25 [18.1%]) and glucocorticoid therapy (62 [44.9%]). Thirty-six patients (26.1%) were transferred to the intensive care unit (ICU) because of complications, including acute respiratory distress syndrome (22 [61.1%]), arrhythmia (16 [44.4%]), and shock (11 [30.6%]). The median time from first symptom to dyspnea was 5.0 days, to hospital admission was 7.0 days, and to ARDS was 8.0 days. Patients treated in the ICU (n = 36), compared with patients not treated in the ICU (n = 102), were older (median age, 66 years vs 51 years), were more likely to have underlying comorbidities (26 [72.2%] vs 38 [37.3%]), and were more likely to have dyspnea (23 [63.9%] vs 20 [19.6%]), and anorexia (24 [66.7%] vs 31 [30.4%]). Of the 36 cases in the ICU, 4 (11.1%) received high-flow oxygen therapy, 15 (41.7%) received noninvasive ventilation, and 17 (47.2%) received invasive ventilation (4 were switched to extracorporeal membrane oxygenation). As of February 3, 47 patients (34.1%) were discharged and 6 died (overall mortality, 4.3%), but the remaining patients are still hospitalized. Among those discharged alive (n = 47), the median hospital stay was 10 days (IQR, 7.0-14.0).

CONCLUSIONS AND RELEVANCE In this single-center case series of 138 hospitalized patients with confirmed NCIP in Wuhan, China, presumed hospital-related transmission of 2019-nCoV was suspected in 41% of patients, 26% of patients received ICU care, and mortality was 4.3%.

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In December 2019, a cluster of acute respiratory illness, now known as novel coronavirus–infected pneumonia (NCIP), occurred in Wuhan, Hubei Province, China.[1-5] The disease has rapidly spread from Wuhan to other areas. As of January 31, 2020, a total of 9692 NCIP cases in China have been confirmed. Internationally, cases have been reported in 24 countries and 5 continents.[6] On January 3, 2020, the 2019 novel coronavirus (2019-nCoV) was identified in samples of bronchoalveolar lavage fluid from a patient in Wuhan and was confirmed as the cause of the NCIP.[7] Full-genome sequencing and phylogenic analysis indicated that 2019-nCoV is a distinct clade from the betacoronaviruses associated with human severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS).[7] The 2019-nCoV has features typical of the coronavirus family and was classified in the betacoronavirus 2b lineage. The 2019-nCoV has close similarity to bat coronaviruses, and it has been postulated that bats are the primary source. While the origin of the 2019-nCoV is still being investigated, current evidence suggests spread to humans occurred via transmission from wild animals illegally sold in the Huanan Seafood Wholesale Market.[8]

Huang et al[9] first reported 41 cases of NCIP in which most patients had a history of exposure to Huanan Seafood Wholesale Market. Patients' clinical manifestations included fever, nonproductive cough, dyspnea, myalgia, fatigue, normal or decreased leukocyte counts, and radiographic evidence of pneumonia. Organ dysfunction (eg, shock, acute respiratory distress syndrome [ARDS], acute cardiac injury, and acute kidney injury) and death can occur in severe cases.[9] Subsequently, Chen et al[8] reported findings from 99 cases of NCIP from the same hospital and the results suggested that the 2019-nCoV infection clustered within groups of humans in close contact, was more likely to affect older men with comorbidities, and could result in ARDS. However, the difference in clinical characteristics between severe and nonsevere cases was not reported. Case reports confirmed human-to-human transmission of NCIP.[10,11] At present, there are no effective therapies or vaccines for NCIP. The objective of this case series was to describe the clinical characteristics of 138 hospitalized patients with NCIP and to compare severe cases who received intensive care unit (ICU) care with nonsevere cases who did not receive ICU care.

Key Points

Question What are the clinical characteristics of hospitalized patients with 2019 novel coronavirus (2019-nCoV)–infected pneumonia (NCIP) in Wuhan, China?

Findings In this single-center case series involving 138 patients with NCIP, 26% of patients required admission to the intensive care unit and 4.3% died. Presumed human-to-human hospital-associated transmission of 2019-nCoV was suspected in 41% of patients.

Meaning In this case series in Wuhan, China, NCIP was frequently associated with presumed hospital-related transmission, 26% of patients required intensive care unit treatment, and mortality was 4.3%.

Methods

Study Design and Participants

This case series was approved by the institutional ethics board of Zhongnan Hospital of Wuhan University (No. 2020020). All consecutive patients with confirmed NCIP admitted to Zhongnan Hospital of Wuhan University from January 1 to January 28, 2020, were enrolled. Oral consent was obtained from patients. Zhongnan Hospital, located in Wuhan, Hubei Province, the endemic areas of NCIP, is one of the major tertiary teaching hospitals and is responsible for the treatments for NCIP assigned by the government. All patients with NCIP enrolled in this study were diagnosed according to World Health Organization interim guidance.[12] The clinical outcomes (ie, discharges, mortality, length of stay) were monitored up to February 3, 2020, the final date of follow-up.

Data Collection

The medical records of patients were analyzed by the research team of the Department of Critical Care Medicine, Zhongnan Hospital of Wuhan University. Epidemiological, clinical, laboratory, and radiological characteristics and treatment and outcomes data were obtained with data collection forms from electronic medical records. The data were reviewed by a trained team of physicians. Information recorded included demographic data, medical history, exposure history, underlying comorbidities, symptoms, signs, laboratory findings, chest computed tomographic (CT) scans, and treatment measures (ie, antiviral therapy, corticosteroid therapy, respiratory support, kidney replacement therapy). The date of disease onset was defined as the day when the symptom was noticed. Symptoms, signs, laboratory values, chest CT scan, and treatment measures during the hospital stay were collected. ARDS was defined according to the Berlin definition.[13] Acute kidney injury was identified according to the Kidney Disease: Improving Global Outcomes definition.[14] Cardiac injury was defined if the serum levels of cardiac biomarkers (eg, troponin I) were above the 99th percentile upper reference limit or new abnormalities were shown in electrocardiography and echocardiography.[9] For patients admitted to the ICU, the Glasgow Coma Scale, Sequential Organ Failure Assessment, and Acute Physiology and Chronic Health Evaluation II scores were determined on the day of ICU admission. The durations from onset of disease to hospital admission, dyspnea, ARDS, and ICU admission were recorded.

Presumed hospital-related transmission was suspected if a cluster of medical professionals or hospitalized patients in the same wards became infected in a certain time period and a possible source of infection could be tracked.

Real-Time Reverse Transcription Polymerase Chain Reaction Assay for nCoV

Throat swab samples were collected for extracting 2019-nCoV RNA from patients suspected of having 2019-nCoV infection. After collection, the throat swabs were placed into a collection tube with 150 μL of virus preservation solution, and total RNA was

Table 1. Baseline Characteristics of Patients Infected With 2019-nCoV

	No. (%)			
	Total (N = 138)	ICU (n = 36)	Non-ICU (n = 102)	*P* Value[a]
Age, median (IQR), y	56 (42-68)	66 (57-78)	51 (37-62)	<.001
Sex				
Female	63 (45.7)	14 (38.9)	51 (37-62)	.34
Male	75 (54.3)	22 (61.1)	53 (52.0)	
Huanan Seafood Wholesale Market exposure	12 (8.7)	5 (13.9)	7 (6.9)	.30
Infected				
Hospitalized patients	17 (12.3)	9 (25.0)	8 (7.8)	.02
Medical staff	40 (29)	1 (2.8)	39 (38.2)	<.001
Comorbidities	64 (46.4)	26 (72.2)	38 (37.3)	<.001
Hypertension	43 (31.2)	21 (58.3)	22 (21.6)	<.001
Cardiovascular disease	20 (14.5)	9 (25.0)	11 (10.8)	.04
Diabetes	14 (10.1)	8 (22.2)	6 (5.9)	.009
Malignancy	10 (7.2)	4 (11.1)	6 (5.9)	.29
Cerebrovascular disease	7 (5.1)	6 (16.7)	1 (1.0)	.001
COPD	4 (2.9)	3 (8.3)	1 (1.0)	.054
Chronic kidney disease	4 (2.9)	2 (5.6)	2 (2.0)	.28
Chronic liver disease	4 (2.9)	0	4 (3.9)	.57
HIV infection	2 (1.4)	0	2 (2.0)	>.99
Signs and symptoms				
Fever	136 (98.6)	36 (100)	100 (98.0)	>.99
Fatigue	96 (69.6)	29 (80.6)	67 (65.7)	.10
Dry cough	82 (59.4)	21 (58.3)	61 (59.8)	.88
Anorexia	55 (39.9)	24 (66.7)	31 (30.4)	<.001
Myalgia	48 (34.8)	12 (33.3)	36 (35.3)	.83
Dyspnea	43 (31.2)	23 (63.9)	20 (19.6)	<.001
Expectoration	37 (26.8)	8 (22.2)	29 (28.4)	.35
Pharyngalgia	24 (17.4)	12 (33.3)	12 (11.8)	.003
Diarrhea	14 (10.1)	6 (16.7)	8 (7.8)	.20
Nausea	14 (10.1)	4 (11.1)	10 (9.8)	>.99
Dizziness	13 (9.4)	8 (22.2)	5 (4.9)	.007
Headache	9 (6.5)	3 (8.3)	6 (5.9)	.70
Vomiting	5 (3.6)	3 (8.3)	2 (2.0)	.13
Abdominal pain	3 (2.2)	3 (8.3)	0 (0)	.02
Onset of symptom to, median (IQR), d				
Hospital admission	7.0 (4.0-8.0)	8.0 (4.5-10.0)	6.0 (3.0-7.0)	.009
Dyspnea	5.0 (1.0-10.0)	6.5 (3.0-10.8)	2.5 (0.0-7.3)	.02
ARDS	8.0 (6.0-12.0)	8.0 (6.0-12.0)	8.0 (6.3-11.3)	.97
Heart rate, median (IQR), bpm	88 (78-97)	89 (81-101)	86 (77-96)	.14
Respiratory rate, median (IQR)	20 (19-21)	20 (16-25)	20 (19-21)	.57
Mean arterial pressure, median (IQR), mm Hg	90 (84-97)	91 (78-96)	90 (85-98)	.33

Abbreviations: ARDS, acute respiratory distress syndrome; bpm, beats per minute; COPD, chronic obstructive pulmonary disease; ICU, intensive care unit; IQR, interquartile range; 2019-nCoV, 2019 novel coronavirus.

[a] *P* values indicate differences between ICU and non-ICU patients. *P* < .05 was considered statistically significant.

extracted within 2 hours using the respiratory sample RNA isolation kit (Zhongzhi, Wuhan, China). In brief, 40 µL of cell lysates were transferred into a collection tube followed by vortex for 10 seconds. After standing at room temperature for 10 minutes, the collection tube was centrifugated at 1000 rpm/min for 5 minutes. The suspension was used for real-time reverse transcription polymerase chain reaction (RT-PCR) assay of 2019-nCoV RNA. Two target genes, including open reading frame 1ab (*ORF1ab*) and nucleocapsid protein (N), were simultaneously amplified and tested during the real-time RT-PCR assay. Target 1 (*ORF1ab*): forward primer CCCTGTGGGTTTTACACTTAA; reverse primer ACGATTGTGCATCAGCTGA; and the probe 5′-VIC-CCGTCTGCGGTATGTGGAAAGGTTATGG-BHQ1-3′. Target 2 (N): forward primer GGGGAACTTCTCCTGCTAGAAT; reverse primer CAGACATTTTGCTCTCAAGCTG; and the probe 5′-FAM- TTGCTGCTGCTTGACAGATT-TAMRA-3′. The real-time RT-PCR assay was performed using a 2019-nCoV nucleic acid detection kit according to the manufacturer's protocol (Shanghai bio-germ Medical Technology Co Ltd). Reaction mixture contains 12 µL of reaction buffer, 4 µL of enzyme solution, 4 µL of Probe primers solution, 3 µL of diethyl pyrocarbonate-treated water, and 2 µL of RNA template. RT-PCR assay was

Table 2. Laboratory Findings of Patients Infected With 2019-nCoV on Admission to Hospital

		Median (IQR)			
	Normal Range	Total (N = 138)	ICU (n = 36)	Non-ICU (n = 102)	*P* Value[a]
White blood cell count, $\times 10^9$/L	3.5-9.5	4.5 (3.3-6.2)	6.6 (3.6-9.8)	4.3 (3.3-5.4)	.003
Neutrophil count, $\times 10^9$/L	1.8-6.3	3.0 (2.0-4.9)	4.6 (2.6-7.9)	2.7 (1.9-3.9)	<.001
Lymphocyte count, $\times 10^9$/L	1.1-3.2	0.8 (0.6-1.1)	0.8 (0.5-0.9)	0.9 (0.6-1.2)	.03
Monocyte count, $\times 10^9$/L	0.1-0.6	0.4 (0.3-0.5)	0.4 (0.3-0.5)	0.4 (0.3-0.5)	.96
Platelet count, $\times 10^9$/L	125-350	163 (123-191)	142 (119-202)	165 (125-188)	.78
Prothrombin time, s	9.4-12.5	13.0 (12.3-13.7)	13.2 (12.3-14.5)	12.9 (12.3-13.4)	.37
Activated partial thromboplastin time, s	25.1-36.5	31.4 (29.4-33.5)	30.4 (28.0-33.5)	31.7 (29.6-33.5)	.09
D-dimer, mg/L	0-500	203 (121-403)	414 (191-1324)	166 (101-285)	<.001
Creatine kinase, U/L	<171	92 (56-130)	102 (62-252)	87 (54-121)	.08
Creatine kinase-MB, U/L	<25	14 (10-18)	18 (12-35)	13 (10-14)	<.001
Lactate dehydrogenase, U/L	125-243	261 (182-403)	435 (302-596)	212 (171-291)	<.001
Alanine aminotransferase, U/L	9-50	24 (16-40)	35 (19-57)	23 (15-36)	.007
Aspartate aminotransferase, U/L	15-40	31 (24-51)	52 (30-70)	29 (21-38)	<.001
Total bilirubin, mmol/L	5-21	9.8 (8.4-14.1)	11.5 (9.6-18.6)	9.3 (8.2-12.8)	.02
Blood urea nitrogen, mmol/L	2.8-7.6	4.4 (3.4-5.8)	5.9 (4.3-9.6)	4.0 (3.1-5.1)	<.001
Creatinine, μmol/L	64-104	72 (60-87)	80 (66-106)	71 (58-84)	.04
Hypersensitive troponin I, pg/mL	<26.2	6.4 (2.8-18.5)	11.0 (5.6-26.4)	5.1 (2.1-9.8)	.004
Procalcitonin, ng/mL					
≥0.05, No. (%)	<0.05	49 (35.5)	27 (75.0)	22 (21.6)	<.001
Bilateral distribution of patchy shadows or ground glass opacity, No. (%)	NA	138 (100)	36 (100)	102 (100)	>.99

Abbreviations: ICU, intensive care unit; IQR, interquartile range; MB, muscle and brain type; NA, not available; 2019-nCoV, 2019 novel coronavirus.

SI conversion factors: To convert alanine aminotransferase to μkat/L, multiply by 0.0167; aspartate aminotransferase to μkat/L, multiply by 0.0167; creatine kinase to μkat/L, multiply by 0.0167; and lactate dehydrogenase to μkat/L, multiply by 0.0167.

[a] *P* values indicate differences between ICU and non-ICU patients. *P* < .05 was considered statistically significant.

performed under the following conditions: incubation at 50 °C for 15 minutes and 95 °C for 5 minutes, 40 cycles of denaturation at 94 °C for 15 seconds, and extending and collecting fluorescence signal at 55 °C for 45 seconds. A cycle threshold value (Ct-value) less than 37 was defined as a positive test result, and a Ct-value of 40 or more was defined as a negative test. These diagnostic criteria were based on the recommendation by the National Institute for Viral Disease Control and Prevention (China) (http://ivdc.chinacdc.cn/kyjz/202001/t20200121_211337.html). A medium load, defined as a Ct-value of 37 to less than 40, required confirmation by retesting.

Statistical Analysis

Categorical variables were described as frequency rates and percentages, and continuous variables were described using mean, median, and interquartile range (IQR) values. Means for continuous variables were compared using independent group *t* tests when the data were normally distributed; otherwise, the Mann-Whitney test was used. Data (nonnormal distribution) from repeated measures were compared using the generalized linear mixed model. Proportions for categorical variables were compared using the χ^2 test, although the Fisher exact test was used when the data were limited. All statistical analyses were performed using SPSS (Statistical Package for the Social Sciences) version 13.0 software (SPSS Inc). For unadjusted comparisons, a 2-sided α of less than .05 was considered statistically significant. The analyses have not been adjusted for multiple comparisons and, given the potential for type I error, the findings should be interpreted as exploratory and descriptive.

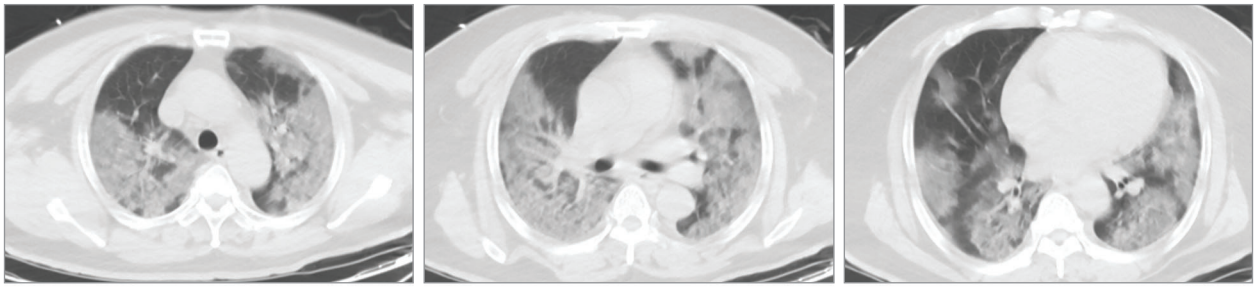
Results

Presenting Characteristics

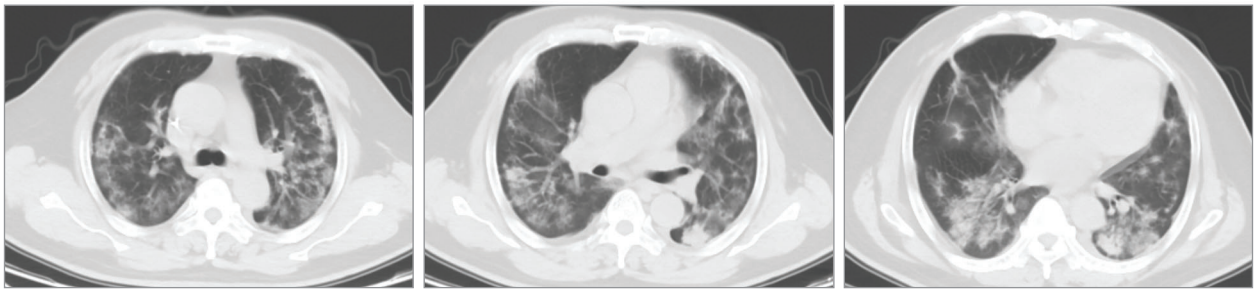
The study population included 138 hospitalized patients with confirmed NCIP. The median age was 56 years (IQR, 42-68; range, 22-92 years), and 75 (54.3%) were men. Of these patients, 102 (73.9%) were admitted to isolation wards, and 36 (26.1%) were admitted and transferred to the ICU because of the development of organ dysfunction (**Table 1**). The median durations from first symptoms to dyspnea, hospital admission, and ARDS were 5 days (IQR, 1-10), 7 days (IQR, 4-8), and 8 days (IQR, 6-12), respectively (Table 1). Of the 138 patients, 64 (46.4%) had 1 or more coexisting medical conditions. Hypertension (43 [31.2%]), diabetes (14 [10.1%]), cardiovascular disease (20 [14.5%]), and malignancy (10 [7.2%]) were the most common coexisting conditions.

Figure 1. Chest Computed Tomographic Images of a 52-Year-Old Patient Infected With 2019 Novel Coronavirus (2019-nCoV)

A Computed tomography images on day 5 after symptom onset



B Computed tomography images after treatment on day 19 after symptom onset



A, Chest computed tomographic images obtained on January 7, 2020, show ground glass opacity in both lungs on day 5 after symptom onset. B, Images taken on January 21, 2020, show the absorption of bilateral ground glass opacity after the treatment of extracorporeal membrane oxygenation from January 7 to 12 in the intensive care unit.

The most common symptoms at onset of illness were fever (136 [98.6%]), fatigue (96 [69.6%]), dry cough (82 [59.4%]), myalgia (48 [34.8%]), and dyspnea (43 [31.2%]). Less common symptoms were headache, dizziness, abdominal pain, diarrhea, nausea, and vomiting (Table 1). A total of 14 patients (10.1%) initially presented with diarrhea and nausea 1 to 2 days prior to development of fever and dyspnea.

Compared with patients who did not receive ICU care (n = 102), patients who required ICU care (n = 36) were significantly older (median age, 66 years [IQR, 57-78] vs 51 years [IQR, 37-62]; $P < .001$) and were more likely to have underlying comorbidities, including hypertension (21 [58.3%] vs 22 [21.6%], diabetes (8 [22.2%] vs 6 [5.9%]), cardiovascular disease (9 [25.0%] vs 11 [10.8%]), and cerebrovascular disease (6 [16.7%] vs 1 [1.0%]). Compared with the non-ICU patients, patients admitted to the ICU were more likely to report pharyngeal pain, dyspnea, dizziness, abdominal pain, and anorexia.

Vital Signs and Laboratory Parameters in ICU and Non-ICU Patients

Heart rate, respiratory rate, and mean arterial pressure did not differ between patients who received ICU care and patients who did not receive ICU care. These measures were recorded on day of hospital admission for all patients, then divided into those who were later admitted to the ICU or not. There were numerous differences in laboratory findings between patients admitted to the ICU and those not admitted to the ICU (**Table 2**), including higher white blood cell and neutrophil counts, as well as higher levels of D-dimer, creatine kinase, and creatine. All of the 138 enrolled patients showed bilateral involvement of chest CT scan (**Figure 1**). The median time from onset of symptoms to ICU admission was 10 days (IQR, 6-12) (**Table 3**). On the day of ICU admission, the median Glasgow Coma Scale; Acute Physiology and Chronic Health Evaluation II; and Sequential Organ Failure Assessment scores were 15 (IQR, 9-15), 17 (IQR, 10-22), and 5 (IQR, 3-6), respectively (Table 3). The median partial pressure

Table 3. Severity of Illness Scores and Blood Gas Analysis of Patients Infected With 2019-nCoV in the ICU

	Normal Range	Median (IQR)
No. of patients		36
Onset of symptom to ICU admission, d	NA	10 (6-12)
Time from hospital admission to ICU admission, d	NA	1 (0-3)
Glasgow Coma Scale score	NA	15 (9-15)
APACHE II	NA	17 (10-22)
SOFA	NA	5 (3-6)
PH	7.35-7.45	7.43 (7.39-7.47)
Lactate, mmol/L	0.5-1.6	1.3 (0.7-2.0)
Pao_2, mm Hg	83-108	68 (56-89)
Pao_2:Fio_2, mm Hg	400-500	136 (103-234)
$Paco_2$, mm Hg	35-48	34 (30-38)

Abbreviations: APACHE II, Acute Physiology and Chronic Health Evaluation II; Fio_2, fraction of inspired oxygen; ICU, intensive care unit; IQR, interquartile range; NA, not available; 2019-nCoV, 2019 novel coronavirus; $Paco_2$, partial pressure of carbon dioxide; Pao_2, partial pressure of oxygen; SOFA, Sequential Organ Failure Assessment.

Table 4. Complications and Treatments of Patients Infected With 2019-nCoV

	No. (%)			
	Total (N = 138)	ICU (n = 36)	Non-ICU (n = 102)	*P* Value[a]
Complications				
Shock	12 (8.7)	11 (30.6)	1 (1.0)	<.001
Acute cardiac injury	10 (7.2)	8 (22.2)	2 (2.0)	<.001
Arrhythmia	23 (16.7)	16 (44.4)	7 (6.9)	<.001
ARDS	27 (19.6)	22 (61.1)	5 (4.9)	<.001
AKI	5 (3.6)	3 (8.3)	2 (2.0)	.11
Treatment				
Antiviral therapy	124 (89.9)	34 (94.4)	90 (88.2)	.36
Glucocorticoid therapy	62 (44.9)	26 (72.2)	36 (35.3)	<.001
CKRT	2 (1.45)	2 (5.56)	0	>.99
Oxygen inhalation	106 (76.81)	4 (11.11)	102 (100)	<.001
NIV	15 (10.9)	15 (41.7)	0	<.001
IMV	17 (12.32)	17 (47.22)	0	<.001
ECMO	4 (2.9)	4 (11.1)	0	.004

Abbreviations: AKI, acute kidney injury; ARDS, acute respiratory distress syndrome; CKRT, continuous kidney replacement therapy; ECMO, extracorporeal membrane oxygenation; ICU, intensive care unit; IMV, invasive mechanical ventilation; NIV, noninvasive ventilation; 2019-nCoV, 2019 novel coronavirus.

[a] *P* values indicate differences between ICU and non-ICU patients. *P* < .05 was considered statistically significant.

of oxygen level was 68 mm Hg (IQR, 56-89) and the median of partial pressure of oxygen to fraction of inspired oxygen ratio was 136 mm Hg (IQR, 103-234).

Organ Dysfunctions and Main Interventions

The organ dysfunction and treatment of the 138 patients are shown in **Table 4**. As of February 3, 2020, 85 patients (61.6%) were still hospitalized. A total of 47 patients (34.1%) had been discharged, and 6 patients (4.3%) had died. Of the 36 patients admitted to the ICU, 11 were still in the ICU, 9 had been discharged to home, 10 had been transferred to the general wards, and 6 had died. Of the 11 patients who remained in the ICU, 6 received invasive ventilation (1 switched to extracorporeal membrane oxygenation) and 5 to noninvasive ventilations). Common complications among the 138 patients included shock (12 [8.7%]), ARDS (27 [19.6%]), arrhythmia (23 [16.7%]), and acute cardiac injury (10 [7.2%]). Patients who received care in the ICU were more likely to have one of these complications than non-ICU patients.

Most patients received antiviral therapy (oseltamivir, 124 [89.9%]), and many received antibacterial therapy (moxifloxacin, 89 [64.4%]; ceftriaxone, 34 [24.6%]; azithromycin, 25 [18.1%]) and glucocorticoid therapy (62 [44.9%]). In the ICU, 4 patients (11.1%) received high-flow oxygen and 15 (44.4%) received noninvasive ventilation. Invasive mechanical ventilation was required in 17 patients (47.2%), 4 of whom received extracorporeal membrane oxygenation as rescue therapy. A total of 13 patients received vasopressors, and 2 patients received kidney replacement therapy.

Dynamic Profile of Laboratory Findings in Patients With NCIP

To determine the major clinical features that appeared during NCIP progression, the dynamic changes in 6 clinical laboratory parameters, including hematological and biochemical parameters, were tracked from day 1 to day 19 after the onset of the disease at 2-day intervals. At the end of January 28, 2020, data from 33 patients with complete clinical course were analyzed (**Figure 2**). During hospitalization, most patients had marked lymphopenia, and nonsurvivors developed more severe lymphopenia over time. White blood cell counts and neutrophil counts were higher in nonsurvivors than those in survivors. The level of D-dimer was higher in nonsurvivors than in survivors. Similarly, as the disease progressed and clinical status deteriorated, the levels of blood urea and creatinine progressively increased before death.

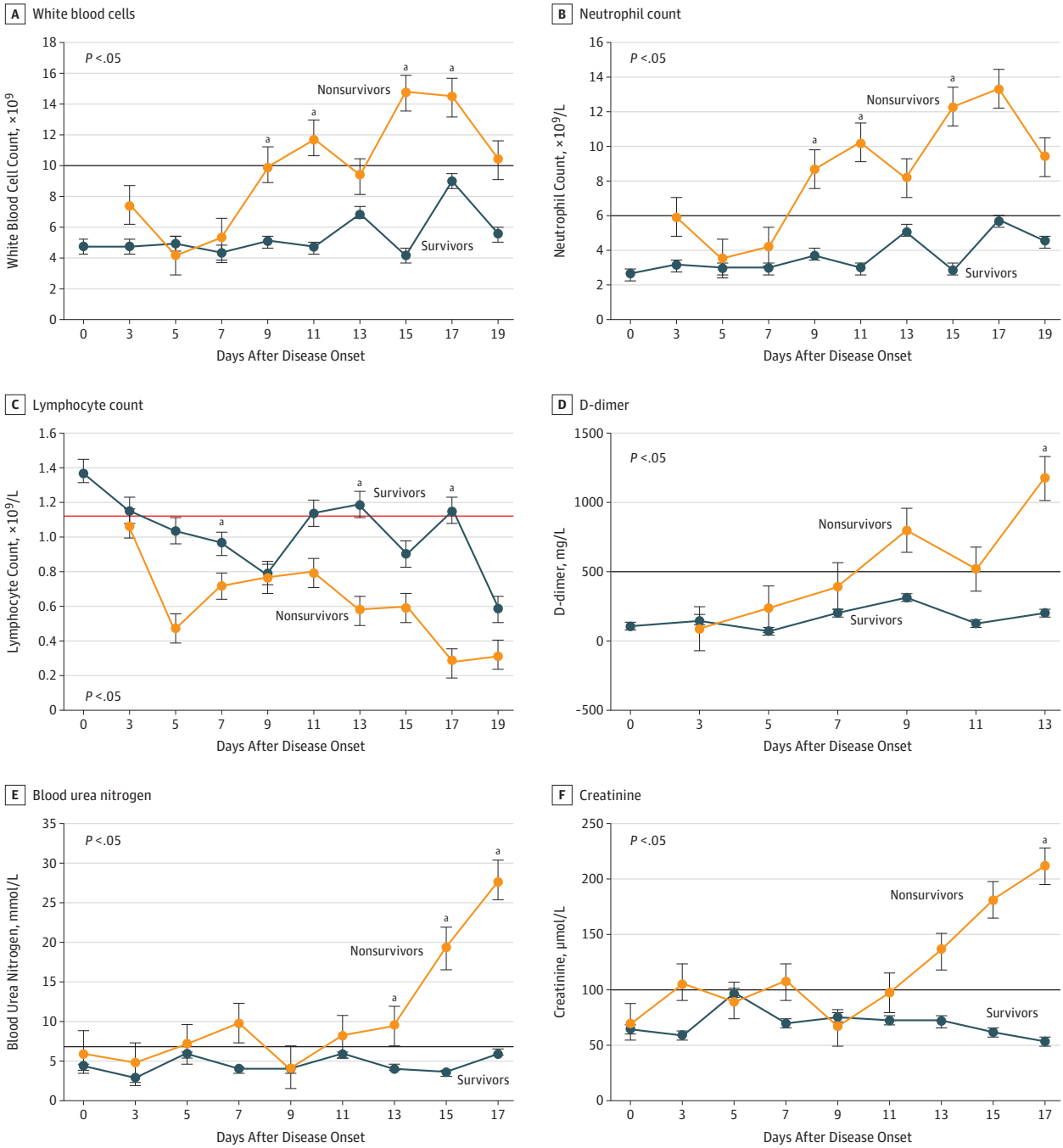
Presumed Hospital-Related Transmission and Infection

Of the 138 patients, 57 (41.3%) were presumed to have been infected in hospital, including 17 patients (12.3%) who were already hospitalized for other reasons and 40 health care workers (29%). Of the hospitalized patients, 7 patients were from the surgical department, 5 were from internal medicine, and 5 were from the oncology department. Of the infected health care workers, 31 (77.5%) worked on general wards, 7 (17.5%) in the emergency department, and 2 (5%) in the ICU. One patient in the current study presented with abdominal symptoms and was admitted to the surgical department. More than 10 health care workers in this department were presumed to have been infected by this patient. Patient-to-patient transmission also was presumed to have occurred, and at least 4 hospitalized patients in the same ward were infected, and all presented with atypical abdominal symptoms. One of the 4 patients had fever and was diagnosed as having nCoV infection during hospitalization. Then, the patient was isolated. Subsequently, the other 3 patients in the same ward had fever, presented with abdominal symptoms, and were diagnosed as having nCoV infection.

Discussion

This report, to our knowledge, is the largest case series to date of hospitalized patients with NCIP. As of February 3, 2020, of the 138 patients included in this study, 26% required

Figure 2. Dynamic Profile of Laboratory Parameters in 33 Patients With Novel Coronavirus–Infected Pneumonia (NCIP)



Timeline charts illustrate the laboratory parameters in 33 patients with NCIP (5 nonsurvivors and 28 survivors) every other day based on the days after the onset of illness. The solid lines in black show the upper normal limit of each parameter, and the solid line in red shows the lower normal limit of lymphocyte count.

[a] $P < .05$ for nonsurvivors vs survivors.

ICU care, 34.1% were discharged, 6 died (4.3%), and 61.6% remain hospitalized. For those who were discharged (n = 47), the hospital stay was 10 days (IQR, 7.0-14.0). The time from onset to dyspnea was 5.0 days, 7.0 days to hospital admission, and 8.0 days to ARDS. Common symptoms at onset of illness were fever, dry cough, myalgia, fatigue, dyspnea, and anorexia. However, a significant proportion of patients presented initially with atypical symptoms, such as diarrhea and nausea. Major complications during hospitalization included ARDS, arrhythmia, and shock. Bilateral distribution of patchy shadows and ground glass opacity was a typical hallmark of CT scan for NCIP. Most critical ill patients were older and had more underlying conditions than patients not admitted to the ICU. Most patients required oxygen therapy

and a minority of the patients needed invasive ventilation or even extracorporeal membrane oxygenation.

The data in this study suggest rapid person-to-person transmission of 2019-nCoV may have occurred. The main reason is derived from the estimation of the basic reproductive number (R_0) based on a previous study.[15] R_0 indicates how contagious an infectious disease is. As an infection spreads to new people, it reproduces itself; R_0 indicates the average number of additional individuals that one affected case infects during the course of their illness and specifically applies to a population of people who were previously free of infection and have not been vaccinated. Based on the report, R_0 from nCoV is 2.2, which estimated that, on average, each patient has been spreading infection to 2.2 other people.[15] One reason for the rapid spread may be related to the atypical symptoms in the early stage in some patients infected with nCoV.

A recent study showed that nCoV was detected in stool samples of patients with abdominal symptoms.[16] However, it is difficult to differentiate and screen patients with atypical symptoms. Nevertheless, the rapid human-to-human transmission among close contacts is an important feature in nCoV pneumonia.[10,11,15]

The patients admitted to the ICU were older and had a greater number of comorbid conditions than those not admitted to the ICU. This suggests that age and comorbidity may be risk factors for poor outcome. However, there was no difference in the proportion of men and women between ICU patients and non-ICU patients. These data differ from the recent report that showed 2019-nCoV infection is more likely to affect males.[8] The possible explanation is that the nCoV infection in patients in the previous report was related to exposure associated with the Huanan Seafood Wholesale Market, and most of the affected patients were male workers. Compared with symptoms in non-ICU patients, symptoms were more common in critically ill patients, including dyspnea, abdominal pain, and anorexia. The onset of symptoms may help physicians identify the patients with poor prognosis. In this cohort, the overall rates of severe hypoxia and invasive ventilation were higher than those in the previous study,[9] likely because the cases in the previous study were from the early epidemic stage of the NCIP, and the current cases are from the stage of outbreak.

The most common laboratory abnormalities observed in this study were depressed total lymphocytes, prolonged prothrombin time, and elevated lactate dehydrogenase. Compared with non-ICU patients, patients who received ICU care had numerous laboratory abnormalities. These abnormalities suggest that 2019-nCoV infection may be associated with cellular immune deficiency, coagulation activation, myocardia injury, hepatic injury, and kidney injury. These laboratory abnormalities are similar to those previously observed in patients with MERS-CoV and SARS-CoV infection.

The dynamic profile of laboratory findings was tracked in 33 patients with NCIP (5 nonsurvivors and 28 survivors). In the nonsurvivors, the neutrophil count, D-dimer, blood urea, and creatinine levels continued to increase, and the lymphocyte counts continued to decrease until death occurred. Neutrophilia may be related to cytokine storm induced by virus invasion, coagulation activation could have been related to sustained inflammatory response, and acute kidney injury could have been related to direct effects of the virus, hypoxia, and shock. The 3 pathologic mechanisms may be associated with the death of patients with NCIP.

Until now, no specific treatment has been recommended for coronavirus infection except for meticulous supportive care.[17] Currently, the approach to this disease is to control the source of infection; use of personal protection precaution to reduce the risk of transmission; and early diagnosis, isolation, and supportive treatments for affected patients. Antibacterial agents are ineffective. In addition, no antiviral agents have been found to provide benefit for treating SARS and MERS. All of the patients in this study received antibacterial agents, 90% received antiviral therapy, and 45% received methylprednisolone. The dose of oseltamivir and methylprednisolone varied depending on disease severity. However, no effective outcomes were observed.

This study has several limitations. First, respiratory tract specimens were used to diagnose NCIP through RT-PCR. The serum of patients was not obtained to evaluate the viremia. The viral load is a potentially useful marker associated with disease severity of coronavirus infection, and this should be determined in NCIP. Second, hospital-related transmission/infection could not be definitively proven but was suspected and presumed based on timing and patterns of exposure to infected patients and subsequent development of infection. Third, among the 138 cases, most patients are still hospitalized at the time of manuscript submission. Therefore, it is difficult to assess risk factors for poor outcome, and continued observations of the natural history of the disease are needed.

Conclusions

In this single-center case series of 138 hospitalized patients with confirmed NCIP in Wuhan, China, presumed hospital-related transmission of 2019-nCoV was suspected in 41% of patients, 26% of patients received ICU care, and mortality was 4.3%.

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Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China

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Summary

Background A recent cluster of pneumonia cases in Wuhan, China, was caused by a novel betacoronavirus, the 2019 novel coronavirus (2019-nCoV). We report the epidemiological, clinical, laboratory, and radiological characteristics and treatment and clinical outcomes of these patients.

Methods All patients with suspected 2019-nCoV were admitted to a designated hospital in Wuhan. We prospectively collected and analysed data on patients with laboratory-confirmed 2019-nCoV infection by real-time RT-PCR and next-generation sequencing. Data were obtained with standardised data collection forms shared by the International Severe Acute Respiratory and Emerging Infection Consortium from electronic medical records. Researchers also directly communicated with patients or their families to ascertain epidemiological and symptom data. Outcomes were also compared between patients who had been admitted to the intensive care unit (ICU) and those who had not.

Findings By Jan 2, 2020, 41 admitted hospital patients had been identified as having laboratory-confirmed 2019-nCoV infection. Most of the infected patients were men (30 [73%] of 41); less than half had underlying diseases (13 [32%]), including diabetes (eight [20%]), hypertension (six [15%]), and cardiovascular disease (six [15%]). Median age was 49·0 years (IQR 41·0–58·0). 27 (66%) of 41 patients had been exposed to Huanan seafood market. One family cluster was found. Common symptoms at onset of illness were fever (40 [98%] of 41 patients), cough (31 [76%]), and myalgia or fatigue (18 [44%]); less common symptoms were sputum production (11 [28%] of 39), headache (three [8%] of 38), haemoptysis (two [5%] of 39), and diarrhoea (one [3%] of 38). Dyspnoea developed in 22 (55%) of 40 patients (median time from illness onset to dyspnoea 8·0 days [IQR 5·0–13·0]). 26 (63%) of 41 patients had lymphopenia. All 41 patients had pneumonia with abnormal findings on chest CT. Complications included acute respiratory distress syndrome (12 [29%]), RNAaemia (six [15%]), acute cardiac injury (five [12%]) and secondary infection (four [10%]). 13 (32%) patients were admitted to an ICU and six (15%) died. Compared with non-ICU patients, ICU patients had higher plasma levels of IL2, IL7, IL10, GSCF, IP10, MCP1, MIP1A, and TNFα.

Interpretation The 2019-nCoV infection caused clusters of severe respiratory illness similar to severe acute respiratory syndrome coronavirus and was associated with ICU admission and high mortality. Major gaps in our knowledge of the origin, epidemiology, duration of human transmission, and clinical spectrum of disease need fulfilment by future studies.

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Introduction

Coronaviruses are enveloped non-segmented positive-sense RNA viruses belonging to the family Coronaviridae and the order Nidovirales and broadly distributed in humans and other mammals.[1] Although most human coronavirus infections are mild, the epidemics of the two betacoronaviruses, severe acute respiratory syndrome coronavirus (SARS-CoV)[2–4] and Middle East respiratory syndrome coronavirus (MERS-CoV),[5,6] have caused more than 10 000 cumulative cases in the past two decades, with mortality rates of 10% for SARS-CoV and 37% for MERS-CoV.[7,8] The coronaviruses already identified might only be the tip of the iceberg, with potentially more novel and severe zoonotic events to be revealed.

In December, 2019, a series of pneumonia cases of unknown cause emerged in Wuhan, Hubei, China, with clinical presentations greatly resembling viral pneumonia.[9] Deep sequencing analysis from lower respiratory tract samples indicated a novel coronavirus, which was named 2019 novel coronavirus (2019-nCoV). Thus far, more than 800 confirmed cases, including in health-care workers, have been identified in Wuhan, and several exported cases have been confirmed in other provinces in China, and in Thailand, Japan, South Korea, and the USA.[10–13]

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Research in context

Evidence before this study

Human coronaviruses, including hCoV-229E, OC43, NL63, and HKU1, cause mild respiratory diseases. Fatal coronavirus infections that have emerged in the past two decades are severe acute respiratory syndrome coronavirus (SARS-CoV) and the Middle East respiratory syndrome coronavirus. We searched PubMed and the China National Knowledge Infrastructure database for articles published up to Jan 11, 2020, using the keywords "novel coronovirus", "2019 novel coronavirus", or "2019-nCoV". No published work about the human infection caused by the 2019 novel coronavirus (2019-nCoV) could be identified.

Added value of this study

We report the epidemiological, clinical, laboratory, and radiological characteristics, treatment, and clinical outcomes of 41 laboratory-confirmed cases infected with 2019-nCoV. 27 (66%) of 41 patients had a history of direct exposure to the Huanan seafood market. The median age of patients was 49·0 years (IQR 41·0–58·0), and 13 (32%) patients had underlying disease. All patients had pneumonia. A third of patients were admitted to intensive care units, and six died. High concentrations of cytokines were recorded in plasma of critically ill patients infected with 2019-nCoV.

Implications of all the available evidence

2019-nCoV caused clusters of fatal pneumonia with clinical presentation greatly resembling SARS-CoV. Patients infected with 2019-nCoV might develop acute respiratory distress syndrome, have a high likelihood of admission to intensive care, and might die. The cytokine storm could be associated with disease severity. More efforts should be made to know the whole spectrum and pathophysiology of the new disease.

We aim to describe epidemiological, clinical, laboratory, and radiological characteristics, treatment, and outcomes of patients confirmed to have 2019-nCoV infection, and to compare the clinical features between intensive care unit (ICU) and non-ICU patients. We hope our study findings will inform the global community of the emergence of this novel coronavirus and its clinical features.

Methods

Patients

Following the pneumonia cases of unknown cause reported in Wuhan and considering the shared history of exposure to Huanan seafood market across the patients, an epidemiological alert was released by the local health authority on Dec 31, 2019, and the market was shut down on Jan 1, 2020. Meanwhile, 59 suspected cases with fever and dry cough were transferred to a designated hospital starting from Dec 31, 2019. An expert team of physicians, epidemiologists, virologists, and government officials was soon formed after the alert.

Since the cause was unknown at the onset of these emerging infections, the diagnosis of pneumonia of unknown cause in Wuhan was based on clinical characteristics, chest imaging, and the ruling out of common bacterial and viral pathogens that cause pneumonia. Suspected patients were isolated using airborne precautions in the designated hospital, Jin Yin-tan Hospital (Wuhan, China), and fit-tested N95 masks and airborne precautions for aerosol-generating procedures were taken. This study was approved by the National Health Commission of China and Ethics Commission of Jin Yin-tan Hospital (KY-2020-01.01). Written informed consent was waived by the Ethics Commission of the designated hospital for emerging infectious diseases.

Procedures

Local centres for disease control and prevention collected respiratory, blood, and faeces specimens, then shipped them to designated authoritative laboratories to detect the pathogen (NHC Key Laboratory of Systems Biology of Pathogens and Christophe Mérieux Laboratory, Beijing, China). A novel coronavirus, which was named 2019-nCoV, was isolated then from lower respiratory tract specimen and a diagnostic test for this virus was developed soon after that.[14] Of 59 suspected cases, 41 patients were confirmed to be infected with 2019-nCoV. The presence of 2019-nCoV in respiratory specimens was detected by next-generation sequencing or real-time RT-PCR methods. The primers and probe target to envelope gene of CoV were used and the sequences were as follows: forward primer 5′-TCAGAATGCCAATCTCCCCAAC-3′; reverse primer 5′-AAAGGTCCACCCGATACATTGA-3′; and the probe 5′CY5-CTAGTTACACTAGCCATCCTTACTGC-3′BHQ1. Conditions for the amplifications were 50°C for 15 min, 95°C for 3 min, followed by 45 cycles of 95°C for 15 s and 60°C for 30 s.

Initial investigations included a complete blood count, coagulation profile, and serum biochemical test (including renal and liver function, creatine kinase, lactate dehydrogenase, and electrolytes). Respiratory specimens, including nasal and pharyngeal swabs, bronchoalveolar lavage fluid, sputum, or bronchial aspirates were tested for common viruses, including influenza, avian influenza, respiratory syncytial virus, adenovirus, parainfluenza virus, SARS-CoV and MERS-CoV using real-time RT-PCR assays approved by the China Food and Drug Administration. Routine bacterial and fungal examinations were also performed.

Given the emergence of the 2019-nCoV pneumonia cases during the influenza season, antibiotics (oral and intravenous) and oseltamivir (orally 75 mg twice daily) were empirically administered. Corticosteroid therapy

(methylprednisolone 40–120 mg per day) was given as a combined regimen if severe community-acquired pneumonia was diagnosed by physicians at the designated hospital. Oxygen support (eg, nasal cannula and invasive mechanical ventilation) was administered to patients according to the severity of hypoxaemia. Repeated tests for 2019-nCoV were done in patients confirmed to have 2019-nCoV infection to show viral clearance before hospital discharge or discontinuation of isolation.

Data collection

We reviewed clinical charts, nursing records, laboratory findings, and chest x-rays for all patients with laboratory-confirmed 2019-nCoV infection who were reported by the local health authority. The admission data of these patients was from Dec 16, 2019, to Jan 2, 2020. Epidemiological, clinical, laboratory, and radiological characteristics and treatment and outcomes data were obtained with standardised data collection forms (modified case record form for severe acute respiratory infection clinical characterisation shared by the International Severe Acute Respiratory and Emerging Infection Consortium) from electronic medical records. Two researchers also independently reviewed the data collection forms to double check the data collected. To ascertain the epidemiological and symptom data, which were not available from electronic medical records, the researchers also directly communicated with patients or their families to ascertain epidemiological and symptom data.

Cytokine and chemokine measurement

To characterise the effect of coronavirus on the production of cytokines or chemokines in the acute phase of the illness, plasma cytokines and chemokines (IL1B, IL1RA, IL2, IL4, IL5, IL6, IL7, IL8 (also known as CXCL8), IL9, IL10, IL12p70, IL13, IL15, IL17A, Eotaxin (also known as CCL11), basic FGF2, GCSF (CSF3), GMCSF (CSF2), IFNγ, IP10 (CXCL10), MCP1 (CCL2), MIP1A (CCL3), MIP1B (CCL4), PDGFB, RANTES (CCL5), TNFα, and VEGFA were measured using Human Cytokine Standard 27-Plex Assays panel and the Bio-Plex 200 system (Bio-Rad, Hercules, CA, USA) for all patients according to the manufacturer's instructions. The plasma samples from four healthy adults were used as controls for cross-comparison. The median time from being transferred to a designated hospital to the blood sample collection was 4 days (IQR 2–5).

Detection of coronavirus in plasma

Each 80 µL plasma sample from the patients and contacts was added into 240 µL of Trizol LS (10296028; Thermo Fisher Scientific, Carlsbad, CA, USA) in the Biosafety Level 3 laboratory. Total RNA was extracted by Direct-zol RNA Miniprep kit (R2050; Zymo research, Irvine, CA, USA) according to the manufacturer's instructions and 50 µL elution was obtained for each sample. 5 µL RNA was used for real-time RT-PCR, which targeted the *NP* gene using AgPath-ID One-Step RT-PCR Reagent (AM1005; Thermo Fisher Scientific). The final reaction mix concentration of the primers was 500 nM and probe was 200 nM. Real-time RT-PCR was performed using the following conditions: 50°C for 15 min and 95°C for 3 min, 50 cycles of amplification at 95°C for 10 s and 60°C for 45 s. Since we did not perform tests for detecting infectious virus in blood, we avoided the term viraemia and used RNAaemia instead. RNAaemia was defined as a positive result for real-time RT-PCR in the plasma sample.

Definitions

Acute respiratory distress syndrome (ARDS) and shock were defined according to the interim guidance of WHO

For more on the **International Severe Acute Respiratory and Emerging Infection Consortium** see https://isaric.tghn.org/

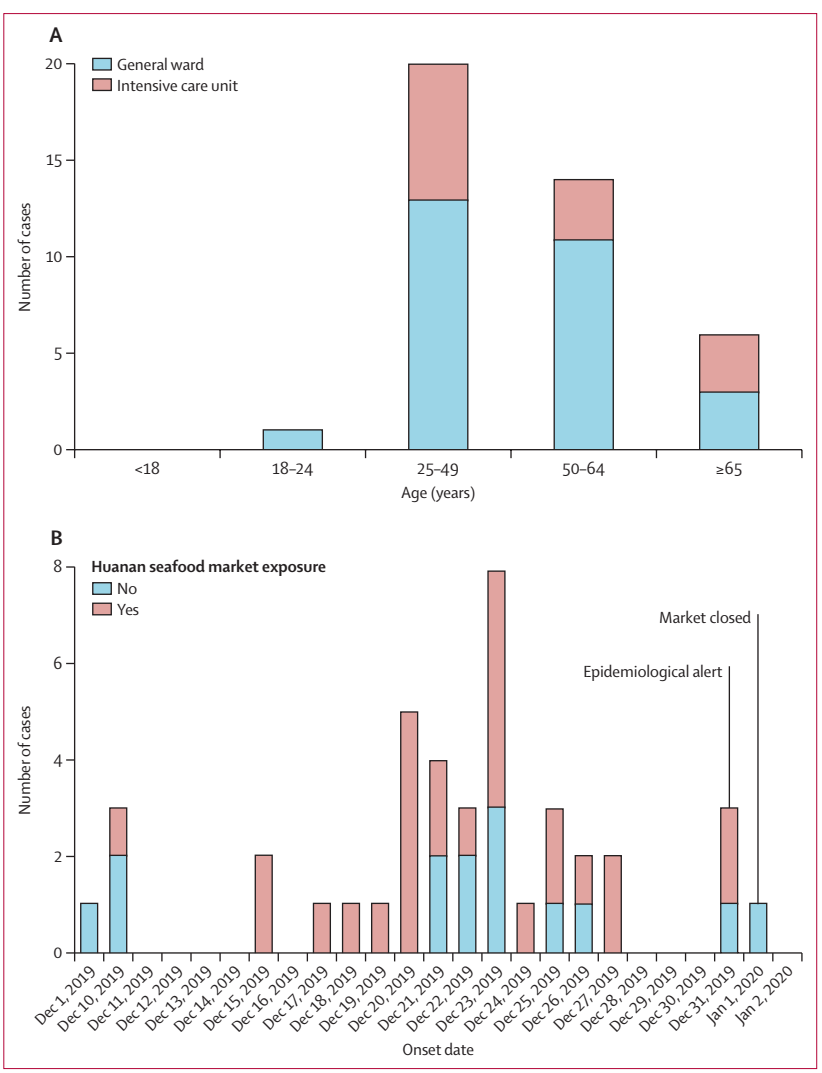

Figure 1: **Date of illness onset and age distribution of patients with laboratory-confirmed 2019-nCoV infection**

(A) Number of hospital admissions by age group. (B) Distribution of symptom onset date for laboratory-confirmed cases. The Wuhan local health authority issued an epidemiological alert on Dec 30, 2019, and closed the Huanan seafood market 2 days later.

	All patients (n=41)	ICU care (n=13)	No ICU care (n=28)	p value
Characteristics				
Age, years	49·0 (41·0–58·0)	49·0 (41·0–61·0)	49·0 (41·0–57·5)	0·60
Sex	..	..	..	0·24
Men	30 (73%)	11 (85%)	19 (68%)	..
Women	11 (27%)	2 (15%)	9 (32%)	..
Huanan seafood market exposure	27 (66%)	9 (69%)	18 (64%)	0·75
Current smoking	3 (7%)	0	3 (11%)	0·31
Any comorbidity	13 (32%)	5 (38%)	8 (29%)	0·53
Diabetes	8 (20%)	1 (8%)	7 (25%)	0·16
Hypertension	6 (15%)	2 (15%)	4 (14%)	0·93
Cardiovascular disease	6 (15%)	3 (23%)	3 (11%)	0·32
Chronic obstructive pulmonary disease	1 (2%)	1 (8%)	0	0·14
Malignancy	1 (2%)	0	1 (4%)	0·49
Chronic liver disease	1 (2%)	0	1 (4%)	0·68
Signs and symptoms				
Fever	40 (98%)	13 (100%)	27 (96%)	0·68
Highest temperature, °C	..	..	..	0·037
<37·3	1 (2%)	0	1 (4%)	..
37·3–38·0	8 (20%)	3 (23%)	5 (18%)	..
38·1–39·0	18 (44%)	7 (54%)	11 (39%)	..
>39·0	14 (34%)	3 (23%)	11 (39%)	..
Cough	31 (76%)	11 (85%)	20 (71%)	0·35
Myalgia or fatigue	18 (44%)	7 (54%)	11 (39%)	0·38
Sputum production	11/39 (28%)	5 (38%)	6/26 (23%)	0·32
Headache	3/38 (8%)	0	3/25 (12%)	0·10
Haemoptysis	2/39 (5%)	1 (8%)	1/26 (4%)	0·46
Diarrhoea	1/38 (3%)	0	1/25 (4%)	0·66
Dyspnoea	22/40 (55%)	12 (92%)	10/27 (37%)	0·0010
Days from illness onset to dyspnoea	8·0 (5·0–13·0)	8·0 (6·0–17·0)	6·5 (2·0–10·0)	0·22
Days from first admission to transfer	5·0 (1·0–8·0)	8·0 (5·0–14·0)	1·0 (1·0–6·5)	0·002
Systolic pressure, mm Hg	125·0 (119·0–135·0)	145·0 (123·0–167·0)	122·0 (118·5–129·5)	0·018
Respiratory rate >24 breaths per min	12 (29%)	8 (62%)	4 (14%)	0·0023

Data are median (IQR), n (%), or n/N (%), where N is the total number of patients with available data. p values comparing ICU care and no ICU care are from χ^2 test, Fisher's exact test, or Mann-Whitney U test. 2019-nCoV=2019 novel coronavirus. ICU=intensive care unit.

Table 1: **Demographics and baseline characteristics of patients infected with 2019-nCoV**

for novel coronavirus.[9] Hypoxaemia was defined as arterial oxygen tension (PaO_2) over inspiratory oxygen fraction (FIO_2) of less than 300 mm Hg.[15] Acute kidney injury was identified and classified on the basis of the highest serum creatinine level or urine output criteria according to the kidney disease improving global outcomes classification.[16] Secondary infection was diagnosed if the patients had clinical symptoms or signs of nosocomial pneumonia or bacteraemia, and was combined with a positive culture of a new pathogen from a lower respiratory tract specimen (including the sputum, transtracheal aspirates, or bronchoalveolar lavage fluid, or from blood samples taken ≥48 h after admission).[17] Cardiac injury followed the definition used in our previous study in H7N9 patients.[18] In brief, cardiac injury was diagnosed if serum levels of cardiac biomarkers (eg, troponin I) were above the 99th percentile upper reference limit, or new abnormalities were shown in electrocardiography and echocardiography.

Statistical analysis

Continuous variables were expressed as median (IQR) and compared with the Mann-Whitney U test; categorical variables were expressed as number (%) and compared by χ^2 test or Fisher's exact test between ICU care and no ICU care groups. Boxplots were drawn to describe plasma cytokine and chemokine concentrations.

A two-sided α of less than 0·05 was considered statistically significant. Statistical analyses were done using the SAS software, version 9.4, unless otherwise indicated.

Role of the funding source

The funder of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report. The corresponding authors had full access to all the data in the study and had final responsibility for the decision to submit for publication.

Results

By Jan 2, 2020, 41 admitted hospital patients were identified as laboratory-confirmed 2019-nCoV infection in Wuhan. 20 [49%]) of the 2019-nCoV-infected patients were aged 25–49 years, and 14 (34%) were aged 50–64 years (figure 1A). The median age of the patients was 49·0 years (IQR 41·0–58·0; table 1). In our cohort of the first 41 patients as of Jan 2, no children or adolescents were infected. Of the 41 patients, 13 (32%) were admitted to the ICU because they required high-flow nasal cannula or higher-level oxygen support measures to correct hypoxaemia. Most of the infected patients were men (30 [73%]); less than half had underlying diseases (13 [32%]), including diabetes (eight [20%]), hypertension (six [15%]), and cardiovascular disease (six [15%]).

27 (66%) patients had direct exposure to Huanan seafood market (figure 1B). Market exposure was similar between the patients with ICU care (nine [69%]) and those with non-ICU care (18 [64%]). The symptom onset date of the first patient identified was Dec 1, 2019. None of his family members developed fever or any respiratory symptoms. No epidemiological link was found between the first patient and later cases. The first fatal case, who had continuous exposure to the market, was admitted to hospital because of a 7-day history of fever, cough, and dyspnoea. 5 days after illness onset, his wife, a 53-year-old woman who had no known history of exposure to the market, also presented with pneumonia and was hospitalised in the isolation ward.

The most common symptoms at onset of illness were fever (40 [98%] of 41 patients), cough (31 [76%]), and myalgia or fatigue (18 [44%]); less common symptoms

were sputum production (11 [28%] of 39), headache (three [8%] of 38), haemoptysis (two [5%] of 39), and diarrhoea (one [3%] of 38; table 1). More than half of patients (22 [55%] of 40) developed dyspnoea. The median duration from illness onset to dyspnoea was 8·0 days (IQR 5·0–13·0). The median time from onset of symptoms to first hospital admission was 7·0 days (4·0–8·0), to shortness of breath was 8·0 days (5·0–13·0), to ARDS was 9·0 days (8·0–14·0), to mechanical ventilation was 10·5 days (7·0–14·0), and to ICU admission was 10·5 days (8·0–17·0; figure 2).

The blood counts of patients on admission showed leucopenia (white blood cell count less than 4×10^9/L; ten [25%] of 40 patients) and lymphopenia (lymphocyte count $<1{\cdot}0\times10^9$/L; 26 [63%] patients; table 2). Prothrombin time and D-dimer level on admission were higher in ICU patients (median prothrombin time 12·2 s [IQR 11·2–13·4]; median D-dimer level 2·4 mg/L [0·6–14·4]) than non-ICU patients (median prothrombin time 10·7 s [9·8–12·1], p=0·012; median D-dimer level 0·5 mg/L [0·3–0·8], p=0·0042). Levels of aspartate aminotransferase were increased in 15 (37%) of 41 patients, including eight (62%) of 13 ICU patients and seven (25%) of 28 non-ICU patients. Hypersensitive troponin I (hs-cTnI) was increased substantially in five patients, in whom the diagnosis of virus-related cardiac injury was made.

Most patients had normal serum levels of procalcitonin on admission (procalcitonin <0·1 ng/mL; 27 [69%] patients; table 2). Four ICU patients developed secondary infections. Three of the four patients with secondary infection had procalcitonin greater than 0·5 ng/mL (0·69 ng/mL, 1·46 ng/mL, and 6·48 ng/mL).

On admission, abnormalities in chest CT images were detected among all patients. Of the 41 patients, 40 (98%) had bilateral involvement (table 2). The typical findings of chest CT images of ICU patients on admission were bilateral multiple lobular and subsegmental areas of consolidation (figure 3A). The representative chest CT findings of non-ICU patients showed bilateral ground-glass opacity and subsegmental areas of consolidation (figure 3B). Later chest CT images showed bilateral ground-glass opacity, whereas the consolidation had been resolved (figure 3C).

Initial plasma IL1B, IL1RA, IL7, IL8, IL9, IL10, basic FGF, GCSF, GMCSF, IFNγ, IP10, MCP1, MIP1A, MIP1B, PDGF, TNFα, and VEGF concentrations were higher in both ICU patients and non-ICU patients than in healthy adults (appendix pp 6–7). Plasma levels of IL5, IL12p70, IL15, Eotaxin, and RANTES were similar between healthy adults and patients infected with 2019-nCoV. Further comparison between ICU and non-ICU patients showed that plasma concentrations of IL2, IL7, IL10, GCSF, IP10, MCP1, MIP1A, and TNFα were higher in ICU patients than non-ICU patients.

All patients had pneumonia. Common complications included ARDS (12 [29%] of 41 patients), followed by RNAaemia (six [15%] patients), acute cardiac injury (five [12%] patients), and secondary infection (four [10%] patients; table 3). Invasive mechanical ventilation was required in four (10%) patients, with two of them (5%) had refractory hypoxaemia and received extracorporeal membrane oxygenation as salvage therapy. All patients were administered with empirical antibiotic treatment, and 38 (93%) patients received antiviral therapy (oseltamivir). Additionally, nine (22%) patients were given systematic corticosteroids. A comparison of clinical features between patients who received and did not receive systematic corticosteroids is in the appendix (pp 1–5).

As of Jan 22, 2020, 28 (68%) of 41 patients have been discharged and six (15%) patients have died. Fitness for discharge was based on abatement of fever for at least 10 days, with improvement of chest radiographic evidence and viral clearance in respiratory samples from upper respiratory tract.

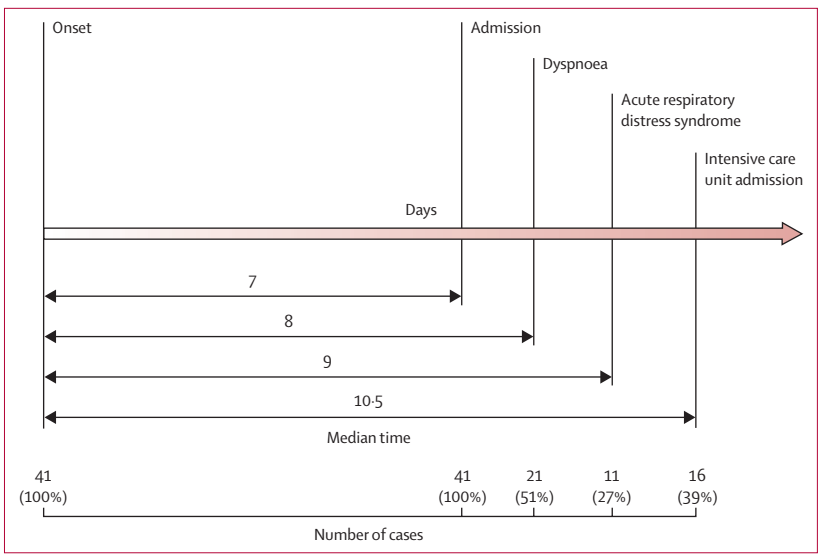

Figure 2: **Timeline of 2019-nCoV cases after onset of illness**

Discussion

We report here a cohort of 41 patients with laboratory-confirmed 2019-nCoV infection. Patients had serious, sometimes fatal, pneumonia and were admitted to the designated hospital in Wuhan, China, by Jan 2, 2020. Clinical presentations greatly resemble SARS-CoV. Patients with severe illness developed ARDS and required ICU admission and oxygen therapy. The time between hospital admission and ARDS was as short as 2 days. At this stage, the mortality rate is high for 2019-nCoV, because six (15%) of 41 patients in this cohort died.

See Online for appendix

The number of deaths is rising quickly. As of Jan 24, 2020, 835 laboratory-confirmed 2019-nCoV infections were reported in China, with 25 fatal cases. Reports have been released of exported cases in many provinces in China, and in other countries;

	All patients (n=41)	ICU care (n=13)	No ICU care (n=28)	p value
White blood cell count, ×10⁹/L	6·2 (4·1–10·5)	11·3 (5·8–12·1)	5·7 (3·1–7·6)	0·011
<4	10/40 (25%)	1/13 (8%)	9/27 (33%)	0·041
4–10	18/40 (45%)	5/13 (38%)	13/27 (48%)	..
>10	12/40 (30%)	7/13 (54%)	5/27 (19%)	..
Neutrophil count, ×10⁹/L	5·0 (3·3–8·9)	10·6 (5·0–11·8)	4·4 (2·0–6·1)	0·00069
Lymphocyte count, ×10⁹/L	0·8 (0·6–1·1)	0·4 (0·2–0·8)	1·0 (0·7–1·1)	0·0041
<1·0	26/41 (63%)	11/13 (85%)	15/28 (54%)	0·045
≥1·0	15/41 (37%)	2/13 (15%)	13/28 (46%)	..
Haemoglobin, g/L	126·0 (118·0–140·0)	122·0 (111·0–128·0)	130·5 (120·0–140·0)	0·20
Platelet count, ×10⁹/L	164·5 (131·5–263·0)	196·0 (165·0–263·0)	149·0 (131·0–263·0)	0·45
<100	2/40 (5%)	1/13 (8%)	1/27 (4%)	0·45
≥100	38/40 (95%)	12/13 (92%)	26/27 (96%)	..
Prothrombin time, s	11·1 (10·1–12·4)	12·2 (11·2–13·4)	10·7 (9·8–12·1)	0·012
Activated partial thromboplastin time, s	27·0 (24·2–34·1)	26·2 (22·5–33·9)	27·7 (24·8–34·1)	0·57
D-dimer, mg/L	0·5 (0·3–1·3)	2·4 (0·6–14·4)	0·5 (0·3–0·8)	0·0042
Albumin, g/L	31·4 (28·9–36·0)	27·9 (26·3–30·9)	34·7 (30·2–36·5)	0·0066
Alanine aminotransferase, U/L	32·0 (21·0–50·0)	49·0 (29·0–115·0)	27·0 (19·5–40·0)	0·038
Aspartate aminotransferase, U/L	34·0 (26·0–48·0)	44·0 (30·0–70·0)	34·0 (24·0–40·5)	0·10
≤40	26/41 (63%)	5/13 (38%)	21/28 (75%)	0·025
>40	15/41 (37%)	8/13 (62%)	7/28 (25%)	..
Total bilirubin, mmol/L	11·7 (9·5–13·9)	14·0 (11·9–32·9)	10·8 (9·4–12·3)	0·011
Potassium, mmol/L	4·2 (3·8–4·8)	4·6 (4·0–5·0)	4·1 (3·8–4·6)	0·27
Sodium, mmol/L	139·0 (137·0–140·0)	138·0 (137·0–139·0)	139·0 (137·5–140·5)	0·26
Creatinine, µmol/L	74·2 (57·5–85·7)	79·0 (53·1–92·7)	73·3 (57·5–84·7)	0·84
≤133	37/41 (90%)	11/13 (85%)	26/28 (93%)	0·42
>133	4/41 (10%)	2/13 (15%)	2/28 (7%)	..
Creatine kinase, U/L	132·5 (62·0–219·0)	132·0 (82·0–493·0)	133·0 (61·0–189·0)	0·31
≤185	27/40 (68%)	7/13 (54%)	20/27 (74%)	0·21
>185	13/40 (33%)	6/13 (46%)	7/27 (26%)	..
Lactate dehydrogenase, U/L	286·0 (242·0–408·0)	400·0 (323·0–578·0)	281·0 (233·0–357·0)	0·0044
≤245	11/40 (28%)	1/13 (8%)	10/27 (37%)	0·036
>245	29/40 (73%)	12/13 (92%)	17/27 (63%)	..
Hypersensitive troponin I, pg/mL	3·4 (1·1–9·1)	3·3 (3·0–163·0)	3·5 (0·7–5·4)	0·08
>28 (99th percentile)	5/41 (12%)	4/13 (31%)	1/28 (4%)	0·017
Procalcitonin, ng/mL	0·1 (0·1–0·1)	0·1 (0·1–0·4)	0·1 (0·1–0·1)	0·031
<0·1	27/39 (69%)	6/12 (50%)	21/27 (78%)	0·0029
≥0·1 to <0·25	7/39 (18%)	3/12 (25%)	4/27 (15%)	..
≥0·25 to <0·5	2/39 (5%)	0/12	2/27 (7%)	..
≥0·5	3/39 (8%)	3/12 (25%)*	0/27	..
Bilateral involvement of chest radiographs	40/41 (98%)	13/13 (100%)	27/28 (96%)	0·68
Cycle threshold of respiratory tract	32·2 (31·0–34·5)	31·1 (30·0–33·5)	32·2 (31·1–34·7)	0·39

Data are median (IQR) or n/N (%), where N is the total number of patients with available data. p values comparing ICU care and no ICU care are from χ^2, Fisher's exact test, or Mann-Whitney U test. 2019-nCoV=2019 novel coronavirus. ICU=intensive care unit. *Complicated typical secondary infection during the first hospitalisation.

Table 2: **Laboratory findings of patients infected with 2019-nCoV on admission to hospital**

some health-care workers have also been infected in Wuhan. Taken together, evidence so far indicates human transmission for 2019-nCoV. We are concerned that 2019-nCoV could have acquired the ability for efficient human transmission.[19] Airborne precautions, such as a fit-tested N95 respirator, and other personal protective equipment are strongly recommended. To prevent further spread of the disease in health-care settings that are caring for patients infected with 2019-nCoV, onset of fever and respiratory symptoms should be closely monitored among health-care workers. Testing of respiratory specimens should be done immediately once a diagnosis is suspected. Serum antibodies should be tested among health-care workers

before and after their exposure to 2019-nCoV for identification of asymptomatic infections.

Similarities of clinical features between 2019-nCoV and previous betacoronavirus infections have been noted. In this cohort, most patients presented with fever, dry cough, dyspnoea, and bilateral ground-glass opacities on chest CT scans. These features of 2019-nCoV infection bear some resemblance to SARS-CoV and MERS-CoV infections.[20,21] However, few patients with 2019-nCoV infection had prominent upper respiratory tract signs and symptoms (eg, rhinorrhoea, sneezing, or sore throat), indicating that the target cells might be located in the lower airway. Furthermore, 2019-nCoV patients rarely developed intestinal signs and symptoms (eg, diarrhoea), whereas about 20–25% of patients with MERS-CoV or SARS-CoV infection had diarrhoea.[21] Faecal and urine samples should be tested to exclude a potential alternative route of transmission that is unknown at this stage.

The pathophysiology of unusually high pathogenicity for SARS-CoV or MERS-CoV has not been completely understood. Early studies have shown that increased amounts of proinflammatory cytokines in serum (eg, IL1B, IL6, IL12, IFNγ, IP10, and MCP1) were associated with pulmonary inflammation and extensive lung damage in SARS patients.[22] MERS-CoV infection was also reported to induce increased concentrations of proinflammatory cytokines (IFNγ, TNFα, IL15, and IL17).[23] We noted that patients infected with 2019-nCoV also had high amounts of IL1B, IFNγ, IP10, and MCP1, probably leading to activated T-helper-1 (Th1) cell responses. Moreover, patients requiring ICU admission had higher concentrations of GCSF, IP10, MCP1, MIP1A, and TNFα than did those not requiring ICU admission, suggesting that the cytokine storm was associated with disease severity. However, 2019-nCoV infection also initiated increased secretion of T-helper-2 (Th2) cytokines (eg, IL4 and IL10) that suppress inflammation, which differs from SARS-CoV infection.[22] Further studies are necessary to characterise the Th1 and Th2 responses in 2019-nCoV infection and to elucidate the pathogenesis. Autopsy or biopsy studies would be the key to understand the disease.

In view of the high amount of cytokines induced by SARS-CoV,[22,24] MERS-CoV,[25,26] and 2019-nCoV infections, corticosteroids were used frequently for treatment of patients with severe illness, for possible benefit by reducing inflammatory-induced lung injury. However, current evidence in patients with SARS and MERS

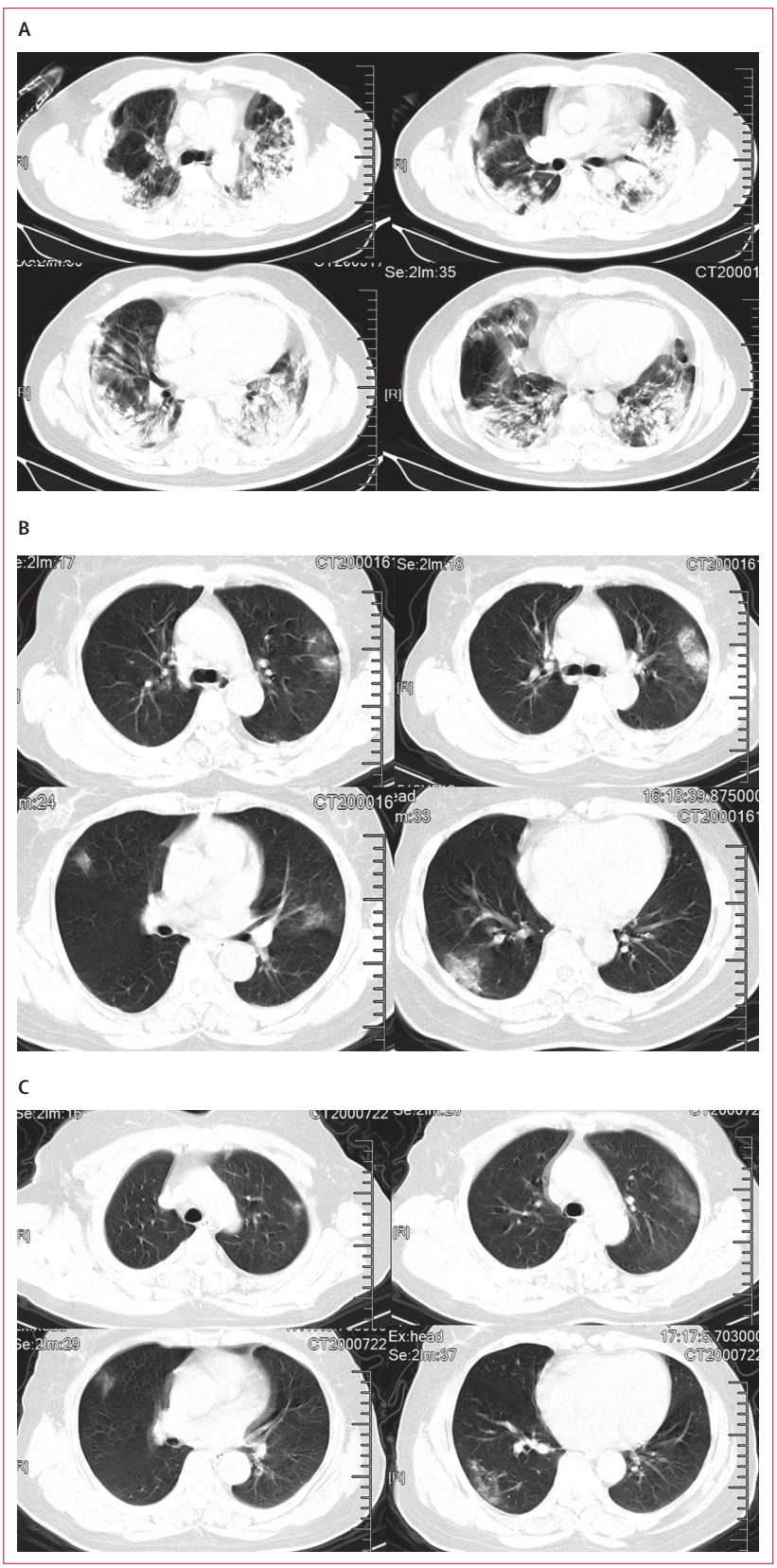

Figure 3: **Chest CT images**

(A) Transverse chest CT images from a 40-year-old man showing bilateral multiple lobular and subsegmental areas of consolidation on day 15 after symptom onset. Transverse chest CT images from a 53-year-old woman showing bilateral ground-glass opacity and subsegmental areas of consolidation on day 8 after symptom onset (B), and bilateral ground-glass opacity on day 12 after symptom onset (C).

	All patients (n=41)	ICU care (n=13)	No ICU care (n=28)	p value
Duration from illness onset to first admission	7·0 (4·0–8·0)	7·0 (4·0–8·0)	7·0 (4·0–8·5)	0·87
Complications				
Acute respiratory distress syndrome	12 (29%)	11 (85%)	1 (4%)	<0·0001
RNAaemia	6 (15%)	2 (15%)	4 (14%)	0·93
Cycle threshold of RNAaemia	35·1 (34·7–35·1)	35·1 (35·1–35·1)	34·8 (34·1–35·4)	0·3545
Acute cardiac injury*	5 (12%)	4 (31%)	1 (4%)	0·017
Acute kidney injury	3 (7%)	3 (23%)	0	0·027
Secondary infection	4 (10%)	4 (31%)	0	0·0014
Shock	3 (7%)	3 (23%)	0	0·027
Treatment				
Antiviral therapy	38 (93%)	12 (92%)	26 (93%)	0·46
Antibiotic therapy	41 (100%)	13 (100%)	28 (100%)	NA
Use of corticosteroid	9 (22%)	6 (46%)	3 (11%)	0·013
Continuous renal replacement therapy	3 (7%)	3 (23%)	0	0·027
Oxygen support	..	..	..	<0·0001
Nasal cannula	27 (66%)	1 (8%)	26 (93%)	..
Non-invasive ventilation or high-flow nasal cannula	10 (24%)	8 (62%)	2 (7%)	..
Invasive mechanical ventilation	2 (5%)	2 (15%)	0	..
Invasive mechanical ventilation and ECMO	2 (5%)	2 (15%)	0	..
Prognosis	..	..	..	0·014
Hospitalisation	7 (17%)	1 (8%)	6 (21%)	..
Discharge	28 (68%)	7 (54%)	21 (75%)	..
Death	6 (15%)	5 (38%)	1 (4%)	..

Data are median (IQR) or n (%). p values are comparing ICU care and no ICU care. 2019-nCoV=2019 novel coronavirus. ICU=intensive care unit. NA=not applicable. ECMO=extracorporeal membrane oxygenation. *Defined as blood levels of hypersensitive troponin I above the 99th percentile upper reference limit (>28 pg/mL) or new abnormalities shown on electrocardiography and echocardiography.

Table 3: **Treatments and outcomes of patients infected with 2019-nCoV**

suggests that receiving corticosteroids did not have an effect on mortality, but rather delayed viral clearance.[27–29] Therefore, corticosteroids should not be routinely given systemically, according to WHO interim guidance.[30] Among our cohort of 41 laboratory-confirmed patients with 2019-nCoV infection, corticosteroids were given to very few non-ICU cases, and low-to-moderate dose of corticosteroids were given to less than half of severely ill patients with ARDS. Further evidence is urgently needed to assess whether systematic corticosteroid treatment is beneficial or harmful for patients infected with 2019-nCoV.

No antiviral treatment for coronavirus infection has been proven to be effective. In a historical control study,[31] the combination of lopinavir and ritonavir among SARS-CoV patients was associated with substantial clinical benefit (fewer adverse clinical outcomes). Arabi and colleagues initiated a placebo-controlled trial of interferon beta-1b, lopinavir, and ritonavir among patients with MERS infection in Saudi Arabia.[32] Preclinical evidence showed the potent efficacy of remdesivir (a broad-spectrum antiviral nucleotide prodrug) to treat MERS-CoV and SARS-CoV infections.[33,34] As 2019-nCoV is an emerging virus, an effective treatment has not been developed for disease resulting from this virus. Since the combination of lopinavir and ritonavir was already available in the designated hospital, a randomised controlled trial has been initiated quickly to assess the efficacy and safety of combined use of lopinavir and ritonavir in patients hospitalised with 2019-nCoV infection.

Our study has some limitations. First, for most of the 41 patients, the diagnosis was confirmed with lower respiratory tract specimens and no paired nasopharyngeal swabs were obtained to investigate the difference in the viral RNA detection rate between upper and lower respiratory tract specimens. Serological detection was not done to look for 2019-nCoV antibody rises in 18 patients with undetectable viral RNA. Second, with the limited number of cases, it is difficult to assess host risk factors for disease severity and mortality with multivariable-adjusted methods. This is a modest-sized case series of patients admitted to hospital; collection of standardised data for a larger cohort would help to further define the clinical presentation, natural history, and risk factors. Further studies in outpatient, primary care, or community settings are needed to get a full picture of the spectrum of clinical severity. At the same time, finding of statistical tests and p values should be interpreted with caution, and non-significant p values do not necessarily rule out difference between ICU and non-ICU patients. Third, since the causative pathogen has just been identified, kinetics of viral load and antibody titres were not available. Finally, the potential exposure bias in our study might account for why no paediatric or adolescent patients were reported in this cohort. More effort should be made to answer these questions in future studies.

Both SARS-CoV and MERS-CoV were believed to originate in bats, and these infections were transmitted directly to humans from market civets and dromedary camels, respectively.[35] Extensive research on SARS-CoV and MERS-CoV has driven the discovery of many SARS-like and MERS-like coronaviruses in bats. In 2013, Ge and colleagues[36] reported the whole genome sequence of a SARS-like coronavirus in bats with that ability to use human ACE2 as a receptor, thus having replication potentials in human cells.[37] 2019-nCoV still needs to be studied deeply in case it becomes a global health threat. Reliable quick pathogen tests and feasible differential diagnosis based on clinical description are crucial for clinicians in their first contact with suspected patients. Because of the pandemic potential of 2019-nCoV, careful surveillance is essential to monitor its future host adaption, viral evolution, infectivity, transmissibility, and pathogenicity.

Contributors

BC and JW had the idea for and designed the study and had full access to all data in the study and take responsibility for the integrity of the

data and the accuracy of the data analysis. YWa, GF, XG, JiXu, HL, and BC contributed to writing of the report. BC contributed to critical revision of the report. YWa, GF, XG, JiXu, and HL contributed to the statistical analysis. All authors contributed to data acquisition, data analysis, or data interpretation, and reviewed and approved the final version.

Declaration of interests

All authors declare no competing interests.

Data sharing

The data that support the findings of this study are available from the corresponding author on reasonable request. Participant data without names and identifiers will be made available after approval from the corresponding author and National Health Commission. After publication of study findings, the data will be available for others to request. The research team will provide an email address for communication once the data are approved to be shared with others. The proposal with detailed description of study objectives and statistical analysis plan will be needed for evaluation of the reasonability to request for our data. The corresponding author and National Health Commission will make a decision based on these materials. Additional materials may also be required during the process.

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Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study

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Summary

Background In December, 2019, a pneumonia associated with the 2019 novel coronavirus (2019-nCoV) emerged in Wuhan, China. We aimed to further clarify the epidemiological and clinical characteristics of 2019-nCoV pneumonia.

Methods In this retrospective, single-centre study, we included all confirmed cases of 2019-nCoV in Wuhan Jinyintan Hospital from Jan 1 to Jan 20, 2020. Cases were confirmed by real-time RT-PCR and were analysed for epidemiological, demographic, clinical, and radiological features and laboratory data. Outcomes were followed up until Jan 25, 2020.

Findings Of the 99 patients with 2019-nCoV pneumonia, 49 (49%) had a history of exposure to the Huanan seafood market. The average age of the patients was 55·5 years (SD 13·1), including 67 men and 32 women. 2019-nCoV was detected in all patients by real-time RT-PCR. 50 (51%) patients had chronic diseases. Patients had clinical manifestations of fever (82 [83%] patients), cough (81 [82%] patients), shortness of breath (31 [31%] patients), muscle ache (11 [11%] patients), confusion (nine [9%] patients), headache (eight [8%] patients), sore throat (five [5%] patients), rhinorrhoea (four [4%] patients), chest pain (two [2%] patients), diarrhoea (two [2%] patients), and nausea and vomiting (one [1%] patient). According to imaging examination, 74 (75%) patients showed bilateral pneumonia, 14 (14%) patients showed multiple mottling and ground-glass opacity, and one (1%) patient had pneumothorax. 17 (17%) patients developed acute respiratory distress syndrome and, among them, 11 (11%) patients worsened in a short period of time and died of multiple organ failure.

Interpretation The 2019-nCoV infection was of clustering onset, is more likely to affect older males with comorbidities, and can result in severe and even fatal respiratory diseases such as acute respiratory distress syndrome. In general, characteristics of patients who died were in line with the MuLBSTA score, an early warning model for predicting mortality in viral pneumonia. Further investigation is needed to explore the applicability of the MuLBSTA score in predicting the risk of mortality in 2019-nCoV infection.

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Introduction

Since Dec 8, 2019, several cases of pneumonia of unknown aetiology have been reported in Wuhan, Hubei province, China.[1–3] Most patients worked at or lived around the local Huanan seafood wholesale market, where live animals were also on sale. In the early stages of this pneumonia, severe acute respiratory infection symptoms occurred, with some patients rapidly developing acute respiratory distress syndrome (ARDS), acute respiratory failure, and other serious complications. On Jan 7, a novel coronavirus was identified by the Chinese Center for Disease Control and Prevention (CDC) from the throat swab sample of a patient, and was subsequently named 2019-nCoV by WHO.[4]

Coronaviruses can cause multiple system infections in various animals and mainly respiratory tract infections in humans, such as severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS).[5–7] Most patients have mild symptoms and good prognosis. So far, a few patients with 2019-nCoV have developed severe pneumonia, pulmonary oedema, ARDS, or multiple organ failure and have died. All costs of 2019-nCoV treatment are covered by medical insurance in China.

At present, information regarding the epidemiology and clinical features of pneumonia caused by 2019-nCoV is scarce.[1–3] In this study, we did a comprehensive exploration of the epidemiology and clinical features of 99 patients with confirmed 2019-nCoV pneumonia admitted to Jinyintan Hospital, Wuhan, which admitted the first patients with 2019-nCoV to be reported on.

Methods

Study design and participants

For this retrospective, single-centre study, we recruited patients from Jan 1 to Jan 20, 2020, at Jinyintan Hospital in Wuhan, China. Jinyintan Hospital is a hospital for adults (ie, aged ≥14 years) specialising in infectious diseases. According to the arrangements put in place by

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Research in context

Evidence before this study

We searched PubMed on Jan 25, 2020, for articles that describe the epidemiological and clinical characteristics of the 2019 novel coronavirus (2019-nCoV) in Wuhan, China, using the search terms "novel coronavirus" and "pneumonia" with no language or time restrictions. Previously published research discussed the epidemiological and clinical characteristics of severe acute respiratory syndrome coronavirus or Middle East respiratory syndrome coronavirus, and primary study for the evolution of the novel coronavirus from Wuhan. The only report of clinical features of patients infected with 2019-nCoV was published on Jan 24, 2020, with 41 cases included.

Added value of this study

We have obtained data on 99 patients in Wuhan, China, to further explore the epidemiology and clinical features of 2019-nCoV. This study is, to our knowledge, the largest case series to date of 2019-nCoV infections, with 99 patients who were transferred to Jinyintan Hospital from other hospitals all over Wuhan, and provides further information on the demographic, clinical, epidemiological, and laboratory features of patients. It presents the latest status of 2019-nCoV infection in China and is an extended investigation of the previous report, with 58 extra cases and more details on combined bacterial and fungal infections. In all patients admitted with medical comorbidities of 2019-nCoV, a wide range of clinical manifestations can be seen and are associated with substantial outcomes.

Implications of all the available evidence

The 2019-nCoV infection was of clustering onset, is more likely to affect older men with comorbidities, and could result in severe and even fatal respiratory diseases such as acute respiratory distress syndrome. Early identification and timely treatment of critical cases of 2019-nCoV are important. Effective life support and active treatment of complications should be provided to effectively reduce the severity of patients' conditions and prevent the spread of this new coronavirus in China and worldwide.

the Chinese Government, adult patients were admitted centrally to the hospital from the whole of Wuhan without selectivity. All patients at Jinyintan Hospital who were diagnosed as having 2019-nCoV pneumonia according to WHO interim guidance were enrolled in this study.[4] All the data of included cases have been shared with WHO. The study was approved by Jinyintan Hospital Ethics Committee and written informed consent was obtained from patients involved before enrolment when data were collected retrospectively.

Procedures

We obtained epidemiological, demographic, clinical, laboratory, management, and outcome data from patients' medical records. Clinical outcomes were followed up to Jan 25, 2020. If data were missing from the records or clarification was needed, we obtained data by direct communication with attending doctors and other health-care providers. All data were checked by two physicians (XD and YQ).

Laboratory confirmation of 2019-nCoV was done in four different institutions: the Chinese CDC, the Chinese Academy of Medical Science, Academy of Military Medical Sciences, and Wuhan Institute of Virology, Chinese Academy of Sciences. Throat-swab specimens from the upper respiratory tract that were obtained from all patients at admission were maintained in viral-transport medium. 2019-nCoV was confirmed by real-time RT-PCR using the same protocol described previously.[3] RT-PCR detection reagents were provided by the four institutions. Other respiratory viruses including influenza A virus (H1N1, H3N2, H7N9), influenza B virus, respiratory syncytial virus, parainfluenza virus, adenovirus, SARS coronavirus (SARS-CoV), and MERS coronavirus (MERS-CoV) were also examined with real-time RT-PCR

Sputum or endotracheal aspirates were obtained at admission for identification of possible causative bacteria or fungi. Additionally, all patients were given chest x-rays or chest CT.

Outcomes

We describe epidemiological data (ie, short-term [occasional visits] and long-term [worked at or lived near] exposure to Huanan seafood market); demographics; signs and symptoms on admission; comorbidity; laboratory results; co-infection with other respiratory pathogens; chest radiography and CT findings; treatment received for 2019-nCoV; and clinical outcomes.

Statistical analysis

We present continuous measurements as mean (SD) if they are normally distributed or median (IQR) if they are not, and categorical variables as count (%). For laboratory results, we also assessed whether the measurements were outside the normal range. We used SPSS (version 26.0) for all analyses.

Role of the funding source

The funder of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report. The corresponding authors had full access to all the data in the study and had final responsibility for the decision to submit for publication.

Results

99 patients with 2019-nCoV were included in this study, two of whom were husband and wife. In total, 49 (49%)

patients were clustered and had a history of exposure to the Huanan seafood market. Among them, there were 47 patients with long-term exposure history, most of whom were salesmen or market managers, and two patients with short-term exposure history, who were shoppers. None of the patients were medical staff. Most patients were men, with a mean age of 55·5 years (SD 13·1; table 1). 50 (51%) patients had chronic diseases, including cardiovascular and cerebrovascular diseases, endocrine system disease, digestive system disease, respiratory system disease, malignant tumour, and nervous system disease (table 1).

On admission, most patients had fever or cough and a third of patients had shortness of breath (table 2). Other symptoms included muscle ache, headache, confusion, chest pain, and diarrhoea (table 2). Many patients presented with organ function damage, including 17 (17%) with ARDS, eight (8%) with acute respiratory injury, three (3%) with acute renal injury, four (4%) with septic shock, and one (1%) with ventilator-associated pneumonia (table 2).

On admission, leucocytes were below the normal range in nine (9%) patients and above the normal range in 24 (24%) patients (table 3). 38 (38%) patients had neutrophils above the normal range. Lymphocytes and haemoglobin were below the normal range in many

	Patients (n=99)
Age, years	
Mean (SD)	55·5 (13·1)
Range	21–82
≤39	10 (10%)
40–49	22 (22%)
50–59	30 (30%)
60–69	22 (22%)
≥70	15 (15%)
Sex	
Female	32 (32%)
Male	67 (68%)
Occupation	
Agricultural worker	2 (2%)
Self-employed	63 (64%)
Employee	15 (15%)
Retired	19 (19%)
Exposure to Huanan seafood market*	49 (49%)
Long-term exposure history	47 (47%)
Short-term exposure history	2 (2%)
Chronic medical illness	50 (51%)
Cardiovascular and cerebrovascular diseases	40 (40%)
Digestive system disease	11 (11%)
Endocrine system disease†	13 (13%)
Malignant tumour	1 (1%)
Nervous system disease	1 (1%)
Respiratory system disease	1 (1%)
Admission to intensive care unit	23 (23%)
Clinical outcome	
Remained in hospital	57 (58%)
Discharged	31 (31%)
Died	11 (11%)

Data are n (%) unless specified otherwise. 2019-nCoV=2019 novel coronavirus. *Long-term exposure is having worked at or lived in or around Huanan seafood market, whereas short-term exposure is having been to Huanan seafood market occasionally. †12 were diabetic.

Table 1: **Demographics, baseline characteristics, and clinical outcomes of 99 patients admitted to Wuhan Jinyintan Hospital (Jan 1–20, 2020) with 2019-nCoV pneumonia**

	Patients (n=99)
Signs and symptoms at admission	
Fever	82 (83%)
Cough	81 (82%)
Shortness of breath	31 (31%)
Muscle ache	11 (11%)
Confusion	9 (9%)
Headache	8 (8%)
Sore throat	5 (5%)
Rhinorrhoea	4 (4%)
Chest pain	2 (2%)
Diarrhoea	2 (2%)
Nausea and vomiting	1 (1%)
More than one sign or symptom	89 (90%)
Fever, cough, and shortness of breath	15 (15%)
Comorbid conditions	
Any	33 (33%)
ARDS	17 (17%)
Acute renal injury	3 (3%)
Acute respiratory injury	8 (8%)
Septic shock	4 (4%)
Ventilator-associated pneumonia	1 (1%)
Chest x-ray and CT findings	
Unilateral pneumonia	25 (25%)
Bilateral pneumonia	74 (75%)
Multiple mottling and ground-glass opacity	14 (14%)
Treatment	
Oxygen therapy	75 (76%)
Mechanical ventilation	
Non-invasive (ie, face mask)	13 (13%)
Invasive	4 (4%)
CRRT	9 (9%)
ECMO	3 (3%)
Antibiotic treatment	70 (71%)
Antifungal treatment	15 (15%)
Antiviral treatment	75 (76%)
Glucocorticoids	19 (19%)
Intravenous immunoglobulin therapy	27 (27%)

2019-nCoV=2019 novel coronavirus. ARDS=acute respiratory distress syndrome. ECMO=extracorporeal membrane oxygenation. CRRT=continuous renal replacement therapy.

Table 2: **Clinical characteristics and treatment of patients with 2019-nCoV pneumonia**

	Patients (n=99)
Blood routine	
Leucocytes (×10⁹ per L; normal range 3·5–9·5)	7·5 (3·6)
Increased	24 (24%)
Decreased	9 (9%)
Neutrophils (×10⁹ per L; normal range 1·8–6·3)	5·0 (3·3–8·1)
Increased	38 (38%)
Lymphocytes (×10⁹ per L; normal range 1·1–3·2)	0·9 (0·5)
Decreased	35 (35%)
Platelets (×10⁹ per L; normal range 125·0–350·0)	213·5 (79·1)
Increased	4 (4%)
Decreased	12 (12%)
Haemoglobin (g/L; normal range 130·0–175·0)	129·8 (14·8)
Decreased	50 (51%)
Coagulation function	
Activated partial thromboplastin time (s; normal range 21·0–37·0)	27·3 (10·2)
Increased	6 (6%)
Decreased	16 (16%)
Prothrombin time (s; normal range 10·5–13·5)	11·3 (1·9)
Increased	5 (5%)
Decreased	30 (30%)
D-dimer (μg/L; normal range 0·0–1·5)	0·9 (0·5–2·8)
Increased	36 (36%)
Blood biochemistry	
Albumin (g/L; normal range 40·0–55·0)	31·6 (4·0)
Decreased	97 (98%)
Alanine aminotransferase (U/L; normal range 9·0–50·0)	39·0 (22·0–53·0)
Increased	28 (28%)
Aspartate aminotransferase (U/L; normal range 15·0–40·0)	34·0 (26·0–48·0)
Increased	35 (35%)
Total bilirubin (μmol/L; normal range 0·0–21·0)	15·1 (7·3)
Increased	18 (18%)
Blood urea nitrogen (mmol/L; normal range 3·6–9·5)	5·9 (2·6)
Increased	6 (6%)
Decreased	17 (17%)
Serum creatinine (μmol/L; normal range 57·0–111·0)	75·6 (25·0)
Increased	3 (3%)
Decreased	21 (21%)
Creatine kinase (U/L; normal range 50·0–310·0)	85·0 (51·0–184·0)
Increased	13 (13%)
Decreased	23 (23%)
Lactate dehydrogenase (U/L; normal range 120·0–250·0)	336·0 (260·0–447·0)
Increased	75 (76%)
Myoglobin (ng/mL; normal range 0·0–146·9)	49·5 (32·2–99·8)
Increased	15 (15%)
Glucose (mmol/L; normal range 3·9–6·1)	7·4 (3·4)
Increased	51 (52%)
Decreased	1 (1%)

(Table 3 continues in next column)

(Continued from previous column)

	Patients (n=99)
Infection-related biomarkers	
Procalcitonin (ng/mL; normal range 0·0–5·0)	0·5 (1·1)
Increased	6 (6%)
Interleukin-6 (pg/mL; normal range 0·0–7·0)	7·9 (6·1–10·6)
Increased	51 (52%)
Erythrocyte sedimentation rate (mm/h; normal range 0·0–15·0)	49·9 (23·4)
Increased	84 (85%)
Serum ferritin (ng/mL; normal range 21·0–274·7)	808·7 (490·7)
Increased	62 (63%)
C-reactive protein (mg/L; normal range 0·0–5·0)*	51·4 (41·8)
Increased	63/73 (86%)
Co-infection	
Other viruses	0
Bacteria	1 (1%)
Fungus	4 (4%)

Data are n (%), n/N (%), mean (SD), and median (IQR). Increased means over the upper limit of the normal range and decreased means below the lower limit of the normal range. 2019-nCoV=2019 novel coronavirus. *Data available for 73 patients.

Table 3: **Laboratory results of patients with 2019-nCoV pneumonia**

patients (table 3). Platelets were below the normal range in 12 (12%) patients and above the normal range in four (4%). 43 patients had differing degrees of liver function abnormality, with alanine aminotransferase (ALT) or aspartate aminotransferase (AST) above the normal range (table 3); one patient had severe liver function damage (ALT 7590 U/L, AST 1445 U/L). Most patients had abnormal myocardial zymogram, which showed the elevation of creatine kinase in 13 (13%) patients and the elevation of lactate dehydrogenase in 75 (76%) patients, one of whom also showed abnormal creatine kinase (6280 U/L) and lactate dehydrogenase (20740 U/L). Seven (7%) patients had different degrees of renal function damage, with elevated blood urea nitrogen or serum creatinine. Regarding the infection index, procalcitonin was above the normal range in six (6%) patients. Most patients had serum ferritin above the normal range (table 3). 73 patients were tested for C-reactive protein, most of whom had levels above the normal range (table 3).

All patients were tested for nine respiratory pathogens and the nucleic acid of influenza viruses A and B. Bacteria and fungi culture were done at the same time. We did not find other respiratory viruses in any of the patients. *Acinetobacter baumannii*, *Klebsiella pneumoniae*, and *Aspergillus flavus* were all cultured in one patient. *A baumannii* turned out to be highly resistant to antibiotics. One case of fungal infection was diagnosed as *Candida glabrata* and three cases of fungal infection were diagnosed as *Candida albicans*.

According to chest x-ray and CT, 74 (75%) patients showed bilateral pneumonia (75%) with just 25 (25%)

patients showing unilateral pneumonia (table 2). 14 (14%) patients showed multiple mottling and ground-glass opacity (table 2; figure). Additionally, pneumothorax occurred in one (1%) patient.

All patients were treated in isolation. 75 (76%) patients received antiviral treatment, including oseltamivir (75 mg every 12 h, orally), ganciclovir (0·25 g every 12 h, intravenously), and lopinavir and ritonavir tablets (500 mg twice daily, orally). The duration of antiviral treatment was 3–14 days (median 3 days [IQR 3–6]).

Most patients were given antibiotic treatment (table 2); 25 (25%) patients were treated with a single antibiotic and 45 (45%) patients were given combination therapy. The antibiotics used generally covered common pathogens and some atypical pathogens; when secondary bacterial infection occurred, medication was administered according to the results of bacterial culture and drug sensitivity. The antibiotics used were cephalosporins, quinolones, carbapenems, tigecycline against methicillin-resistant *Staphylococcus aureus*, linezolid, and antifungal drugs. The duration of antibiotic treatment was 3–17 days (median 5 days [IQR 3–7]). 19 (19%) patients were also treated with methylprednisolone sodium succinate, methylprednisolone, and dexamethasone for 3–15 days (median 5 [3–7]).

13 patients used non-invasive ventilator mechanical ventilation for 4–22 days (median 9 days [IQR 7–19]). Four patients used an invasive ventilator to assist ventilation for 3–20 days (median 17 [12–19]). The ventilator adopted P-SIMV mode, the inhaled oxygen concentration was 35–100%, and the positive end-expiratory pressure was 6–12 cm H_2O. All four patients were still using ventilators at data cutoff. Moreover, nine (9%) patients received continuous blood purification due to renal failure and three (3%) patients were treated with extracorporeal membrane oxygenation (ECMO; table 2).

By the end of Jan 25, 31 (31%) patients had been discharged and 11 (11%) patients had died; all other patients were still in hospital (table 1). The first two deaths were a 61-year-old man (patient 1) and a 69-year-old man (patient 2). They had no previous chronic underlying disease but had a long history of smoking. Patient 1 was transferred to Jinyintan Hospital and diagnosed with severe pneumonia and ARDS. He was immediately admitted to the intensive care unit (ICU) and given an intubated ventilator-assisted breathing therapy. Later, the patient, having developed severe respiratory failure, heart failure, and sepsis, experienced a sudden cardiac arrest on the 11th day of admission and was declared dead. Patient 2 had severe pneumonia and ARDS after admission. The patient was transferred to the ICU and given ventilator-assisted breathing, and received anti-infection and ECMO treatment after admission. The patient's hypoxaemia remained unresolved. On the ninth day of admission, the patient died of severe pneumonia, septic shock, and respiratory failure. The intervals

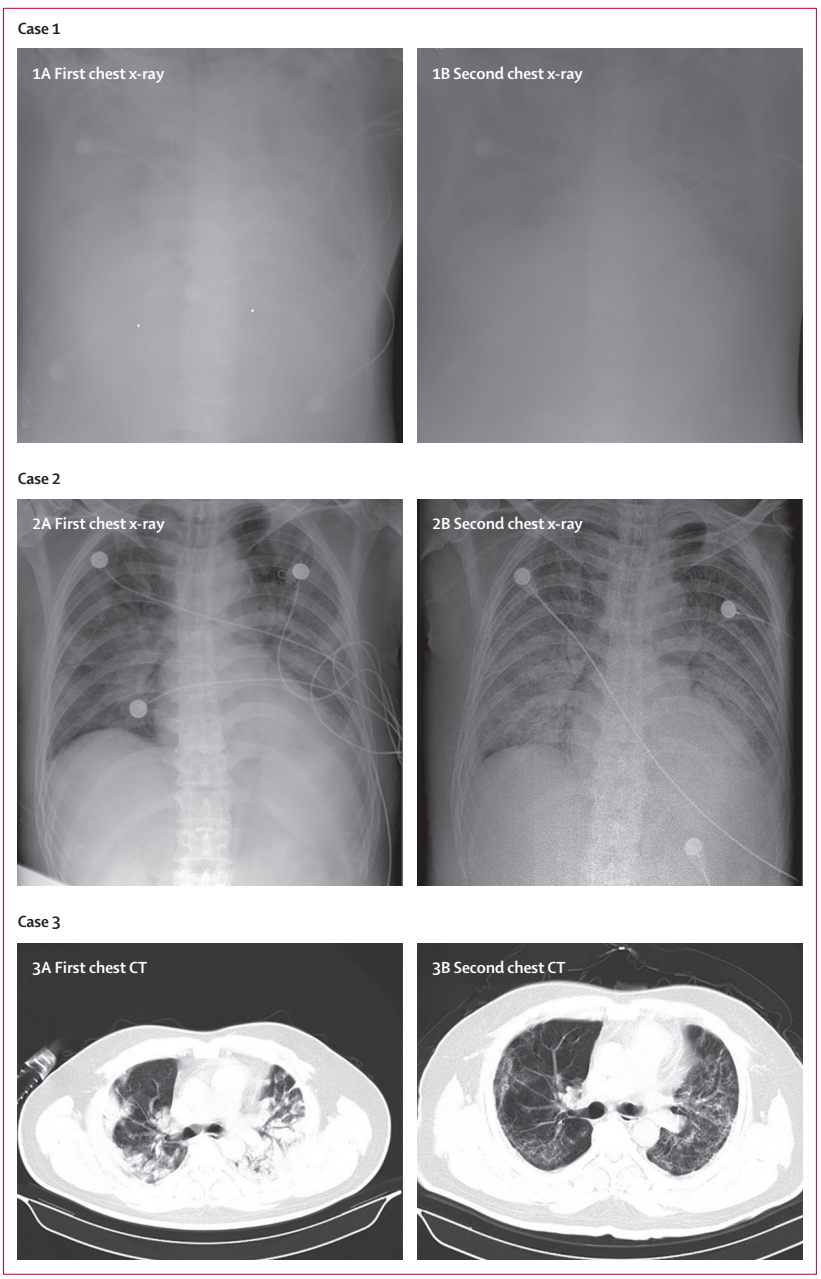

Figure: **Chest x-rays and chest CTs of three patients**
Case 1: chest x-ray was obtained on Jan 1 (1A). The brightness of both lungs was diffusely decreased, showing a large area of patchy shadow with uneven density. Tracheal intubation was seen in the trachea and the heart shadow outline was not clear. The catheter shadow was seen from the right axilla to the mediastinum. Bilateral diaphragmatic surface and costal diaphragmatic angle were not clear, and chest x-ray on Jan 2 showed worse status (1B). Case 2: chest x-ray obtained on Jan 6 (2A). The brightness of both lungs was decreased and multiple patchy shadows were observed; edges were blurred, and large ground-glass opacity and condensation shadows were mainly on the lower right lobe. Tracheal intubation could be seen in the trachea. Heart shadow roughly presents in the normal range. On the left side, the diaphragmatic surface is not clearly displayed. The right side of the diaphragmatic surface was light and smooth and rib phrenic angle was less sharp. Chest x-ray on Jan 10 showed worse status (2B). Case 3: chest CT obtained on Jan 1 (3A) showed mass shadows of high density in both lungs. Bright bronchogram is seen in the lung tissue area of the lesion, which is also called bronchoinflation sign. Chest CT on Jan 15 showed improved status (3B).

between the onset of symptoms and the use of ventilator-assisted breathing in the two patients were 3 days and 10 days, respectively. The course of the disease and lung lesions progressed rapidly in both patients, with both developing multiple organ failure in a short time. The deaths of these two patients were consistent with the MuLBSTA score, an early warning model for predicting mortality in viral pneumonia.[8]

Of the remaining nine patients who died, eight patients had lymphopenia, seven had bilateral pneumonia, five were older than 60 years, three had hypertension, and one was a heavy smoker.

Discussion

This is an extended descriptive study on the epidemiology and clinical characteristics of the 2019-nCoV, including data on 99 patients who were transferred to Jinyintan Hospital from other hospitals across Wuhan. It presents the latest status of the 2019-nCoV infection in China and adds details on combined bacterial and fungal infections.

Human coronavirus is one of the main pathogens of respiratory infection. The two highly pathogenic viruses, SARS-CoV and MERS-CoV, cause severe respiratory syndrome in humans and four other human coronaviruses (HCoV-OC43, HCoV-229E, HCoV-NL63, HCoV-HKU1) induce mild upper respiratory disease. The major SARS-CoV outbreak involving 8422 patients occurred during 2002–03 and spread to 29 countries globally.[9,10] MERS-CoV emerged in Middle Eastern countries in 2012 but was imported into China.[11,12] The sequence of 2019-nCoV is relatively different from the six other coronavirus subtypes but can be classified as betacoronavirus. SARS-CoV and MERS-CoV can be transmitted directly to humans from civets and dromedary camels, respectively, and both viruses originate in bats, but the origin of 2019-nCoV needs further investigation.[13–15] 2019-nCoV also has enveloped virions that measure approximately 50–200 nm in diameter with a single positive-sense RNA genome.[16] Club-shaped glycoprotein spikes in the envelope give the virus a crown-like or coronal appearance. Transmission rates are unknown for 2019-nCoV; however, there is evidence of human-to-human transmission. None of the 99 patients we examined were medical staff, but 15 medical workers have been reported with 2019-nCoV infection, 14 of whom are assumed to have been infected by the same patient.[17] The mortality of SARS-CoV has been reported as more than 10% and MERS-CoV at more than 35%.[5,18] At data cutoff for this study, mortality of the 99 included patients infected by 2019-nCoV was 11%, resembling that in a previous study.[3] However, additional deaths might occur in those still hospitalised.

We observed a greater number of men than women in the 99 cases of 2019-nCoV infection. MERS-CoV and SARS-CoV have also been found to infect more males than females.[19,20] The reduced susceptibility of females to viral infections could be attributed to the protection from X chromosome and sex hormones, which play an important role in innate and adaptive immunity.[21] Additionally, about half of patients infected by 2019-nCoV had chronic underlying diseases, mainly cardiovascular and cerebrovascular diseases and diabetes; this is similar to MERS-CoV.[19] Our results suggest that 2019-nCoV is more likely to infect older adult males with chronic comorbidities as a result of the weaker immune functions of these patients.[19–22]

Some patients, especially severely ill ones, had co-infections of bacteria and fungi. Common bacterial cultures of patients with secondary infections included *A baumannii*, *K pneumoniae*, *A flavus*, *C glabrata*, and *C albicans*.[8] The high drug resistance rate of *A baumannii* can cause difficulties with anti-infective treatment, leading to higher possibility of developing septic shock.[23] For severe mixed infections, in addition to the virulence factors of pathogens, the host's immune status is also one of the important factors. Old age, obesity, and presence of comorbidity might be associated with increased mortality.[24] When populations with low immune function, such as older people, diabetics, people with HIV infection, people with long-term use of immunosuppressive agents, and pregnant women, are infected with 2019-nCoV, prompt administration of antibiotics to prevent infection and strengthening of immune support treatment might reduce complications and mortality.

In terms of laboratory tests, the absolute value of lymphocytes in most patients was reduced. This result suggests that 2019-nCoV might mainly act on lymphocytes, especially T lymphocytes, as does SARS-CoV. Virus particles spread through the respiratory mucosa and infect other cells, induce a cytokine storm in the body, generate a series of immune responses, and cause changes in peripheral white blood cells and immune cells such as lymphocytes. Some patients progressed rapidly with ARDS and septic shock, which was eventually followed by multiple organ failure. Therefore, early identification and timely treatment of critical cases is of crucial importance. Use of intravenous immunoglobulin is recommended to enhance the ability of anti-infection for severely ill patients and steroids (methylprednisolone 1–2 mg/kg per day) are recommended for patients with ARDS, for as short a duration of treatment as possible. Some studies suggest that a substantial decrease in the total number of lymphocytes indicates that coronavirus consumes many immune cells and inhibits the body's cellular immune function. Damage to T lymphocytes might be an important factor leading to exacerbations of patients.[25] The low absolute value of lymphocytes could be used as a reference index in the diagnosis of new coronavirus infections in the clinic.

In general, the characteristics of patients who died were in line with the early warning model for predicting mortality in viral pneumonia in our previous study: the MuLBSTA score.[8] The MuLBSTA score system contains six indexes, which are multilobular infiltration, lymphopenia, bacterial

co-infection, smoking history, hypertension, and age. Further investigation is needed to explore the applicability of the MuLBSTA score in predicting the risk of mortality in 2019-nCoV infection.

This study has several limitations. First, only 99 patients with confirmed 2019-nCoV were included; suspected but undiagnosed cases were ruled out in the analyses. It would be better to include as many patients as possible in Wuhan, in other cities in China, and even in other countries to get a more comprehensive understanding of 2019-nCoV. Second, more detailed patient information, particularly regarding clinical outcomes, was unavailable at the time of analysis; however, the data in this study permit an early assessment of the epidemiological and clinical characteristics of 2019-nCoV pneumonia in Wuhan, China.

In conclusion, the infection of 2019-nCoV was of clustering onset, is more likely to infect older men with comorbidities, and can result in severe and even fatal respiratory diseases such as ARDS.

Contributors

NC, XD, FG, YH, YQ, JW, YL, YW, JX, TY, and LZ collected the epidemiological and clinical data and processed statistical data. NC and MZ drafted the manuscript. JQ and XZ revised the final manuscript. XZ is responsible for summarising all data related to the virus. LZ is responsible for summarising all epidemiological and clinical data.

Declaration of interests

We declare no competing interests.

Acknowledgments

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From: Benjamin Lipsky
To: Duchin, Jeff
Cc: SHIGEO KONO
Subject: COVID-19
Date: Saturday, February 29, 2020 4:35:33 PM
Attachments: who-china-joint-mission-on-covid-19-final-report.pdf

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Jeff, I imagine you are now quite busy with the Covid-19 activity, especially with the recent death and possible nursing home outbreak. I am attaching a very informative "Report of The Who-China Joint Mission on COVID-19" that was just released; no US representatives were invited.
Prof Kono and I still hope that we can work together on the project we wrote to you about recently. When you have a chance, perhaps you can let us know if you have any interest.
Ben

From: Benjamin Lipsky <dblipsky@hotmail.com>
Sent: Monday, February 24, 2020 5:50 PM
To: Jeff Duchin <jeff.duchin@kingcounty.gov>
Cc: SHIGEO KONO <skono1958@gmail.com>
Subject: Re: COVID-19 & climates

Dear Jeff,
I hope you are well. As you may know, I have been largely retired for the past 2 years, but am reminded of you occasionally when I hear you on KUOW (National Public Radio) speaking about various public health issues in King County.
I am writing to see if you might be interested in collaborating with me and a colleague of mine in Japan on a COVID-19-related project. Prof Shigeo Kono and I have collaborated on diabetic foot infection related activities, including writing guidelines for the International Working Group on the Diabetic Foot, for many years. Prof Kono, who works at the Kyoto Medical Center, is also the Director of the WHO-Collaborating Centre for Diabetes, National Hospital Organization for the Western Pacific region. As you can see from our email exchanges below, he has become interested in the fact that the risk of infection with coronaviruses (including SARS and MERS) appears to be inversely related to the ambient temperature, and perhaps humidity. This has practical implications in how, where and for how long the virus might spread. This is not a new idea; attached are several papers that Prof Kono has found that have noted this correlation for over 15 years. Prof Kono, with his many contacts in Asia, has been looking at some preliminary data from the current coronavirus epidemic, and has raised the idea of writing one or more papers to discuss the correlations (old and perhaps new) with climate.
As neither of us has a background in public health or epidemiology, we thought it would be important to see if we could interest such a person in working with us to write something for publication-- perhaps just a letter or short observation to start, then perhaps a review article, followed by some original data from the current outbreak in Asia.
Would you be interested in working with us on this project? If not, could you recommend someone who you think would be appropriate, and potentially interested?
We look forward to hearing from you at your earliest convenience.
Best wishes,

Ben

Benjamin A. Lipsky, MD, FACP, FIDSA, FRCP (London), FFPM RCPS (Glasg)
Emeritus Professor of Medicine, University of Washington
Green Templeton College, University of Oxford

From: SHIGEO KONO <skono1958@gmail.com>
Sent: Monday, February 24, 2020 2:47 PM
To: Benjamin Lipsky <dblipsky@hotmail.com>
Subject: Re: COVID-19 & climates

Dear Prof. Lipsky
Thank you very much for your very prompt and kind feedback as always.
Of course, I follow your suggestions. Please make contact with Prof. Jeffrey S. Duchin about this project.
I really appreciate for your great help.
With best regards
Shigeo

2020年2月25日(火) 7:34 Benjamin Lipsky <dblipsky@hotmail.com>:

> Shigeo, your information on the important confounder of "policy on entry of people from China" is interesting, and certainly important. This is clearly a problem for which there are many potential confounders to consider. I do think it is crucial to have a person with expertise in public health epidemiology. There is one such person (more administrative than academic) on the faculty of the University of Washington: Dr. Jeffrey S. Duchin (Professor, Department of Medicine, Division of Allergy & Infectious Diseases; Adjunct Professor School of Public Health & Community Medicine, University of Washington Health Officer & Chief, Communicable Disease Epidemiology & Immunization Section, Public Health - Seattle & King County). If you wish I could email him and ask if he is interested in working with you on this project. If not, perhaps he can give us the name of an appropriate person who might be. He might also have a suggestion about the most appropriate medical journal and article format for this project. Shall I contact him?
> Ben
>
> ---
>
> **From:** SHIGEO KONO <skono1958@gmail.com>
> **Sent:** Monday, February 24, 2020 2:16 PM
> **To:** Benjamin Lipsky <dblipsky@hotmail.com>
> **Subject:** Re: COVID-19 & climates
>
> Dear Prof. Lipsky
> Thank you very much for your prompt review and very kind assistance.
> It is a great honor of me to work with you again.
> I would like to do it in the easiest way among the three ones you pointed out.
> As for Lancet Infectious Disease, should we write and submit in the form of "correspondence"?
> Do we need to ask some experts in public health epidemiology to review it? If needed, could

you kindly introduce someone?

In our hypothesis (human coronavirus and climates) we have to exclude the possibility of "Entry Prohibited From China".
I could not understand why Japan government followed US policy " Entry prohibited for all foreigners staying in China in the past two weeks".
I noticed that China government gave some pressures to various Asian countries and WHO as the prime minister insisted it at Asian meeting 4 days ago.
I introduce you the policies of Asian countries.
1) Most strict (Perfectly prohibited for the people with Chinese passport and/ or stayed in China): Philippines, Singapore, Vietnam, Indonesia
2) Moderate (partially prohibited for the people staying in the infected provinces (a few) in China): Japan, Korea, Malaysia
3) Mild (Basically no prohibition): Thailand, Cambodia

Most strict countries seem to succeed the management of the outbreaks of COVID-19, but Thailand can control it despite of any restriction. Thailand is the most favorite country for Chinese to visit and more than ten million Chinese visited Thailand last year.
As for Cambodia, they accepted the floating cruise ship "Westerdam", but only one case was reported up to now. However, they don't have enough systems of PCR.
And so, the policy of "Entry Prohibition" can explain the current situation partially, but not at all.
I am looking forward to hearing from you soon.
With best regards

Shigeo

2020年2月25日(火) 5:29 Benjamin Lipsky <dblipsky@hotmail.com>:

> Dear Shigeo,
> You have educated me on an area of infectious diseases about which I have not had previous knowledge. I briefly reviewed the papers you sent and they make an impressive case for the relationship of climate (temperature and humidity) and the incidence of coronavirus infections. I do think that this is an interesting and important issue, both for improving public health efforts and (as you suggest) giving hope to people concerned about the spread of the infection.
> I think there are several ways you could go with this information. The easiest would be to just summarize some of the previously published data and put forward a hypothesis about how the current COVID-19 epidemic seems to be following a similar pattern. The next step up could be to do a more thorough review of the topic for a more detailed "perspective" article. The third could be to gather primary data from Western Pacific countries to write an original research paper. It would also be possible to write all three of these types of articles, in sequential order over the next year. Obviously, all but the short letter would take a great deal of time and effort, which you may not have.
> I have little expertise in viral infections, or in public health epidemiology statistics. I would, however, be happy to help you (and perhaps some colleagues with expertise in these other areas) with the English writing of any paper you produce. Since one of the papers you sent is from Lancet Infectious Diseases, that might be a good journal to consider.
> Please let me know more about what you decide to do. I do think this work would be of wide interest.

Ben

From: SHIGEO KONO <skono1958@gmail.com>
Sent: Monday, February 24, 2020 6:41 AM
To: Benjamin Lipsky <dblipsky@hotmail.com>
Subject: COVID-19 & climates

Dear Prof. Lipsky

I have collected the papers regarding the relations between human coronavirus, temperature and humidity.
In SARS maximum temperature and high humidity are inversely correlated with infectious ability.
MERS has a conflicting data about the temperature , but is inversely related to humidity.

Now many diabetic patients and elderly people are much afraid of COVID-19 and depressed because there are no treatments and good news.
Today, I talked to the president of Asian Association for the Study for Diabetes (AASD) and Japan Association for Diabetes Education and Care, Prof. Yutaka Seino, about the marked geographical difference of the prevalence of COVID-19 in WPR and its speculation. We think some good news must be necessary for them as well as all Japanese for relaxing.
Although this phenomenon is not scientifically proved at all, can we submit this phenomenon and speculation by a short letter in English medical journal?
Probably we can collect the data from our Asian friends about how many peoples were screened by RT-PCR and its results (positive vs negative/ all cases).
Many experts think that those countries have not examined or screened the patients, and the data was underestimated.
If high temperature and high humidity in Indonesia, Philippines, Vietnam, Thailand, Cambodia etc can suppress COVID-19, Japanese people tend to think that they have only to bear until rainy season and will be free from depression.

I am looking forward to hearing from you soon.

with best regards

Shigeo
--
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Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19)

16-24 February 2020

Table of Contents

I. The Mission

Goal and Objectives

The overall goal of the Joint Mission was to rapidly inform national (China) and international planning on next steps in the response to the ongoing outbreak of the novel coronavirus disease (COVID-19[1]) and on next steps in readiness and preparedness for geographic areas not yet affected.

The major objectives of the Joint Mission were as follows:

- To enhance understanding of the evolving COVID-19 outbreak in China and the nature and impact of ongoing containment measures;
- To share knowledge on COVID-19 response and preparedness measures being implemented in countries affected by or at risk of importations of COVID-19;
- To generate recommendations for adjusting COVID-19 containment and response measures in China and internationally; and
- To establish priorities for a collaborative programme of work, research and development to address critical gaps in knowledge and response and readiness tools and activities.

Members & Method of Work

The Joint Mission consisted of 25 national and international experts from China, Germany, Japan, Korea, Nigeria, Russia, Singapore, the United States of America and the World Health Organization (WHO). The Joint Mission was headed by Dr Bruce Aylward of WHO and Dr Wannian Liang of the People's Republic of China. The full list of members and their affiliations is available in Annex A. The Joint Mission was implemented over a 9-day period from 16-24 February 2020. The schedule of work is available in Annex B.

The Joint Mission began with a detailed workshop with representatives of all of the principal ministries that are leading and/or contributing to the response in China through the National Prevention and Control Task Force. A series of in-depth meetings were then conducted with national level institutions responsible for the management, implementation and evaluation of the response, particularly the National Health Commission and the China Centers for Disease Control and Prevention (China CDC). To gain first-hand knowledge on the field level implementation and impact of the national and local response strategy, under a range of epidemiologic and provincial contexts, visits were conducted to Beijing Municipality and the provinces of Sichuan (Chengdu), Guangdong (Guangzhou, Shenzhen) and Hubei (Wuhan). The field visits included community centers and health clinics, country/district hospitals, COVID-19 designated hospitals, transportations hubs (air, rail, road), a wet market, pharmaceutical and personal protective equipment (PPE) stocks warehouses, research institutions, provincial health commissions, and local Centers for

[1] In the Chinese version of this report, COVID-19 is referred to throughout as novel coronavirus pneumonia or NCP, the term by which COVID-19 is most widely known in the People's Republic of China.

Disease Control (provincial and prefecture). During these visits, the team had detailed discussion and consultations with Provincial Governors, municipal Mayors, their emergency operations teams, senior scientists, frontline clinical, public health and community workers, and community neighbourhood administrators. The Joint Mission concluded with working sessions to consolidate findings, generate conclusions and propose suggested actions.

To achieve its goal, the Joint Mission gave particular focus to addressing key questions related to the natural history and severity of COVID-19, the transmission dynamics of the COVID-19 virus in different settings, and the impact of ongoing response measures in areas of high (community level), moderate (clusters) and low (sporadic cases or no cases) transmission.

The findings in this report are based on the Joint Mission's review of national and local governmental reports, discussions on control and prevention measures with national and local experts and response teams, and observations made and insights gained during site visits. The figures have been produced using information and data collected during site visits and with the agreement of the relevant groups. References are available for any information in this report that has already been published in journals.

The final report of the Joint Mission was submitted on 28 February 2020.

II. Major findings

The major findings are described in six sections: the virus, the outbreak, transmission dynamics, disease progression and severity, the China response and knowledge gaps. More detailed descriptions of technical findings are provided in Annex C.

The virus

On 30 December 2019, three bronchoalveolar lavage samples were collected from a patient with pneumonia of unknown etiology – a surveillance definition established following the SARS outbreak of 2002-2003 – in Wuhan Jinyintan Hospital. Real-time PCR (RT-PCR) assays on these samples were positive for pan-Betacoronavirus. Using Illumina and nanopore sequencing, the whole genome sequences of the virus were acquired. Bioinformatic analyses indicated that the virus had features typical of the coronavirus family and belonged to the Betacoronavirus 2B lineage. Alignment of the full-length genome sequence of the COVID-19 virus and other available genomes of Betacoronavirus showed the closest relationship was with the bat SARS-like coronavirus strain BatCov RaTG13, identity 96%.

Virus isolation was conducted with various cell lines, such as human airway epithelial cells, Vero E6, and Huh-7. Cytopathic effects (CPE) were observed 96 hours after inoculation. Typical crown-like particles were observed under transmission electron microscope (TEM) with negative staining. The cellular infectivity of the isolated viruses could be completely neutralized by the sera collected from convalescent patients. Transgenic human ACE2 mice and Rhesus monkey intranasally challenged by this virus isolate induced multifocal pneumonia with interstitial hyperplasia. The COVID-19 virus was subsequently detected and isolated in the lung and intestinal tissues of the challenged animals.

Whole genome sequencing analysis of 104 strains of the COVID-19 virus isolated from patients in different localities with symptom onset between the end of December 2019 and mid-February 2020 showed 99.9% homology, without significant mutation (Figure 1).

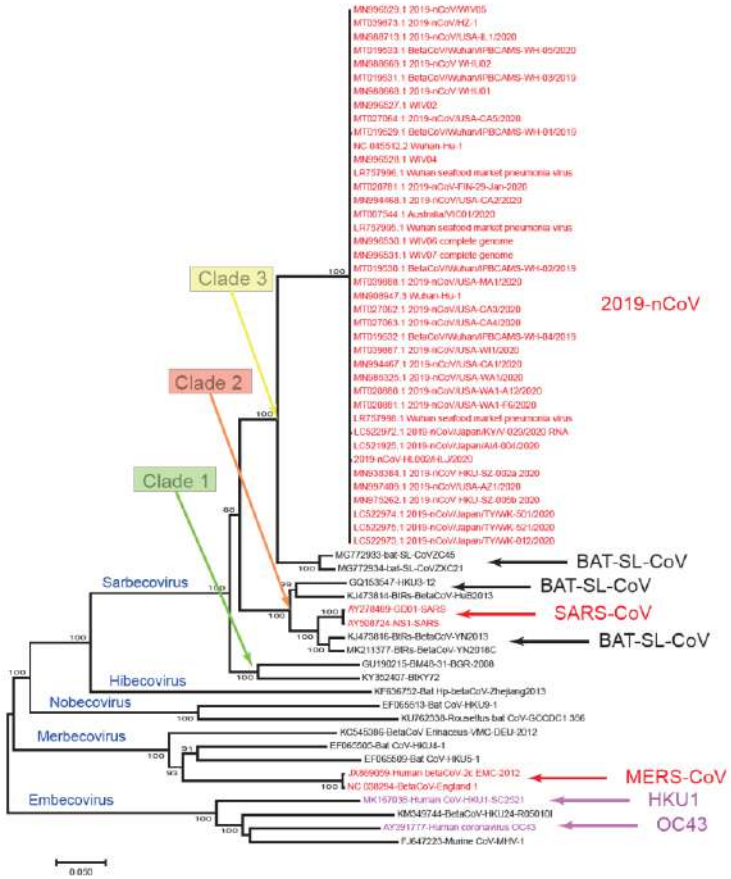

Figure 1. Phylogenetic analysis of the COVID-19 virus and its closely related reference genomes

Note: COVID-19 virus is referred to as 2019-nCoV in the figure, the interim virus name WHO announced early in the outbreak.

Post-mortem samples from a 50-year old male patient from Wuhan were taken from the lung, liver, and heart. Histological examination showed bilateral diffuse alveolar damage with cellular fibromyxoid exudates. The lung showed evident desquamation of pneumocytes and hyaline membrane formation, indicating acute respiratory distress syndrome (ARDS). Lung tissue also displayed cellular and fibromyxoid exudation, desquamation of pneumocytes and pulmonary oedema. Interstitial mononuclear inflammatory infiltrates, dominated by lymphocytes, were seen in both lungs. Multinucleated syncytial cells with atypical enlarged pneumocytes characterized by large nuclei, amphophilic granular cytoplasm, and prominent nucleoli were identified in the intra-alveolar spaces, showing viral cytopathic-like changes. No obvious intranuclear or intracytoplasmic viral inclusions were identified.

The outbreak

As of 20 February 2020, a cumulative total of 75,465 COVID-19 cases were reported in China. Reported cases are based on the National Reporting System (NRS) between the

National and Provincial Health Commissions. The NRS issues daily reports of newly recorded confirmed cases, deaths, suspected cases, and contacts. A daily report is provided by each province at 0300hr in which they report cases from the previous day.

The epidemic curves presented in Figures 2 and 3 are generated using China's National Infectious Disease Information System (IDIS), which requires each COVID-19 case to be reported electronically by the responsible doctor as soon as a case has been diagnosed. It includes cases that are reported as asymptomatic and data are updated in real time. Individual case reporting forms are downloaded after 2400hr daily. Epidemiologic curves for Wuhan, Hubei (outside of Wuhan), China (outside Hubei) and China by symptom onset are provided in Figure 2.

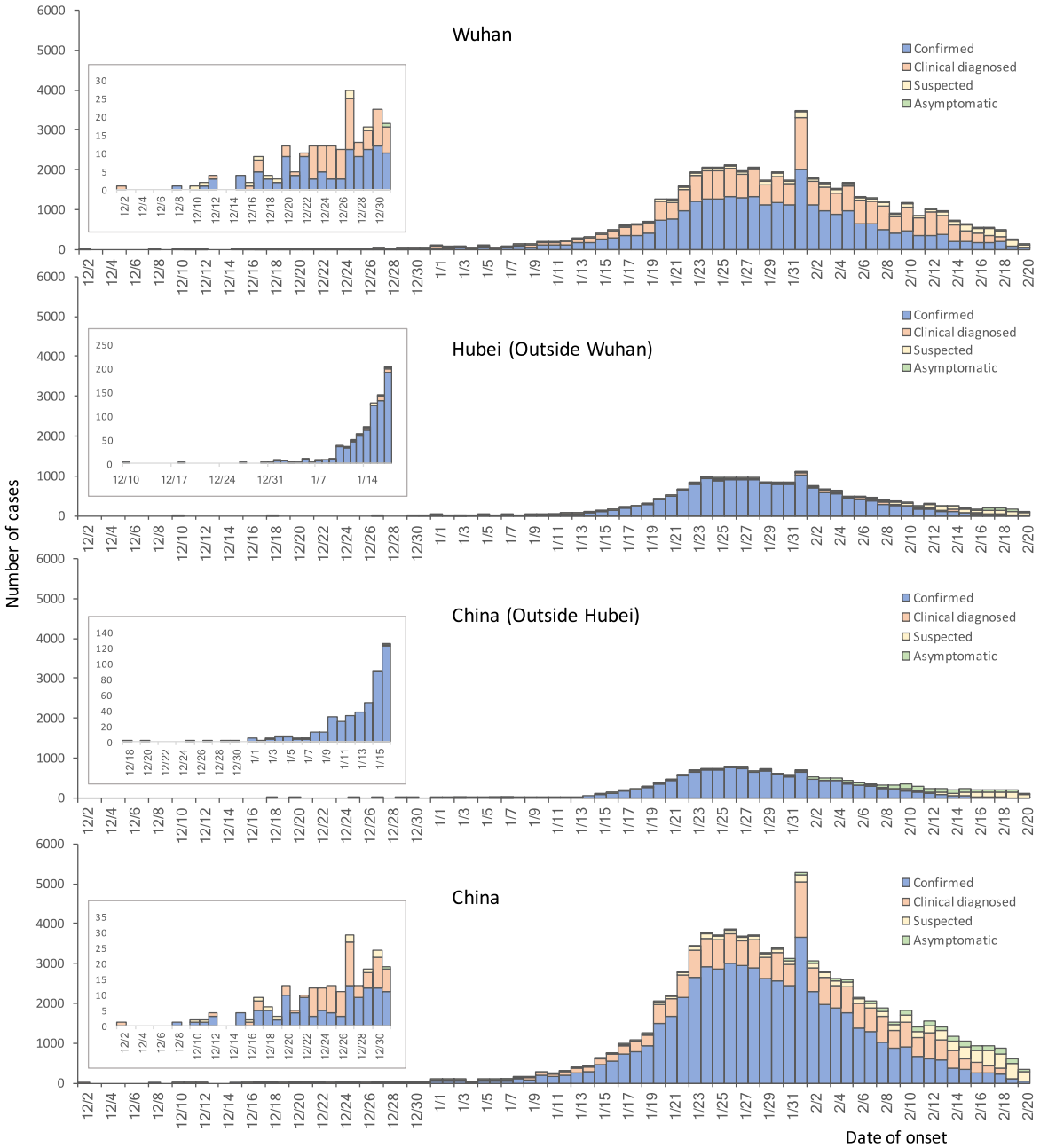

Figure 2 Epidemiologic curve of COVID-19 laboratory confirmed cases, by date of onset of illness, reported in China, as of 20 February 2020

Figure 3 presents epidemic curves of laboratory-confirmed cases, by symptom onset and separately by date of report, at 5, 12, and 20 February 2020. Figures 2 and 3 illustrate that the epidemic rapidly grew from 10-22 January, reported cases peaked and plateaued between 23 January and 27 January, and have been steadily declining since then, apart from the spike that was reported on 1 February (note: at a major hospital in Wuhan, fever clinic patients fell from a peak of 500/day in late January to average 50/day since mid-February).

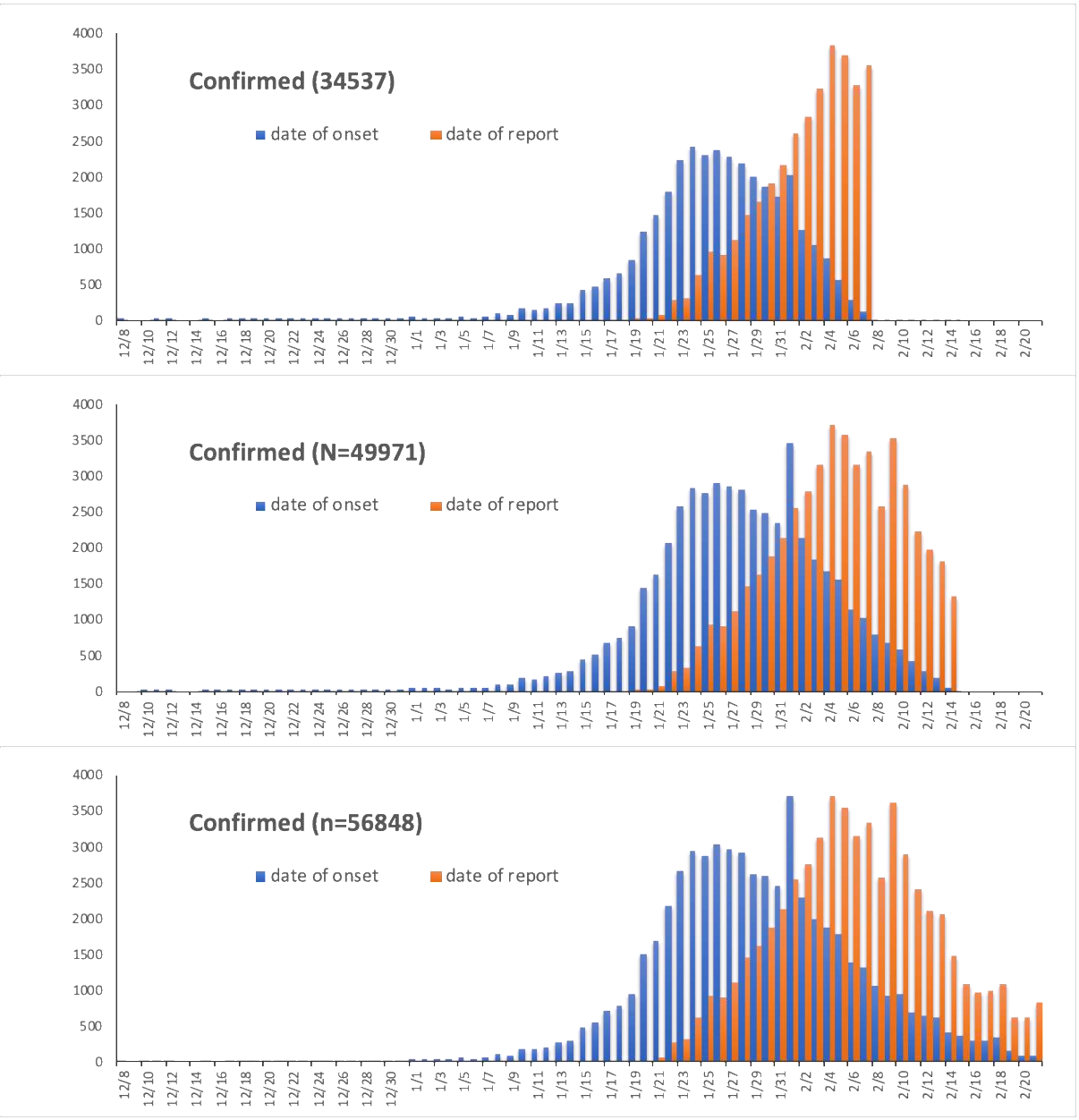

Figure 3. Epidemic curves by symptom onset and date of report as of 5 February (top panel), 12 February (middle panel) and 20 February 2020 (lower panel) for laboratory confirmed COVID-19 cases for all of China

Based on these epidemic curves, the published literature, and our on-site visits in Wuhan (Hubei), Guangdong (Shenzhen and Guangzhou), Sichuan (Chengdu), and Beijing, the Joint Mission team has made the following epidemiological observations:

Demographic characteristics

Among 55,924 laboratory confirmed cases reported as of 20 February 2020, the median age is 51 years (range 2 days-100 years old; IQR 39-63 years old) with the majority of cases (77.8%) aged between 30–69 years. Among reported cases, 51.1% are male, 77.0% are from Hubei and 21.6% are farmers or laborers by occupation.

Zoonotic origins

COVID-19 is a zoonotic virus. From phylogenetics analyses undertaken with available full genome sequences, bats appear to be the reservoir of COVID-19 virus, but the intermediate host(s) has not yet been identified. However, three important areas of work are already underway in China to inform our understanding of the zoonotic origin of this outbreak. These include early investigations of cases with symptom onset in Wuhan throughout December 2019, environmental sampling from the Huanan Wholesale Seafood Market and other area markets, and the collection of detailed records on the source and type of wildlife species sold at the Huanan market and the destination of those animals after the market was closed.

Routes of transmission

COVID-19 is transmitted via droplets and fomites during close unprotected contact between an infector and infectee. Airborne spread has not been reported for COVID-19 and it is not believed to be a major driver of transmission based on available evidence; however, it can be envisaged if certain aerosol-generating procedures are conducted in health care facilities. Fecal shedding has been demonstrated from some patients, and viable virus has been identified in a limited number of case reports. However, the fecal-oral route does not appear to be a driver of COVID-19 transmission; its role and significance for COVID-19 remains to be determined. Viral shedding is discussed in the Technical Findings (Annex C).

Household transmission

In China, human-to-human transmission of the COVID-19 virus is largely occurring in families. The Joint Mission received detailed information from the investigation of clusters and some household transmission studies, which are ongoing in a number of Provinces. Among 344 clusters involving 1308 cases (out of a total 1836 cases reported) in Guangdong Province and Sichuan Province, most clusters (78%-85%) have occurred in families. Household transmission studies are currently underway, but preliminary studies ongoing in Guangdong estimate the secondary attack rate in households ranges from 3-10%.

Contact Tracing

China has a policy of meticulous case and contact identification for COVID-19. For example, in Wuhan more than 1800 teams of epidemiologists, with a minimum of 5 people/team, are tracing tens of thousands of contacts a day. Contact follow up is painstaking, with a high percentage of identified close contacts completing medical observation. Between 1% and 5% of contacts were subsequently laboratory confirmed cases of COVID-19, depending on location. For example:

- As of 17 February, in Shenzhen City, among 2842 identified close contacts, 2842 (100%) were traced and 2240 (72%) have completed medical observation. Among the close contacts, 88 (2.8%) were found to be infected with COVID-19.

- As of 17 February, in Sichuan Province, among 25493 identified close contacts, 25347 (99%) were traced and 23178 (91%) have completed medical observation. Among the close contacts, 0.9% were found to be infected with COVID-19.
- As of 20 February, in Guangdong Province, among 9939 identified close contacts, 9939 (100%) were traced and 7765 (78%) have completed medical observation. Among the close contacts, 479 (4.8%) were found to be infected with COVID-19.

Testing at fever clinics and from routine ILI/SARI surveillance

The Joint Mission systematically enquired about testing for COVID-19 from routine respiratory disease surveillance systems to explore if COVID-19 is circulating more broadly and undetected in the community in China. These systems could include RT-PCR testing of COVID-19 virus in influenza-like-illness (ILI) and severe acute respiratory infection (SARI) surveillance systems, as well as testing of results among all visitors to fever clinics.

In Wuhan, COVID-19 testing of ILI samples (20 per week) in November and December 2019 and in the first two weeks of January 2020 found no positive results in the 2019 samples, 1 adult positive in the first week of January, and 3 adults positive in the second week of January; all children tested were negative for COVID-19 although a number were positive for influenza. In Guangdong, from 1-14 January, only 1 of more than 15000 ILI/SARI samples tested positive for the COVID-19 virus. In one hospital in Beijing, there were no COVID-19 positive samples among 1910 collected from 28 January 2019 to 13 February 2020. In a hospital in Shenzhen, 0/40 ILI samples were positive for COVID-19.

Within the fever clinics in Guangdong, the percentage of samples that tested positive for the COVID-19 virus has decreased over time from a peak of 0.47% positive on 30 January to 0.02% on 16 February. Overall in Guangdong, 0.14% of approximately 320,000 fever clinic screenings were positive for COVID-19.

Susceptibility

As COVID-19 is a newly identified pathogen, there is no known pre-existing immunity in humans. Based on the epidemiologic characteristics observed so far in China, everyone is assumed to be susceptible, although there may be risk factors increasing susceptibility to infection. This requires further study, as well as to know whether there is neutralising immunity after infection.

The transmission dynamics

Inferring from Figures 2 and 3, and based on our observations at the national and provincial/municipal levels during the Joint Mission, we summarize and interpret the transmission dynamics of COVID-19 thus far. It is important to note that transmission dynamics of any outbreak are inherently contextual. For COVID-19, we observe four major types of transmission dynamics during the epidemic growth phase and in the post-control period, and highlight what is known about transmission in children, as follows:

Transmission in Wuhan

Early cases identified in Wuhan are believed to be have acquired infection from a zoonotic source as many reported visiting or working in the Huanan Wholesale Seafood Market. As of 25 February, an animal source has not yet been identified.

At some point early in the outbreak, some cases generated human-to-human transmission chains that seeded the subsequent community outbreak prior to the implementation of the comprehensive control measures that were rolled out in Wuhan. The dynamics likely approximated mass action and radiated from Wuhan to other parts of Hubei province and China, which explains a relatively high R_0 of 2-2.5.

The *cordon sanitaire* around Wuhan and neighboring municipalities imposed since 23 January 2020 has effectively prevented further exportation of infected individuals to the rest of the country.

Transmission in Hubei, other than Wuhan

In the prefectures immediately adjoining Wuhan (Xiaogan, Huanggang, Jingzhou and Ezhou), transmission is less intense. For other prefectures, due to fewer transport links and human mobility flows with Wuhan, the dynamics are more closely aligned with those observed in the other areas of the country. Within Hubei, the implementation of control measures (including social distancing) has reduced the community force of infection, resulting in the progressively lower incident reported case counts.

Transmission in China outside of Hubei

Given Wuhan's transport hub status and population movement during the Chinese New Year (chunyun), infected individuals quickly spread throughout the country, and were particularly concentrated in cities with the highest volume of traffic with Wuhan. Some of these imported seeds generated limited human-to-human transmission chains at their destination.

Given the Wuhan/Hubei experience, a comprehensive set of interventions, including aggressive case and contact identification, isolation and management and extreme social distancing, have been implemented to interrupt the chains of transmission nationwide. To date, most of the recorded cases were imported from or had direct links to Wuhan/Hubei. Community transmission has been very limited. Most locally generated cases have been clustered, the majority of which have occurred in households, as summarized above.

Of note, the highly clustered nature of local transmission may explain a relatively high R_0 (2-2.5) in the absence of interventions and low confirmed case counts with intense quarantine and social distancing measures.

Special settings

We note that instances of transmission have occurred within health care settings prisons and other closed settings. At the present time, it is not clear what role these settings and groups play in transmission. However, they do not appear to be major drivers of the overall epidemic dynamics. Specifically, we note:

(a) **Transmission in health care settings and among health care workers (HCW)** – The Joint Mission discussed nosocomial infection in all locations visited during the Mission. As of 20 February 2020, there were 2,055 COVID-19 laboratory-confirmed cases reported among HCW from 476 hospitals across China. The majority of HCW cases (88%) were reported from Hubei.

Remarkably, more than 40,000 HCW have been deployed from other areas of China to support the response in Wuhan. Notwithstanding discrete and limited instances of nosocomial outbreaks (e.g. a nosocomial outbreak involving 15 HCW in Wuhan), transmission within health care settings and amongst health care workers does not appear to be a major transmission feature of COVID-19 in China. The Joint Mission learned that, among the HCW infections, most were identified early in the outbreak in Wuhan when supplies and experience with the new disease was lower. Additionally, investigations among HCW suggest that many may have been infected within the household rather than in a health care setting. Outside of Hubei, health care worker infections have been less frequent (i.e. 246 of the total 2055 HCW cases). When exposure was investigated in these limited cases, the exposure for most was reported to have been traced back to a confirmed case in a household.

The Joint Team noted that attention to the prevention of infection in health care workers is of paramount importance in China. Surveillance among health care workers identified factors early in the outbreak that placed HCW at higher risk of infection, and this information has been used to modify policies to improve protection of HCW.

(b) **Transmission in closed settings** – There have been reports of COVID-19 transmission in prisons (Hubei, Shandong, and Zhejiang, China), hospitals (as above) and in a long-term living facility. The close proximity and contact among people in these settings and the potential for environmental contamination are important factors, which could amplify transmission. Transmission in these settings warrants further study.

Children

Data on individuals aged 18 years old and under suggest that there is a relatively low attack rate in this age group (2.4% of all reported cases). Within Wuhan, among testing of ILI samples, no children were positive in November and December of 2019 and in the first two weeks of January 2020. From available data, and in the absence of results from serologic studies, it is not possible to determine the extent of infection among children, what role children play in transmission, whether children are less susceptible or if they present differently clinically (i.e. generally milder presentations). The Joint Mission learned that infected children have largely been identified through contact tracing in households of adults. Of note, people interviewed by the Joint Mission Team could not recall episodes in which transmission occurred from a child to an adult.

The signs, symptoms, disease progression and severity

Symptoms of COVID-19 are non-specific and the disease presentation can range from no symptoms (asymptomatic) to severe pneumonia and death. As of 20 February 2020 and

based on 55924 laboratory confirmed cases, typical **signs and symptoms** include: fever (87.9%), dry cough (67.7%), fatigue (38.1%), sputum production (33.4%), shortness of breath (18.6%), sore throat (13.9%), headache (13.6%), myalgia or arthralgia (14.8%), chills (11.4%), nausea or vomiting (5.0%), nasal congestion (4.8%), diarrhea (3.7%), and hemoptysis (0.9%), and conjunctival congestion (0.8%).

People with COVID-19 generally develop signs and symptoms, including mild respiratory symptoms and fever, on an average of 5-6 days after infection (mean incubation period 5-6 days, range 1-14 days).

Most people infected with COVID-19 virus have mild disease and recover. Approximately 80% of laboratory confirmed patients have had **mild to moderate disease**, which includes non-pneumonia and pneumonia cases, 13.8% have **severe disease** (dyspnea, respiratory frequency ≥30/minute, blood oxygen saturation ≤93%, PaO2/FiO2 ratio <300, and/or lung infiltrates >50% of the lung field within 24-48 hours) and 6.1% are **critical** (respiratory failure, septic shock, and/or multiple organ dysfunction/failure). **Asymptomatic infection** has been reported, but the majority of the relatively rare cases who are asymptomatic on the date of identification/report went on to develop disease. The proportion of truly asymptomatic infections is unclear but appears to be relatively rare and does not appear to be a major driver of transmission.

Individuals at **highest risk** for severe disease and death include people aged over 60 years and those with underlying conditions such as hypertension, diabetes, cardiovascular disease, chronic respiratory disease and cancer. Disease in **children** appears to be relatively rare and mild with approximately 2.4% of the total reported cases reported amongst individuals aged under 19 years. A very small proportion of those aged under 19 years have developed severe (2.5%) or critical disease (0.2%).

As of 20 February, 2114 of the 55,924 laboratory confirmed cases have died (**crude fatality ratio** [CFR[2]] 3.8%) (note: at least some of whom were identified using a case definition that included pulmonary disease). The overall CFR varies by location and intensity of transmission (i.e. 5.8% in Wuhan vs. 0.7% in other areas in China). In China, the overall CFR was higher in the early stages of the outbreak (17.3% for cases with symptom onset from 1-10 January) and has reduced over time to 0.7% for patients with symptom onset after 1 February (Figure 4). The Joint Mission noted that the standard of care has evolved over the course of the outbreak.

Mortality increases with age, with the highest mortality among people over 80 years of age (CFR 21.9%). The CFR is higher among males compared to females (4.7% vs. 2.8%). By occupation, patients who reported being retirees had the highest CFR at 8.9%. While patients who reported no comorbid conditions had a CFR of 1.4%, patients with comorbid conditions had much higher rates: 13.2% for those with cardiovascular disease, 9.2% for diabetes, 8.4% for hypertension, 8.0% for chronic respiratory disease, and 7.6% for cancer.

[2] The Joint Mission acknowledges the known challenges and biases of reporting crude CFR early in an epidemic.

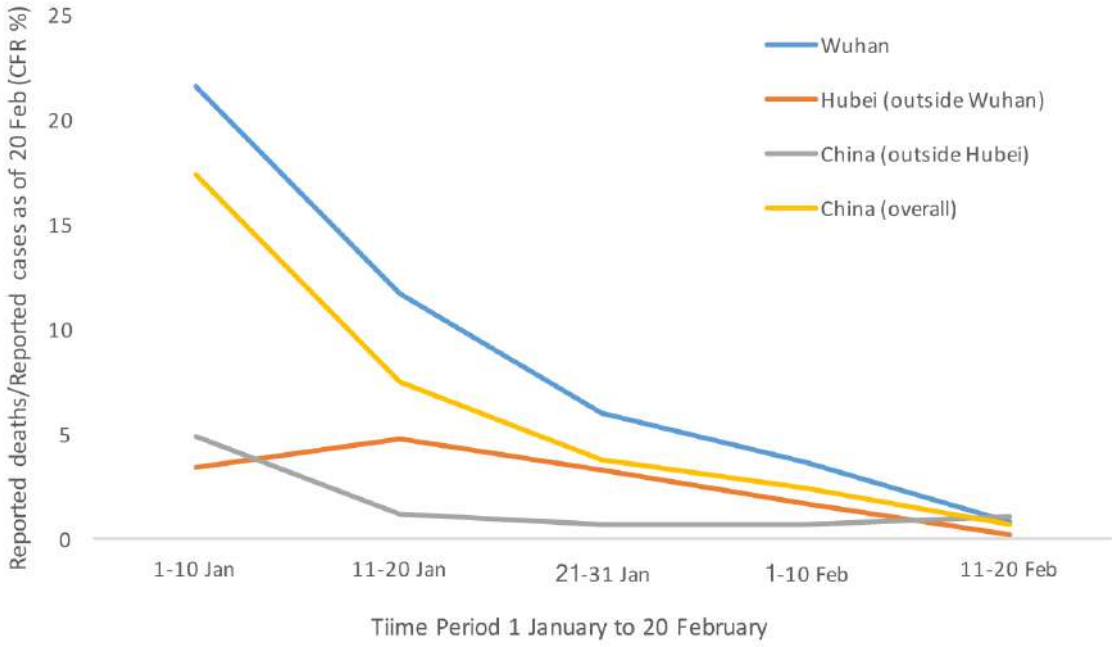

Figure 4 Case fatality ratio (reported deaths among total cases) for COVID-19 in China over time and by location, as of 20 February 2020

Data on the **progression of disease** is available from a limited number of reported hospitalized cases (Figure 5). Based on available information, the median time from symptom onset to laboratory confirmation nationally decreased from 12 days (range 8-18 days) in early January to 3 days (1-7) by early February 2020, and in Wuhan from 15 days (10-21) to 5 days (3-9), respectively. This has allowed for earlier case and contact identification, isolation and treatment.

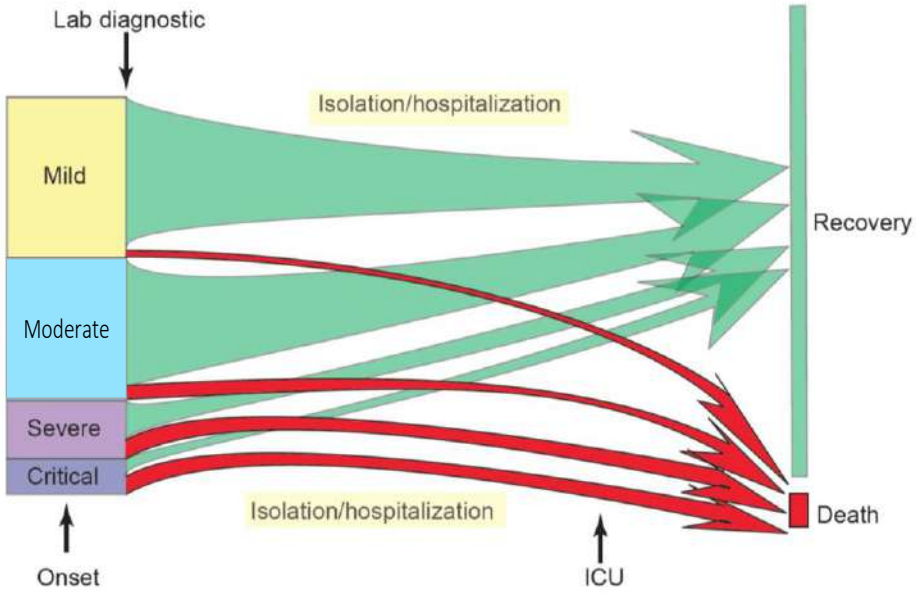

Figure 5. Pattern of disease progression for COVID-19 in China

Note: the relative size of the boxes for disease severity and outcome reflect the proportion of cases reported as of 20 February 2020. The size of the arrows indicates the proportion of cases who recovered or died. Disease definitions are described above. Moderate cases have a mild form of pneumonia.

Using available preliminary data, the median time from onset to clinical recovery for mild cases is approximately 2 weeks and is 3-6 weeks for patients with severe or critical disease. Preliminary data suggests that the time period from onset to the development of severe disease, including hypoxia, is 1 week. Among patients who have died, the time from symptom onset to outcome ranges from 2-8 weeks.

An increasing number of patients have **recovered**; as of 20 February, 18264 (24%) reported cases have recovered. Encouragingly, a report on 20 February from the Guangdong CDC suggests that of 125 severe cases identified in Guangdong, 33 (26.4%) have recovered and been released from hospital, and 58 (46.4%) had improved and were reclassified as having mild/moderate disease (i.e. + milder pneumonia). Among severe cases reported to date, 13.4% have died. Early identification of cases and contacts allows for earlier treatment.

The China response

Upon the detection of a cluster of pneumonia cases of unknown etiology in Wuhan, the CPC Central Committee and the State Council launched the national emergency response. A **Central Leadership Group for Epidemic Response** and the **Joint Prevention and Control Mechanism** of the State Council were established. General Secretary Xi Jinping personally directed and deployed the prevention and control work and requested that the prevention and control of the COVID-19 outbreak be the top priority of government at all levels. Prime Minister Li Keqiang headed the Central Leading Group for Epidemic Response and went to Wuhan to inspect and coordinate the prevention and control work of relevant departments and provinces (autonomous regions and municipalities) across the country. Vice Premier Sun Chunlan, who has been working on the frontlines in Wuhan, has led and coordinated the frontline prevention and control of the outbreak.

The prevention and control measures have been implemented rapidly, from the early stages in Wuhan and other key areas of Hubei, to the current overall national epidemic. It has been undertaken in **three main phases**, with two important events defining those phases. First, COVID-19 was included in the statutory report of Class B infectious diseases and border health quarantine infectious diseases on 20 January 2020, which marked the transition from the initial partial control approach to the comprehensive adoption of various control measures in accordance with the law. The second event was the State Council's issuing, on 8 February 2020, of The Notice on Orderly Resuming Production and Resuming Production in Enterprises, which indicated that China's national epidemic control work had entered a stage of overall epidemic prevention and control together with the restoration of normal social and economic operations.

The first stage

During the early stage of the outbreak, the main strategy focused on preventing the exportation of cases from Wuhan and other priority areas of Hubei Province, and preventing the importation of cases by other provinces; the overall aim was to control the source of infection, block transmission and prevent further spread. The response mechanism was initiated with multi-sectoral involvement in joint prevention and control measures. Wet markets were closed, and efforts were made to identify the zoonotic source. Information on the epidemic was notified to WHO on 3 January, and whole genome sequences of the COVID-19 virus were shared with WHO on 10 January. Protocols for COVID-19 diagnosis and

treatment, surveillance, epidemiological investigation, management of close contacts, and laboratory testing were formulated, and relevant surveillance activities and epidemiological investigations conducted. Diagnostic testing kits were developed, and wildlife and live poultry markets were placed under strict supervision and control measures.

The second stage

During the second stage of the outbreak, the main strategy was to reduce the intensity of the epidemic and to slow down the increase in cases. In Wuhan and other priority areas of Hubei Province, the focus was on actively treating patients, reducing deaths, and preventing exportations. In other provinces, the focus was on preventing importations, curbing the spread of the disease and implementing joint prevention and control measures. Nationally, wildlife markets were closed and wildlife captive-breeding facilities were cordoned off. On 20 January, COVID-19 was included in the notifiable report of Class B infectious diseases and border health quarantine infectious diseases, with temperature checks, health care declarations, and quarantine against COVID-19 instituted at transportation depots in accordance with the law. On 23 January, Wuhan implemented strict traffic restrictions. The protocols for diagnosis, treatment and epidemic prevention and control were improved; case isolation and treatment were strengthened.

Measures were taken to ensure that all cases were treated, and close contacts were isolated and put under medical observation. Other measures implemented included the extension of the Spring Festival holiday, traffic controls, and the control of transportation capacity to reduce the movement of people; mass gathering activities were also cancelled. Information about the epidemic and prevention and control measures was regularly released. Public risk communications and health education were strengthened; allocation of medical supplies was coordinated, new hospitals were built, reserve beds were used and relevant premises were repurposed to ensure that all cases could be treated; efforts were made to maintain a stable supply of commodities and their prices to ensure the smooth operation of society.

The third stage

The third stage of the outbreak focused on reducing clusters of cases, thoroughly controlling the epidemic, and striking a balance between epidemic prevention and control, sustainable economic and social development, the unified command, standardized guidance, and scientific evidence-based policy implementation. For Wuhan and other priority areas of Hubei Province, the focus was on patient treatment and the interruption of transmission, with an emphasis on concrete steps to fully implement relevant measures for the testing, admitting and treating of all patients. A risk-based prevention and control approach was adopted with differentiated prevention and control measures for different regions of the country and provinces. Relevant measures were strengthened in the areas of epidemiological investigation, case management and epidemic prevention in high-risk public places.

New technologies were applied such as the use of big data and artificial intelligence (AI) to strengthen contact tracing and the management of priority populations. Relevant health insurance policies were promulgated on "health insurance payment, off-site settlement, and financial compensation". All provinces provided support to Wuhan and priority areas in Hubei Province in an effort to quickly curb the spread of the disease and provide timely clinical treatment. Pre-school preparation was improved, and work resumed in phases and

batches. Health and welfare services were provided to returning workers in a targeted and 'one-stop' manner. Normal social operations are being restored in a stepwise fashion; knowledge about disease prevention is being popularized to improve public health literacy and skills; and a comprehensive program of emergency scientific research is being carried out to develop diagnostics, therapeutics and vaccines, delineate the spectrum of the disease, and identify the source of the virus.

Knowledge gaps

Since the start of the COVID-19 outbreak, there have been extensive attempts to better understand the virus and the disease in China. It is remarkable how much knowledge about a new virus has been gained in such a short time. However, as with all new diseases, and only 7 weeks after this outbreak began, key knowledge gaps remain. Annex D summarizes the key unknowns in a number of areas including the source of infection, pathogenesis and virulence of the virus, transmissibility, risk factors for infection and disease progression, surveillance, diagnostics, clinical management of severe and critically ill patients, and the effectiveness of prevention and control measures. The timely filling of these knowledge gaps is imperative to enhance control strategies.

III. Assessment

The Joint Mission drew four major conclusions from its work in China and four major conclusions from its knowledge of the broader global response to COVID-19. Recommendations are offered in five major areas to inform the ongoing response globally and in China.

The China Response & Next Steps

1. **In the face of a previously unknown virus, China has rolled out perhaps the most ambitious, agile and aggressive disease containment effort in history. The strategy that underpinned this containment effort was initially a national approach that promoted universal temperature monitoring, masking, and hand washing. However, as the outbreak evolved, and knowledge was gained, a science and risk-based approach was taken to tailor implementation. Specific containment measures were adjusted to the provincial, county and even community context, the capacity of the setting, and the nature of novel coronavirus transmission there.**

   While the fundamental principles of this strategy have been consistent since its launch, there has been constant refinement of specific aspects to incorporate new knowledge on the novel coronavirus, the COVID-19 disease, and COVID-19 containment, as rapidly as that knowledge has emerged. The remarkable speed with which Chinese scientists and public health experts isolated the causative virus, established diagnostic tools, and determined key transmission parameters, such as the route of spread and incubation period, provided the vital evidence base for China's strategy, gaining invaluable time for the response.

As striking, has been the uncompromising rigor of strategy application that proved to be a hallmark in every setting and context where it was examined. There has also been a relentless focus on improving key performance indicators, for example constantly enhancing the speed of case detection, isolation and early treatment. The implementation of these containment measures has been supported and enabled by the innovative and aggressive use of cutting edge technologies, from shifting to online medical platforms for routine care and schooling, to the use of 5G platforms to support rural response operations.

2. **Achieving China's exceptional coverage with and adherence to these containment measures has only been possible due to the deep commitment of the Chinese people to collective action in the face of this common threat. At a community level this is reflected in the remarkable solidarity of provinces and cities in support of the most vulnerable populations and communities. Despite ongoing outbreaks in their own areas, Governors and Mayors have continued to send thousands of health care workers and tons of vital PPE supplies into Hubei province and Wuhan city.**

   At the individual level, the Chinese people have reacted to this outbreak with courage and conviction. They have accepted and adhered to the starkest of containment measures – whether the suspension of public gatherings, the month-long 'stay at home' advisories or prohibitions on travel. Throughout an intensive 9-days of site visits across China, in frank discussions from the level of local community mobilizers and frontline health care providers to top scientists, Governors and Mayors, the Joint Mission was struck by the sincerity and dedication that each brings to this COVID-19 response.

3. **China's bold approach to contain the rapid spread of this new respiratory pathogen has changed the course of a rapidly escalating and deadly epidemic. A particularly compelling statistic is that on the first day of the advance team's work there were 2478 newly confirmed cases of COVID-19 reported in China. Two weeks later, on the final day of this Mission, China reported 409 newly confirmed cases. This decline in COVID-19 cases across China is real.**

   Several sources of data support this conclusion, including the steep decline in fever clinic visits, the opening up of treatment beds as cured patients are discharged, and the challenges to recruiting new patients for clinical trials. Based on a comparison of crude attack rates across provinces, the Joint Mission estimates that this truly all-of-Government and all-of-society approach that has been taken in China has averted or at least delayed hundreds of thousands of COVID-19 cases in the country. By extension, the reduction that has been achieved in the force of COVID-19 infection in China has also played a significant role in protecting the global community and creating a stronger first line of defense against international spread. Containing this outbreak, however, has come at great cost and sacrifice by China and its people, in both human and material terms.

   While the scale and impact of China's COVID-19 operation has been remarkable, it has also highlighted areas for improvement in public health emergency response capacity.

These include overcoming any obstacles to act immediately on early alerts, to massively scale-up capacity for isolation and care, to optimize the protection of frontline health care workers in all settings, to enhance collaborative action on priority gaps in knowledge and tools, and to more clearly communicate key data and developments internationally.

4. **China is already, and rightfully, working to bolster its economy, reopen its schools and return to a more normal semblance of its society, even as it works to contain the remaining chains of COVID-19 transmission. Appropriately, a science-based, risk-informed and phased approach is being taken, with a clear recognition and readiness of the need to immediately react to any new COVID-19 cases or clusters as key elements of the containment strategy are lifted.**

   Despite the declining case numbers, across China every province, city and community visited is urgently escalating their investments in acute care beds and public health capacity. It is crucial that this continues. Fifty thousand infected COVID-19 patient are still under treatment, across the country. However, the Joint Mission has come to understand the substantial knowledge, experience and capacities that China has rapidly built during this crisis. Consequently, it endorses China's working assumption that in most provinces and municipalities it should soon be possible to manage a resurgence in COVID-19 cases, using even more tailored and sustainable approaches that are anchored in very rapid case detection, instant activation of key containment activities, direct oversight by top leadership, and broad community engagement.

   As China works to resume a more normal level of societal and economic activity, it is essential that the world recognizes and reacts positively to the rapidly changing, and decreasing, risk of COVID-19 in the country. China's rapid return to full connectivity with the world, and to full productivity and economic output, is vital to China and to the world. The world urgently needs access to China's experience in responding to COVID-19, as well as the material goods it brings to the global response. It is even more urgent now, with escalating COVID-19 outbreaks outside of China, to constantly reassess any restrictions on travel and/or trade to China that go beyond the recommendations of the IHR Emergency Committee on COVID-19.

The Global Response & Next Steps

1. **The COVID-19 virus is a new pathogen that is highly contagious, can spread quickly, and must be considered capable of causing enormous health, economic and societal impacts in any setting. It is not SARS and it is not influenza. Building scenarios and strategies only on the basis of well-known pathogens risks failing to exploit all possible measures to slow transmission of the COVID-19 virus, reduce disease and save lives.**

   COVID-19 is not SARS and it is not influenza. It is a new virus with its own characteristics. For example, COVID-19 transmission in children appears to be limited compared with influenza, while the clinical picture differs from SARS. Such differences, while based on limited data, may be playing a role in the apparent efficacy of rigorously

applied non-pharmaceutical, public health measures to interrupt chains of human-to-human transmission in a range of settings in China. The COVID-19 virus is unique among human coronaviruses in its combination of high transmissibility, substantial fatal outcomes in some high-risk groups, and ability to cause huge societal and economic disruption. For planning purposes, it must be assumed that the global population is susceptible to this virus. As the animal origin of the COVID-19 virus is unknown at present, the risk of reintroduction into previously infected areas must be constantly considered.

The novel nature, and our continuously evolving understanding, of this coronavirus demands a tremendous agility in our capacity to rapidly adapt and change our readiness and response planning as has been done continually in China. This is an extraordinary feat for a country of 1.4 billion people.

2. **China's uncompromising and rigorous use of non-pharmaceutical measures to contain transmission of the COVID-19 virus in multiple settings provides vital lessons for the global response. This rather unique and unprecedented public health response in China reversed the escalating cases in both Hubei, where there has been widespread community transmission, and in the importation provinces, where family clusters appear to have driven the outbreak.**

   Although the timing of the outbreak in China has been relatively similar across the country, transmission chains were established in a wide diversity of settings, from mega-cities in the north and south of the country, to remote communities. However, the rapid adaptation and tailoring of China's strategy demonstrated that containment can be adapted and successfully operationalized in a wide range of settings.

   China's experience strongly supports the efficacy and effectiveness of anchoring COVID-19 readiness and rapid response plans in a thorough assessment of local risks and of utilizing a differentiated risk-based containment strategy to manage the outbreak in areas with no cases vs. sporadic cases vs. clusters of cases vs. community-level transmission. Such a strategy is essential for ensuring a sustainable approach while minimizing the socio-economic impact.

3. **Much of the global community is not yet ready, in mindset and materially, to implement the measures that have been employed to contain COVID-19 in China. These are the only measures that are currently proven to interrupt or minimize transmission chains in humans. Fundamental to these measures is extremely proactive surveillance to immediately detect cases, very rapid diagnosis and immediate case isolation, rigorous tracking and quarantine of close contacts, and an exceptionally high degree of population understanding and acceptance of these measures.**

   Achieving the high quality of implementation needed to be successful with such measures requires an unusual and unprecedented speed of decision-making by top leaders, operational thoroughness by public health systems, and engagement of society.

Given the damage that can be caused by uncontrolled, community-level transmission of this virus, such an approach is warranted to save lives and to gain the weeks and months needed for the testing of therapeutics and vaccine development. Furthermore, as the majority of new cases outside of China are currently occurring in high and middle-income countries, a rigorous commitment to slowing transmission in such settings with non-pharmaceutical measures is vital to achieving a second line of defense to protect low income countries that have weaker health systems and coping capacities.

The time that can be gained through the full application of these measures – even if just days or weeks – can be invaluable in ultimately reducing COVID-19 illness and deaths. This is apparent in the huge increase in knowledge, approaches and even tools that has taken place in just the 7 weeks since this virus was discovered through the rapid scientific work that has been done in China.

4. **The time gained by rigorously applying COVID-19 containment measures must be used more effectively to urgently enhance global readiness and rapidly develop the specific tools that are needed to ultimately stop this virus.**

   COVID-19 is spreading with astonishing speed; COVID-19 outbreaks in any setting have very serious consequences; and there is now strong evidence that non-pharmaceutical interventions can reduce and even interrupt transmission. Concerningly, global and national preparedness planning is often ambivalent about such interventions. However, to reduce COVID-19 illness and death, near-term readiness planning must embrace the large-scale implementation of high-quality, non-pharmaceutical public health measures. These measures must fully incorporate immediate case detection and isolation, rigorous close contact tracing and monitoring/quarantine, and direct population/community engagement.

   A huge array of COVID-19 studies, scientific research projects and product R&D efforts are ongoing in China and globally. This is essential and to be encouraged and supported. However, such a large number of projects and products needs to be prioritized. Without prioritizing, this risks compromising the concentration of attention and resources and collaboration required to cut timelines by precious weeks and months. While progress has been made, the urgency of the COVID-19 situation supports an even more ruthless prioritization of research in the areas of diagnostics, therapeutics and vaccines.

   Similarly, there is a long list of proposed studies on the origins of COVID-19, the natural history of the disease, and the virus's transmission dynamics. However, the urgency of responding to cases and saving lives makes it difficult for policy makers to consider and act on such comprehensive lists. This can be addressed by balancing studies with the immediate public health and clinical needs of the response. Studies can be prioritized in terms of the largest knowledge gaps that can be most rapidly addressed to have greatest immediate impact on response operations and patient management. This suggests prioritizing studies to identify risk factors for transmission in households, institutions and the community; convenience sampling for this virus in the population using existing surveillance systems; age-stratified sero-epidemiologic surveys; the analysis of clinical case series; and cluster investigations.

IV. Major Recommendations

For China

1. Maintain an appropriate level of emergency management protocols, depending on the assessed risk in each area and recognizing the real risk of new cases and clusters of COVID-19 as economic activity resumes, movement restrictions are lifted, and schools reopen;

2. Carefully monitor the phased lifting of the current restrictions on movement and public gatherings, beginning with the return of workers and migrant labor, followed by the eventual reopening of schools and lifting other measures;

3. Further strengthen the readiness of emergency management mechanisms, public health institutions (e.g. CDCs), medical facilities, and community engagement mechanisms to ensure sustained capacity to immediately launch containment activities in response to any resurgence in cases;

4. Prioritize research that rapidly informs response and risk management decisions, particularly household and health care facility studies, age-stratified sero-epidemiologic surveys and rigorous investigation of the animal-human interface; establish a centralized research program to fast-track the most promising rapid diagnostics and serologic assays, the testing of potential antivirals and vaccine candidates, and Chinese engagement in selected multi-country trials; and

5. As the country with the greatest knowledge on COVID-19, further enhance the systematic and real-time sharing of epidemiologic data, clinical results and experience to inform the global response.

For countries with imported cases and/or outbreaks of COVID-19

1. Immediately activate the highest level of national Response Management protocols to ensure the all-of-government and all-of-society approach needed to contain COVID-19 with non-pharmaceutical public health measures;

2. Prioritize active, exhaustive case finding and immediate testing and isolation, painstaking contact tracing and rigorous quarantine of close contacts;

3. Fully educate the general public on the seriousness of COVID-19 and their role in preventing its spread;

4. Immediately expand surveillance to detect COVID-19 transmission chains, by testing all patients with atypical pneumonias, conducting screening in some patients with upper respiratory illnesses and/or recent COVID-19 exposure, and adding testing for the COVID-19 virus to existing surveillance systems (e.g. systems for influenza-like-illness and SARI); and

5. Conduct multi-sector scenario planning and simulations for the deployment of even more stringent measures to interrupt transmission chains as needed (e.g. the suspension of large-scale gatherings and the closure of schools and workplaces).

For uninfected countries

1. Prepare to immediately activate the highest level of emergency response mechanisms to trigger the all-of-government and all-of society approach that is essential for early containment of a COVID-19 outbreak;

2. Rapidly test national preparedness plans in light of new knowledge on the effectiveness of non-pharmaceutical measures against COVID-19; incorporate rapid detection, largescale case isolation and respiratory support capacities, and rigorous contact tracing and management in national COVID-19 readiness and response plans and capacities;

3. Immediately enhance surveillance for COVID-19 as rapid detection is crucial to containing spread; consider testing all patients with atypical pneumonia for the COVID-19 virus, and adding testing for the virus to existing influenza surveillance systems;

4. Begin now to enforce rigorous application of infection prevention and control measures in all healthcare facilities, especially in emergency departments and outpatient clinics, as this is where COVID-19 will enter the health system; and

5. Rapidly assess the general population's understanding of COVID-19, adjust national health promotion materials and activities accordingly, and engage clinical champions to communicate with the media.

For the public

1. Recognize that COVID-19 is a new and concerning disease, but that outbreaks can managed with the right response and that the vast majority of infected people will recover;

2. Begin now to adopt and rigorously practice the most important preventive measures for COVID-19 by frequent hand washing and always covering your mouth and nose when sneezing or coughing;

3. Continually update yourself on COVID-19 and its signs and symptoms (i.e. fever and dry cough), because the strategies and response activities will constantly improve as new information on this disease is accumulating every day; and

4. Be prepared to actively support a response to COVID-19 in a variety of ways, including the adoption of more stringent 'social distancing' practices and helping the high-risk elderly population.

For the international community

1. Recognize that true solidarity and collaboration is essential between nations to tackle the common threat that COVID-19 represents and operationalize this principle;

2. Rapidly share information as required under the International Health Regulations (IHR) including detailed information about imported cases to facilitate contact tracing and inform containment measures that span countries;

3. Recognize the rapidly changing risk profile of COVID-19 affected countries and continually monitor outbreak trends and control capacities to reassess any 'additional health measures' that significantly interfere with international travel and trade.

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Annexes

A. WHO-China Joint Mission Members

Bruce AYLWARD	Team Lead WHO-China Joint Mission on COVID-19, Senior Advisor to the Director-General, World Health Organization, Geneva, Switzerland
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B. Summary Agenda of the Mission

Dates	Location	Activities
10-15 February 2020 (Advance Team)	Beijing	Advance Team and WHO Country team meetings with national counterparts and institutions
16 February 2020	Beijing	Meeting with the full international team for briefing at the WHO Country office
	Beijing	Workshop at the National Health Commission (NHC) with relevant departments of the Joint Prevention and Control Mechanism of the State Council
17 February 2020	Beijing	Site visit to Beijing Ditan Hospital
	Beijing	Site visit to Anhuali community and health service station, Anzhen street, Chaoyang District, Beijing
	Beijing	Workshop with Chinese Center for Disease Control and Prevention
18 February 2020 (Guangdong Team)	Shenzhen, Guangdong	Shenzhen customs at the airport
	Shenzhen, Guangdong	Shenzhen No.3 People's Hospital
	Shenzhen, Guangdong	Shenzhen Center for Disease Control and Prevention
	Shenzhen, Guangdong	Meeting at Tencent
19 February 2020 (Guangdong Team)	Shenzhen, Guangdong	Qiaoxiang community
	Shenzhen to Guangzhou	Visit to Futian High-speed Train Station, and travel to Guangzhou by train
	Guangzhou	Guangzhou Panyu Sanatorium
	Guangzhou	Guangdong Laboratory of Regenerative Medicine and Health
	Guangzhou	Guangzhou Tiyudongzhihui wet market
	Guangzhou	First Workshop with The People's government of Guangdong Province
20 February 2020 (Guangdong Team)	Guangzhou	Guangdong Provincial Center for Disease Control and Prevention
	Guangzhou	Renmin road campus of Guangzhou Women and Children Medical Center
	Guangzhou	The second Workshop with The People's government of Guangdong Province
18 February 2020 (Sichuan Team)	Beijing to Chengdu	
	Sichuan	Site visit to Chengdu Shuangliu International Airport
		Meeting with the Governor of Sichuan Provincial People's Government
		Site visit to Yong'an Township Central hospital with fever clinic
		Site visit to home community of Yong'an township
19 February 2020 (Sichuan Team)		Symposium with provincial and municipal authorities
		Sichuan Center for Disease Control and Prevention
		Site visit to West China Hospital- Designated COVID-19 hospital
20 February 2020 (Sichuan Team)		Site visit to Chengdu Women and Children's hospital
		Site visit to Pharmaceutical Logistics center
		Site visit to East Chengdu railway station

		Site visit to Chengdu Public Health Clinical Centre- Designated COVID 19 hospital
Sichuan and Guangdong teams reconvene in Guangzhou		
21-24 February 2020		Analyze major findings; Meetings of the WHO-China Joint mission to finalize the report
Feb 22 (Wuhan Team)	Guangzhou to Wuhan	Select team members only
23 February (Wuhan Team)		Site visit to Guanggu Campus of Wuhan Tongji Hospital
		Site visit to Mobile Cabin Hospital in Wuhan Sports Center
		Workshop with relevant departments of the Joint Prevention and Control Mechanism of Hubei Province
		Feedback Meeting with Minister Ma, NHC at the Wuhan Conference Center
24 February 2020	Guangzhou to Beijing	Finalize report, WHO-Joint Press conference in Beijing

C. Detailed Technical Findings

Response management, case and contact management, risk communication and community engagement

The response structures in China were rapidly put in place according to existing emergency plans and aligned from the top to the bottom. This was replicated at the four levels of government (national provincial, prefecture and county/district).

Organizational structure and response mechanism

Response activation at the national level: COVID-19 prevention and control mechanisms were initiated immediately after the outbreak was declared and nine working groups were set up to coordinate the response: a) Coordination b) Epidemic prevention and control c) Medical treatment d) Research e) Public communication f) Foreign affairs g) Medical material support h) Life maintenance supplies and i) Social stability. Each working group has a ministerial level leader. Emergency response laws and regulations for the emergency response to public health emergencies, prevention and control of infectious diseases have been developed or updated to guide the response.

Response activation in provinces: Each province set up a similar structure to manage the outbreak. The response is organized at the levels of national, provincial, prefecture, county/district and the community. By 29 January, all provinces across China had launched the highest level of response for major public health emergencies.

Response Strategy

A clear strategy was developed, and goals were well articulated and communicated across the entire response architecture. This strategy was rapidly adapted and adjusted to the outbreak, both in terms of the epidemiological situation over time and in different parts of the country.

The epidemiological situation has been used to define location into four areas:

- In areas without cases, the strategy in these areas is to "strictly prevent introduction". This includes quarantine arrangements in transportation hubs, monitoring for temperature changes, strengthening of triage arrangements, use of fever clinics, and ensuring normal economic and social operations.
- In areas with sporadic cases, the strategy is focused on "reducing importation, stopping transmission and providing appropriate treatment".
- In areas with community clusters, the strategy is focussed on "stopping transmission, preventing exportation, and strengthening treatment".
- In areas with community transmission, the strictest prevention and control strategies are being implemented, the entry and exit of people from these areas has been stopped and public health and medical treatment measures are comprehensively strengthened.

Main control measures implemented in China

The main control measures implemented in China are as follows and are illustrated in Figures 6A-6D, representing the national level response and examples of the response at the Provincial and municipal levels:

Monitoring and reporting: COVID-19 was included in the statutory reporting of infectious diseases on 20 January and plans were formulated to strengthen diagnosis, monitoring, and reporting.

Strengthening ports of entry and quarantine: The Customs Department launched the emergency plan for public health emergencies at ports across the country and restarted the health declaration card system for entry and exit into cities as well as strict monitoring of the temperature of entry and exit passengers.

Treatment: For severe or critical patients, the principle of "Four Concentrations" was implemented: i.e. concentrating patients, medical experts, resources and treatment into special centres. All cities and districts transformed relevant hospitals, increased the number of designated hospitals, dispatched medical staff, and set up expert groups for consultation, so as to minimise mortality of severe patients. Medical resources from all over China have been mobilized to support the medical treatment of patients in Wuhan.

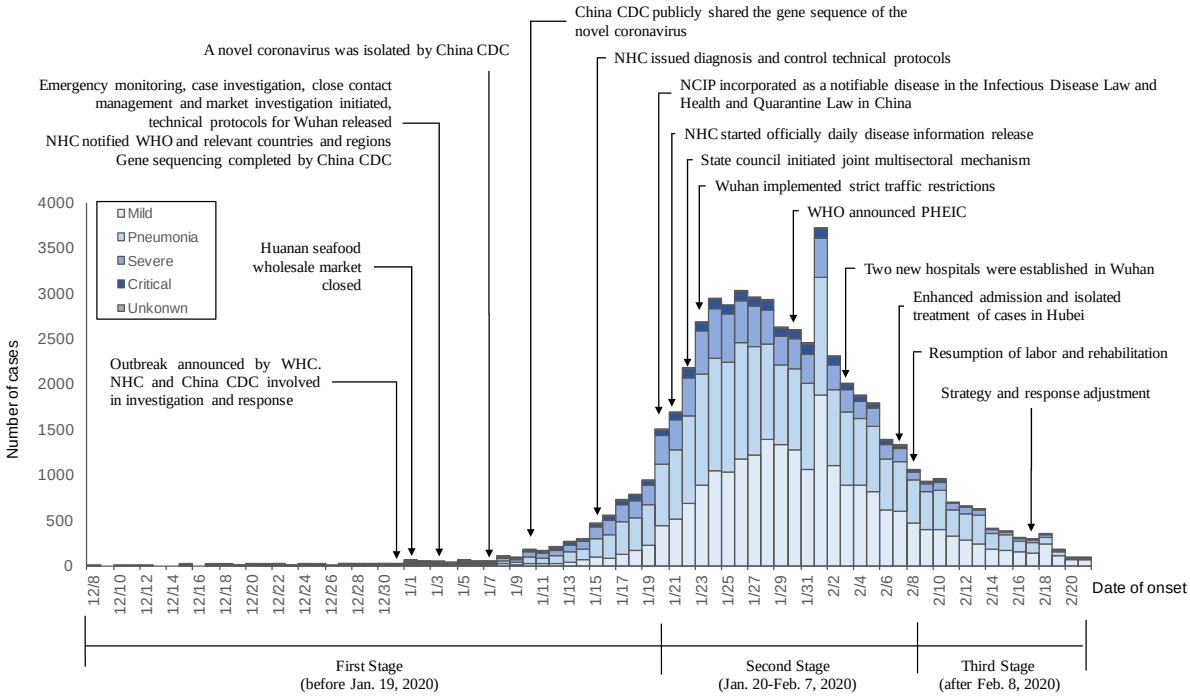
Epidemiological investigation and close contact management: Strong epidemiological investigations are being carried out for cases, clusters, and contacts to identify the source of infection and implement targeted control measures, such as contact tracing.

Social distancing: At the national level, the State Council extended the Spring Festival holiday in 2020, all parts of the country actively cancelled or suspended activities like sport events, cinema, theatre, and schools and colleges in all parts of the country postponed re-opening after the holiday. Enterprises and institutions have staggered their return to work. Transportation Departments setup thousands of health and quarantine stations in national service areas, and in entrances and exits for passengers at stations. Hubei Province adopted the most stringent traffic control measures, such as suspension of urban public transport, including subway, ferry and long-distance passenger transport. Every citizen has to wear a mask in public. Home support mechanisms were established. As a consequence of all of these measures, public life is very reduced.

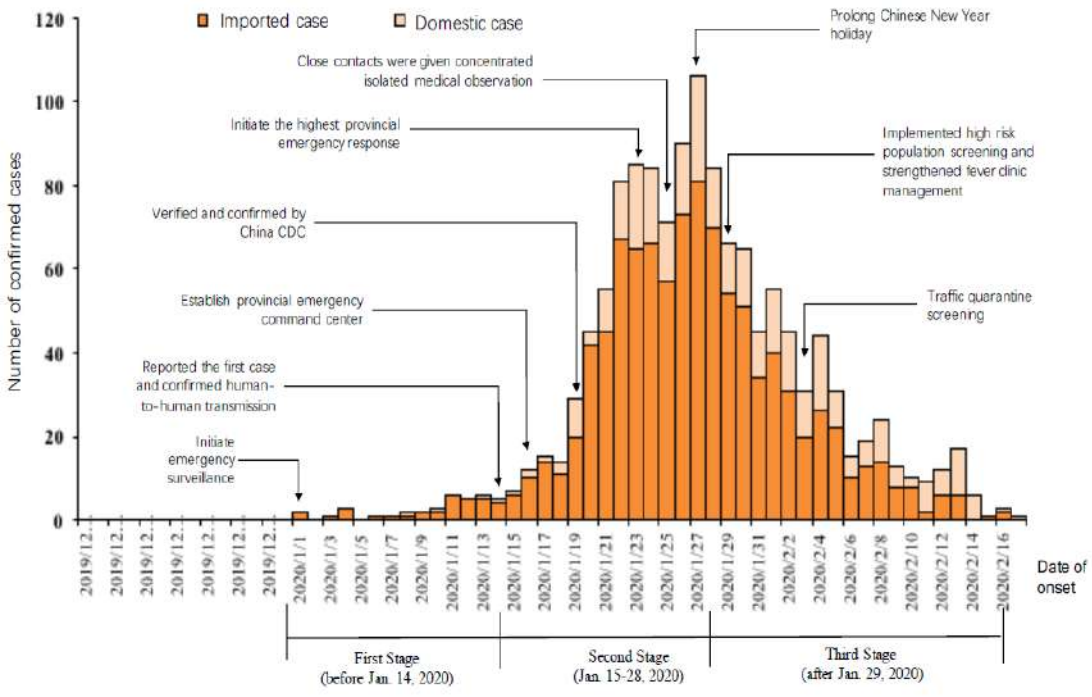
Funding and material support: Payment of health insurance was taken over by the state, as well as the work to improve accessibility and affordability of medical materials, provide personal protection materials, and ensure basic living materials for affected people.

Emergency material support: The government restored production and expanded production capacity, organized key enterprises that have already started to exceed current production capacity, supported local enterprises to expand imports, and used cross-border e-commerce platforms and enterprises to help import medical materials and improve the ability to guarantee supplies.

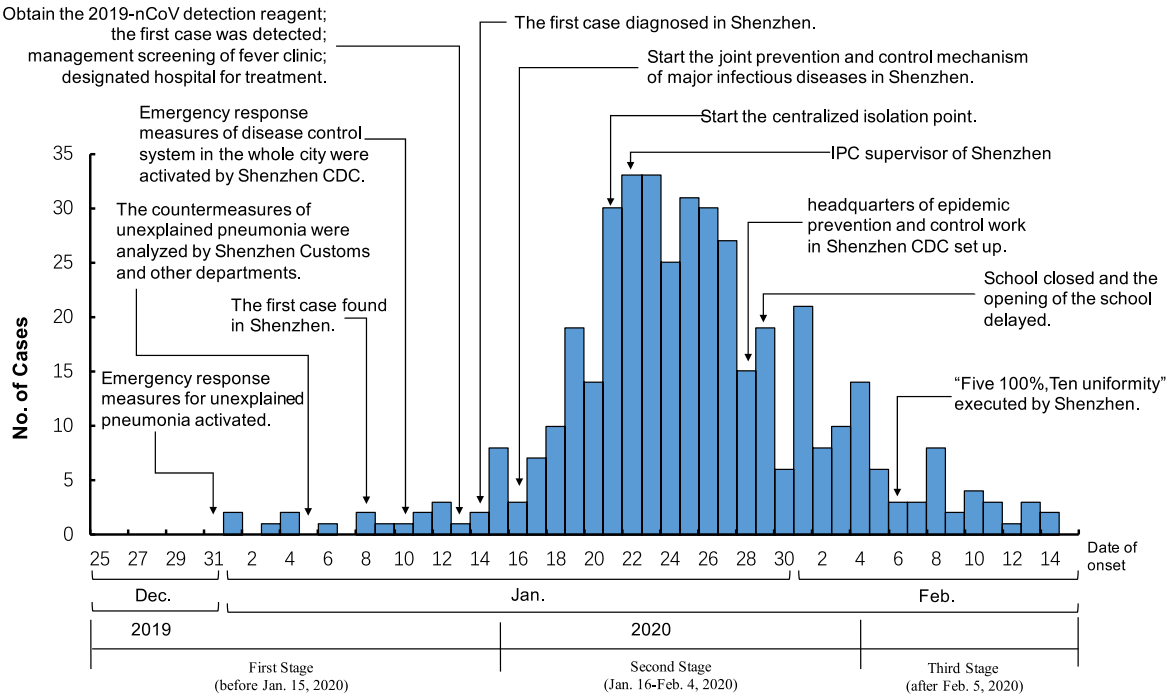
A


China CDC publicly shared the gene sequence of the novel coronavirus
A novel coronavirus was isolated by China CDC
NHC issued diagnosis and control technical protocols
Emergency monitoring, case investigation, close contact management and market investigation initiated, technical protocols for Wuhan released
NHC notified WHO and relevant countries and regions
Gene sequencing completed by China CDC
NCIP incorporated as a notifiable disease in the Infectious Disease Law and Health and Quarantine Law in China
NHC started officially daily disease information release
State council initiated joint multisectoral mechanism
Wuhan implemented strict traffic restrictions
WHO announced PHEIC
Mild
Pneumonia
Severe
Critical
Unkonwn
Huanan seafood wholesale market closed
Two new hospitals were established in Wuhan
Enhanced admission and isolated treatment of cases in Hubei
Outbreak announced by WHC. NHC and China CDC involved in investigation and response
Resumption of labor and rehabilitation
Strategy and response adjustment
Number of cases
Date of onset
First Stage (before Jan. 19, 2020)
Second Stage (Jan. 20-Feb. 7, 2020)
Third Stage (after Feb. 8, 2020)

B


Imported case
Domestic case
Prolong Chinese New Year holiday
Close contacts were given concentrated isolated medical observation
Initiate the highest provincial emergency response
Implemented high risk population screening and strengthened fever clinic management
Verified and confirmed by China CDC
Establish provincial emergency command center
Traffic quarantine screening
Reported the first case and confirmed human-to-human transmission
Initiate emergency surveillance
Number of confirmed cases
Date of onset
First Stage (before Jan. 14, 2020)
Second Stage (Jan. 15-28, 2020)
Third Stage (after Jan. 29, 2020)

C



D

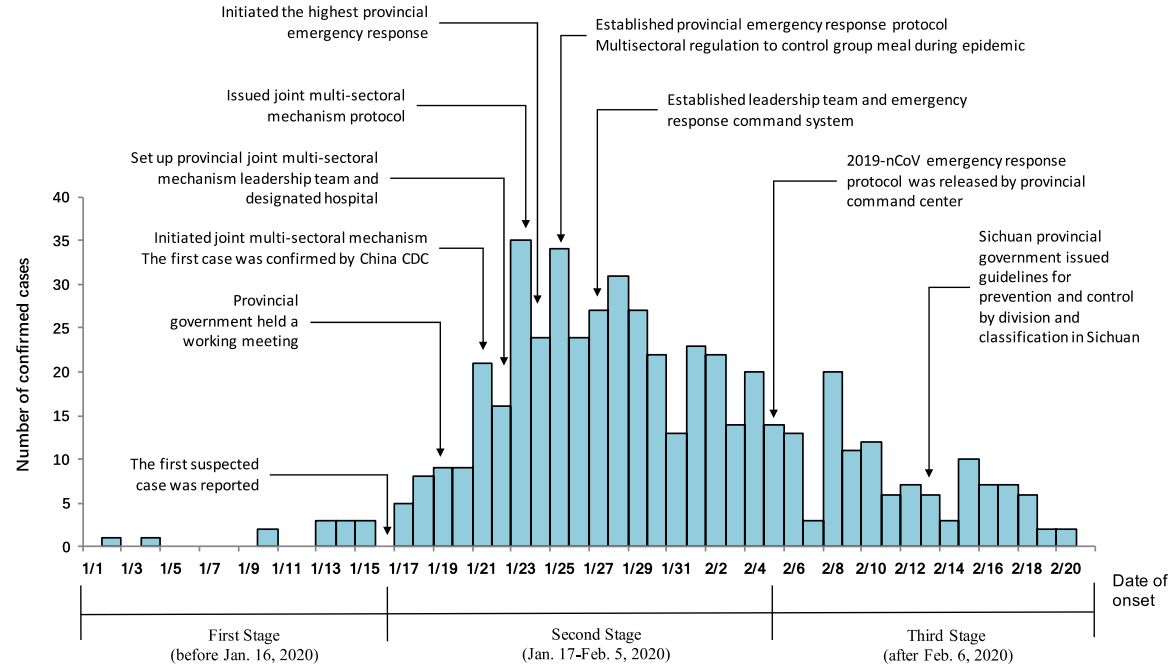


Figure 6. COVID-19 epidemic curves and major intervention measures in China as implemented at a) the national level b) in Guangdong province, c) in Shenzhen municipality and d) in Sichuan province

Risk communications (information release, public and media communications)

International and interregional cooperation and information sharing: From 3 January 2020, information on COVID-19 cases has been reported to WHO daily. Full genome sequences of the new virus were shared with WHO and the international community immediately after the pathogen was identified on 7 January. On 10 January, an expert group involving Hong Kong, Macao and Taiwanese technical experts and a World Health Organization team was invited to visit Wuhan. A set of nucleic acid primers and probes for PCR detection for COVID-19 was released on 21 January.

Daily updates: The National Health Commission announces the epidemic situation every day and holds daily press conferences to respond to emerging issues. The government also frequently invites experts to share scientific knowledge on COVID-19 and to address public concerns.

Psychological care: This is provided to patients and the public. Governments at all levels, NGOs and all sectors of society developed guidelines for emergency psychological crisis intervention and guidelines for public psychological self-support and counselling. A hotline for mental health services has been established for the public.

IT platform: China has capitalized on the use of technology, big data and AI for COVID-19 preparedness, readiness and response. Authoritative and reliable information, medical guidance, access to online services, provision of educational tools and remote work tools have been developed in and used across China. These services have increased accessibility to health services, reduced misinformation and minimized the impact of fake news.

Social mobilization and community engagement

Civil society organizations (community centers and public health centers) have been mobilized to support prevention and response activities. The community has largely accepted the prevention and control measures and is fully participating in the management of self-isolation and enhancement of public compliance. Community volunteers are organized to support self-isolation and help isolated residents at home to solve practical life difficulties. Measures were taken to limit the movement of the population through home-based support. Up to now, outside of Hubei, 30 provinces have registered and managed more than 5 million people coming from Wuhan.

Clinical case management and infection prevention and control

The main **signs and symptoms** of COVID-19 include fever, dry cough, fatigue, sputum production, shortness of breath, myalgia or arthralgia, sore throat, and headache. Nausea or vomiting has been reported in a small percentage of patients (5%). On 14 February, China CDC described the clinical features, outcomes, laboratory and radiologic findings of 44 672 laboratory-confirmed cases. Only 965 (2.2%) were under 20 years of age and there is just one recorded death (0.1%) in this age group. Most patients (77.8%) were aged 30 to 69 years. Patients aged over 80 years had a CFR of 14.8%. The CFR was highest in those with

comorbidities including cardiovascular, diabetes, chronic respiratory disease, hypertension and cancer.

As opposed to Influenza A(H1N1)pdm09, **pregnant women** do not appear to be at higher risk of severe disease. In an investigation of 147 pregnant women (64 confirmed, 82 suspected and 1 asymptomatic), 8% had severe disease and 1% were critical.

Severe cases are defined as tachypnoea (≧30 breaths/ min) or oxygen saturation ≤93% at rest, or PaO2/FIO2 <300 mmHg. **Critical cases** are defined as respiratory failure requiring mechanical ventilation, shock or other organ failure that requires intensive care. About a quarter of severe and critical cases require mechanical ventilation while the remaining 75% require only oxygen supplementation.

China has a principle of **early identification**, early isolation, early diagnosis and early treatment. Early identification of suspect cases is critical to containment efforts and occurs via a process of temperature screening and questioning at entrances to many institutions, communities, travel venues (airports, train stations) and hospitals. Many hospitals have fever clinics that were established and maintained since the SARS outbreak. In China, laboratory tests were originally requested according to the case definitions, which included an epidemiological link to Hubei or other confirmed cases. However, more recently, a more **liberal clinical testing regimen** allows clinicians to test with a low index of suspicion.

Suspect cases are isolated in normal pressure single rooms, wear a surgical mask (for source control). Staff in China wear a cap, eye protection, n95 masks, gown and gloves (single use only). In Wuhan it is necessary for most suspects to be cohorted in a normal pressure isolation ward. Staff wear PPE continuously, changing it only when they leave the ward.

PCR test results are returned the same day. If positive, patients are transported to designated hospitals (including negative pressure ambulances in some cities). All patients, including the mild and asymptomatic, with a positive test are admitted. The designated hospitals are known and are strategically placed with at least one per district/county. Positive cases are cohorted by gender. Negative tested patients are managed based on clinical needs. All patients are evaluated with a respiratory multiplex to look for other diagnoses. This can add to the reassurance that a negative COVID-19 test reflects a lack of infection with COVID-19.

In Wuhan, there are 45 **designated hospitals**, 6 of which are designated for critical patients, and 39 for severe patients and/or any patients >65 years old. There are an additional 10 temporary hospitals reconstructed from gymnasium and exhibition centers, which are for mild patients. Other surge measures undertaken in Wuhan include two new temporary hospitals with 2600 beds, plus many makeshift hospitals to increase bed capacity. Bed capacity within Wuhan has increased to >50,000.

Patients are treated according to the **National Clinical guidelines** (edition 6) released by the China National Health Commission (NHC). There are no specific antiviral or immune modulating agents proven (or recommended) to improve outcomes. All patients are monitored by regular pulse oximetry. The guidelines include supportive care by clinical category (mild, moderate, severe and critical), as well as the role of investigational

treatments such as chloroquine, phosphate, lopinavir/ritonavir, alpha interferon, ribavirin, arbidol. The application of intubation/invasive ventilation and ECMO in critically ill patients can improve survival. The Joint Mission Team was told of ECMO use in four patients at one hospital with one death and three who appeared to be improving. Clearly, though ECMO is very resource consumptive, any health system would need to carefully weigh the benefits. There is widespread use of Traditional Chinese Medicines (TCM), for which the affects must be fully evaluated.

Patients with COVID-19 are not permitted **visitors**. Staff use coveralls, masks, eye cover, and gloves, removing PPE only when they leave the ward.

Patients are discharged after clinical recovery (afebrile >3 days, resolution of symptoms and radiologic improvement) and 2 negative PCR tests taken 24 hours apart. Upon discharge, they are asked to minimise family and social contact and to wear a mask. There are expectations of clinical trial results within a matter of weeks, which will see further opportunities for treatment.

There are guidelines for **elderly care** specifically targeting prevention in individuals and introduction of COVID-19 to nursing homes.

Training programmes by video conference nationally are scaled up to inform staff of best practice and to ensure PPE usage. **Clinical champions** are created to disperse knowledge and provide local expertise.

Maintenance of usual healthcare activities is maintained by hospital zoning (e.g. clean/contaminated sections of the healthcare facility).

Laboratory, diagnostics and virology

The virus found to cause COVID-19 was initially isolated from a clinical sample on 7 January. It is notable that within weeks following the identification of the virus, a series of reliable and sensitive **diagnostic tools** were developed and deployed. On 16 January, the first RT-PCR assays for COVID-19 were distributed to Hubei. Real-time PCR kits were distributed to all the provinces on 19 January and were provided to Hong Kong SAR and Macao SAR on 21 January. Information regarding viral sequences and PCR primers and probes was shared with WHO and the international community by China CDC on 12 January 2020. To facilitate product development and research on the new virus, COVID-19 virus sequences were uploaded to the GISAID Database by China.

By 23 February, there were 10 kits for detection of COVID-19 approved in China by the NMPA, including 6 RT-PCR kits, 1 isothermal amplification kit, 1 virus sequencing product and 2 colloidal gold antibody detection kits. Several other tests are entered in the emergency approval procedure. Currently, there are at least 6 local producers of PCR test kits approved by NMPA. Overall, producers have the capacity to produce and distribute as many as 1,650,000 tests/week.

Specimens from both the upper respiratory tract (URT; nasopharyngeal and oropharyngeal) and lower respiratory tract (LRT; expectorated sputum, endotracheal aspirate, or bronchoalveolar lavage) are collected for COVID-19 testing by PCR.

COVID-19 virus has been detected in respiratory, fecal and blood specimens. According to preliminary data from Guangzhou CDC as of 20 February, virus can initially be detected in upper respiratory samples 1-2 days prior to symptom onset and persist for 7-12 days in moderate cases and up to 2 weeks in severe cases. Viral RNA has been detected in feces in up to 30% of patients from day 5 following onset of symptoms and has been noted for up to 4-5 weeks in moderate cases. However, it is not clear whether this correlates with the presence of infectious virus. While live virus has been cultured from stool in some cases, the role of fecal-oral transmission is not yet well understood. COVID-19 has been isolated from the clinical specimens using human airway epithelial cells, Vero E6 and Huh-7 cell lines.

Serological diagnostics are rapidly being developed but are not yet widely used. Joint Mission members met with local research teams at the China CDC, Guangzhou Regenerative Medicine and Health Guangdong Laboratory. The teams reported on the development of tests for IgM, IgG and IgM+IgG using rapid test platforms utilizing chemiluminiscence. ELISA assays are also under development.

Research & Development

The government of China has initiated a series of major emergency research programs on virus genomics, antivirals, traditional Chinese medicines, clinical trials, vaccines, diagnostics and animal models. Research includes fundamental basic research and human subjects research. For the purpose of this report, human studies are limited to those involving IRB approval and informed consent. Other forms of human subjects investigations are included in the sections on epidemiology in this report. Well-focused, robust research conducted in the setting of an outbreak has the potential of saving many lives by identifying the most effective ways to prevent, diagnose and treat disease.

Since the COVID-19 virus has a genome identity of 96% to a bat SARS-like coronavirus and 86%-92% to a pangolin SARS-like coronavirus, an animal source for COVID-19 is highly likely. This was corroborated by the high number of RT-PCR positive environmental samples taken from the Huanan Seafood Market in Wuhan.

At least 8 **nucleic acid-based methods** for direct detection of COVID-19 and two colloidal gold antibody detection kits have been approved in China by the NMPA. Several other tests are close to approval. It will be important to compare the sensitivities and specificities of these and future serologic tests. Development of rapid and accurate **point-of-care tests** which perform well in field settings are especially useful if the test can be incorporated into presently commercially available multiplex respiratory virus panels. This would markedly improve early detection and isolation of infected patients and, by extension, identification of contacts. **Rapid IgM and IgG antibody testing** are also important ways to facilitate early diagnosis. Standard serologic testing can be used for retrospective diagnoses in the context of serosurveys that help better understand the full spectrum of COVID-19 infection.

A variety of **repurposed drugs and investigational drugs** have been identified. Screening NMPA approved drug libraries and other chemical libraries have identified novel agents. Hundreds of clinical trials involving remdesivir, chloroquine, favipiravir, chloroquine, convalescent plasma, TCM and other interventions are planned or underway. Rapid completion of the most important of these studies is critical to identifying truly effective therapies. However, evaluation of investigational agents requires adequately powered, randomized, controlled trials with realistic eligibility criteria and appropriate stratification of patients. It is important for there to be a degree of coordination between those conducting studies within and beyond China.

The development of a safe and effective **vaccine** for this highly communicable respiratory virus is an important epidemic control measure. Recombinant protein, mRNA, DNA, inactivated whole virus and recombinant adenovirus vaccines are being developed and some are now entering animal studies. Vaccine safety is of prime concern in the area of coronavirus infection in view of the past experience of disease enhancement by inactivated whole virus measles vaccine and similar reports in animal experiments with SARS coronavirus vaccines. It will be important that these vaccine candidates rapidly move into appropriate clinical trials.

The ideal **animal model** for studying routes of virus transmission, pathogenesis, antiviral therapy, vaccine and immune responses has yet to be found. The ACE2 transgenic mouse model and Macaca Rhesus model are already used in research laboratories. Systematically addressing which models can accurately mimic human infection is required.

There is a global rush for masks, hand hygiene products and other personal protective equipment. The relative importance of **non-pharmaceutical control measures** including masks, hand hygiene, and social distancing require further research to quantify their impact.

There are distinct patterns of intra-familial transmission of COVID-19. It is unclear whether or not there are host factors, including genetic factors, that influence susceptibility or disease course. COVID-19 has a varied clinical course and a precise description of that course is not available. In addition, the long-term consequences of COVID-19 are unknown. An observational cohort study of patients with COVID-19 enrolled from the time of diagnosis (with appropriate controls) could provide in-depth information about clinical, virologic and immunologic characteristics of COVID-19. Table 1 summarizes priority research areas with immediate to longer term goals.

Table 1 Priority research areas with immediate, intermediate and longer-term goals

Immediate Goals	Intermediate Goals	Long-term goals
Diagnostics: RNA assays, antibody & antigen assays, point of care detection	Diagnostics: Multiplex diagnostic platforms	Diagnostics: Prognostic markers
Therapeutics: Remdesivir, favipiravir, chloroquine, plasma, TCM	Therapeutics: intravenous immunoglobulin (IVIg)	Therapeutics: Innovative approaches (CRISPR-CAS; RNAi; Cell-based; positive hits from library screening)
Vaccines: Development of animal models	Vaccines: mRNA candidates and candidate viral vectors	Vaccines: inactivated candidates and subunit candidates

D. Knowledge Gaps

Knowledge gaps and key questions to be answered to guide control strategies include:

Source of infection

- Animal origin and natural reservoir of the virus
- Human-animal interface of the original event
- Early cases whose exposure could not be identified

The pathogenesis and virulence evolution of the virus

Transmission dynamics

- Modes of Transmission:
    - Role of aerosol transmission in non-health care settings
    - Role of fecal-oral transmission
- Viral shedding in various periods of the clinical course in different biological samples (i.e. upper and lower respiratory tract, saliva, faeces, urine)
    - Before symptom onset and among asymptomatic cases
    - During the symptomatic period
    - After the symptomatic period / during clinical recovery

Risk factors for infection

- Behavioral and socio-economic risk factors for infection in
    - Households / institutions
    - the Community
- Risk factors for asymptomatic infection
- Risk factors for nosocomial infection
    - among health care workers
    - among patients

Surveillance and monitoring

- Monitoring community transmission through existing
    - ILI surveillance
    - SARI surveillance
- The outbreak trend and intervention dynamics
    - Basic reproduction numbers in various stages of the epidemic
    - The epidemic's relation to seasonality

Laboratory and diagnostics

- Sensitivity and specificity of different nucleic acid (PCR, NAATs and rapid tests), antibody and antigen tests
- Post-infection antibody titers and the duration of protection
- Sero-prevalence among
    - Health care workers
    - General population
    - Children

Clinical management of severe and critically ill patients

- Value of ECMO in the management of critically ill patients
- Best practice using mechanical ventilation in the management of critically ill patients
- Re-evaluation of the role of steroids in the management of severe and critically ill patients
- Identification of factors associated with successful clinical management and outcome
- Determination of the effectiveness of Traditional Chinese Medicines (TCM)
- Determination the effectiveness of additional investigational treatment options (e.g. intravenous immunoglobulin/IVIg, convalescent plasma)

Prevention and control measures

- Key epidemic indicators that inform evidence-based control strategy decision making and adjustments
- Effectiveness of infection prevention and control (IPC) measures in various health care settings
- Effectiveness of entry and exit screening
- Effectiveness of the public health control measures and their socio-economic impact
    - Restriction of movement
    - Social distancing
    - School and workplace closures
    - Wearing mask in general public
    - Mandatory quarantine
    - Voluntary quarantine with active surveillance

E. Operational & Technical Recommendations

Operational/programmatic recommendations

- Reassess risk and capacities based on different stages of the outbreak; approve different measures during the different phases of the response; assess different stages of the response; reach a balance between response and social development
- Initiate a timely scientific evidence based, efficient and flexible joint multi-sectoral mechanism, which is driven by strong government leadership

Technical recommendations

Epidemiology and transmission

- Continue enhanced surveillance across the country through existing respiratory disease systems, including ILI, SARI or pneumonia surveillance systems
- Prioritize early investigations, including household transmission studies, age-stratified sero-epidemiologic surveys including children, case-control studies, cluster investigations, and serologic studies in health care workers

Severity

- Continue to share information on patient management, disease progression and factors leading to severe disease and favorable outcomes
- Review and analyze the possible factors associated with the disease severity, which may include:
    - natural history studies to better understand disease progression in mild, severe and fatal patients
    - medical chart reviews about disease severity among vulnerable groups, (e.g. those with underlying conditions, older age groups, pregnant women and children) to develop appropriate standards of care
    - evaluation of factors leading to favorable outcomes (e.g. early identification and care)

Clinical care and infection prevention and control

- Suspect patients who have not yet been tested should be isolated in single normal pressure rooms; cohorting of positive cases is acceptable
- Physicians and all health care workers need to maintain a high level of clinical alert for COVID-19
- For affected countries, standardize training for clinical care and IPC and scale with the development of local (e.g. district level) experts
- Ensure concurrent testing for other viral pathogens to support a negative COVID-19 test
- Ensure maintenance of usual and essential services during the outbreak

- Ensure processes are in place for infection prevention among the most vulnerable, including the elderly
- Ensure readiness to provide clinical care and to meet IPC needs, including:
    a. anticipated respiratory support requirements (e.g. pulse oximeters, oxygen, and invasive support where appropriate)
    b. national guidelines for clinical care and IPC, revised for COVID-19
    c. nationally standardised trainings for disease understanding and PPE use for HCWs
    d. community engagement
    e. PPE and Medication stockpiles
    f. early identification protocols; triage, temperature screening, holding bays (triage, including pulse oximetry)
    g. treatment protocols including designated facilities, patient transportation
    h. enhanced uptake of influenza and pneumococcal vaccine according to national guidelines
    i. laboratory testing
    j. rapid response teams

Laboratory and virology

- Continue to perform whole genome analysis of COVID-19 viruses isolated from different times and places, to evaluate virus evolution
- Conduct pathogenesis studies using biopsy/post-mortem specimens of COVID-19 patients or infected animal models
- Evaluate available nucleic acid PCR diagnostics
- Rapidly develop and evaluate rapid/point-of-care diagnostics and serologic assays
- Conduct further study to interpret the result of positive COVID-19 RNA detection in feces in patients recovering from COVID-19
- Enhance international cooperation, especially in terms of biosafety and information sharing for increased understanding of the COVID-19 virus and traceability of the virus
- Consider monitoring proinflammatory cytokines via multiplex assays to predict the development of “cytokine storm”

Research and development

- Additional effort should be made to find the animal source, including the natural reservoir and any intermediate amplification host, to prevent any new epidemic foci or resurgence of similar epidemics

- Efforts should be made to consistently evaluate existing and future diagnostic tests for detection of COVID-19 using a harmonized set of standards for laboratory tests and a biorepository that can be used for evaluating these tests
- Consider the establishment of a centralized research program in China to oversee that portfolio and ensure the most promising research (vaccines, treatments, pathogenesis) are adequately supported and studied first; program staff dedicated to the clinical research would work at the clinical research site(s) to decrease the research workload of the clinicians at the site
- Consider including one or more sites within China in the ongoing and future multi-center, international trials; Chinese investigators should be actively engaged in international trials
- Continue to develop additional animal models, making every effort to ensure these mimic human infection and virus transmission as closely as possible
- Conduct studies to determine which of the commonly used forms of PPE are most effective in controlling the spread of COVID-19

_____

From:	Bogan, Sharon
To:	Public Health Public Information Officer
Subject:	Clarification: Media release: First death due to novel coronavirus in a resident of King County
Date:	Saturday, February 29, 2020 2:23:08 PM
Attachments:	image001.png image002.png

Clarification: Today, Public Health is reporting three presumptive positive cases of novel coronavirus (COVID-19), including one person who died. This brings the total of presumptive positive cases in King County to four.

Public Health
Seattle & King County

Washington State Department of Health

February 29, 2020

Contacts: Public Health – Seattle & King County Media Line: 206-477-9000

Email: PHPIO@kingcounty.gov

Washington State Department of Health: 253-512-7100

Email: doh-pio@doh.wa.gov

Contact: James Apa, 206-263-8698

First death due to novel coronavirus (COVID-19) in a resident of King County

There are also confirmed cases of COVID-19 from a long-term care facility in King County

Summary

Public Health – Seattle & King County and the Washington State Department of Health are announcing new cases of COVID-19, including one death. The individual who died was a man in his 50s with underlying health conditions who had no history of travel or contact with a known COVID-19 case. Public Health is also reporting two cases of COVID-19 virus connected to a long-term care facility in King County.

Story

Public Health – Seattle & King County, Washington State Department of Health and the Centers for Disease Control and Prevention (CDC) are reporting today three presumptive positive cases of novel coronavirus (COVID-19), including one person who died.

- Two of the confirmed cases are associated with LifeCare nursing facility in Kirkland, King County, Washington:

  - One is a health care worker from LifeCare. She is a woman in her 40s, is currently in satisfactory condition at Overlake Hospital, and she has no known travel outside the United States.

  - The second case, a woman in her 70's, is a resident at LifeCare and is in serious condition at EvergreenHealth Hospital.

- In addition, over 50 individuals associated with LifeCare are reportedly ill with respiratory symptoms or hospitalized with pneumonia or other respiratory conditions of unknown cause and are being tested for COVID-19. Additional positive cases are expected.
- The death occurred in a patient at EvergreenHealth Hospital but was not a resident of the long-term care facility.

Public Health – Seattle & King County is current working with LifeCare to provide care for ill patients while protecting uninfected patients. The CDC is sending a team of epidemiologists to King County to support our efforts to identify, isolate and test all of those who may be at risk because of these new cases.

Public Health is at the very beginning stages of this investigation and new details and information will emerge over the next days and weeks.

"This is a tragic loss of life and we share our heartfelt condolences with the family," said Dr. Jeff Duchin, Health Officer for Public Health – Seattle & King County. "While the vast majority of cases of COVID-19 are believed to be mild, the virus can be a very serious infection that can lead to death. Protecting the health of our community and supporting the care of health care workers is our top priority."

"I know this news is alarming, but we are doing everything possible to make sure the public is safe. Earlier today I declared an emergency proclamation directing state agencies to use all resources necessary to prepare for and respond to the outbreak. The best thing people can do to help is remain informed and take routine health precautions," Gov. Jay Inslee said. "Our public

health officials at the state, local and national levels are working diligently on this, coordinating efforts and keeping the public safe and informed."

"We are fortunate to have one of the best public health agencies in the nation, and we are pulling all available resources into the fight against COVID-19. King County is reviewing all government operations, and we are standing up an Emergency Operations Center to respond appropriately across all agencies and public services. I urge businesses and families to plan and take precautions, referring to Public Health for best practices," said King County Executive Dow Constantine.

For more information about COVID-19 in King County visit: www.kingcounty.gov/coronavirus

Providing effective and innovative health and disease prevention services for more than two million residents and visitors of King County, Public Health — Seattle & King County works for safer and healthier communities for everyone, every day. More at www.kingcounty.gov/health

Keep up with the latest Public Health news in King County by subscribing to the department's blog, Public Health Insider.

Facebook | Twitter | Instagram | Newsletter

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Public Health

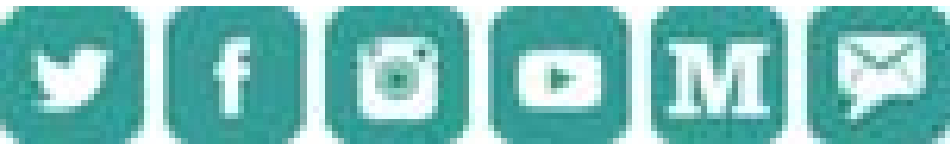
Seattle & King County

Washington State Department of
Health

From: DOH-LOFR (DOH)
Subject: Day 38-IAP and Situation Report COVID-19 (2/27/20)
Date: Thursday, February 27, 2020 8:00:37 AM
Attachments: image001.png
IAP_38.pdf
SitRep_37_COVID-19_02262020.pdf

Good Morning- Attached is COVID-19 IAP and most current situation report for Day 38.

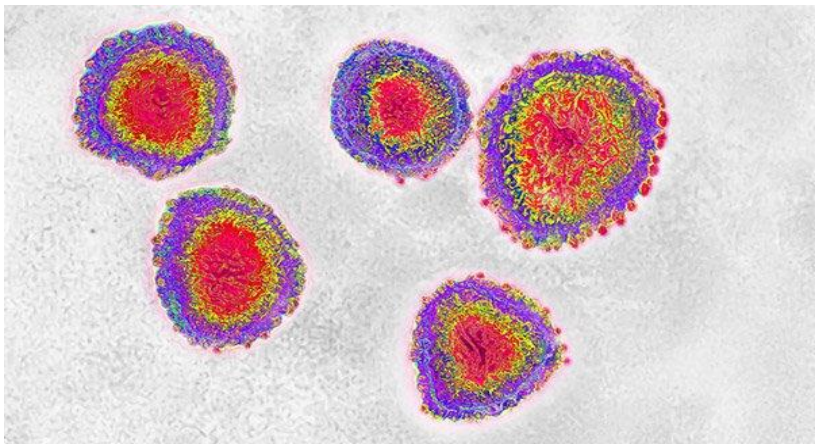
Troy Parks
Liaison Officer – Incident Management Team (IMT)
Washington State Department of Health (WSDOH)
https://www.doh.wa.gov/Emergencies/Coronavirus
Viruses don't discriminate and neither will we.



Incident Management Team (IMT)

20-0265 2020 Novel CoV

Mission #: 20-0265



Incident Action Plan (IAP) # 38

Operational Period

From: 0800 2/27/20 To: 0800 2/28/20

MEDIA PHONE LINE: 253-512-7100

Note: This page is intentionally blank.

ICS Form 202

Incident Objectives

1. Incident Name:	20-0265 2020 Novel CoV	2. Operational Period:	Date From:	2/27/20	Date To:	2/28/20
			Time From:	0800	Time To:	0800

3. Objective(s) in priority order:

1. Provide for the health and wellness of all incident responders including safe work and living environments.
2. Contain and monitor the spread of COVID-19 through effective application of established public health measures including surveillance, testing, monitoring, case and contact investigation, quarantine, and isolation.
3. Provide comprehensive wraparound services for people in isolation and/or quarantine at the state level to include: providing safe, secure, and comfortable housing, medical and non-medical transportation, feeding, and other needed services for people at risk for developing COVID-19.
4. Provide timely, complete, and accurate information to the people of Washington regarding the status of the COVID-19 situation in Washington State and the response actions being taken to address this situation.
5. Take specific actions in all areas of this response to promote health equity, including efforts to actively combat stigma and discrimination.
6. Maintain coordination and common operating picture among all responders, involved offices, DOH divisions, affected LHJs, healthcare coalitions, partner associations, and others. Information sharing should include epidemiologic, healthcare stress indicators, and supply chain information.
7. Mitigate the risk of disease spread through comprehensive strategies informed by CDC community mitigation guidance and epidemiologic data.
8. Coordinate with the State Military Department Emergency Management Division and other agencies to protect the people of Washington from COVID-19 through the use of appropriate legal authorities and resources.
9. Coordinate with the statewide healthcare system to maximize readiness, reduce the demand for services, and increase the capacity of the healthcare system to address surge if needed for COVID-19.
10. Provide guidance to the healthcare system to prepare for infection control, PPE conservation strategies, and other matters affecting the provision of healthcare services.
11. Convene policy groups as needed to make recommendations to the Governor and the Secretary of Health regarding community mitigation measures, clinical care, and the operation of the healthcare system.
12. Incident Management Team members will coordinate to successfully transition to an Area Command structure while maintaining safe and effective operations within the Shoreline IMT.

4. Operational Period Command Emphasis:

The Washington State Department of Health must fulfill our responsibility to prevent disease spread, promote health, and protect the public's health. Additionally, our state's healthcare system operates at full capacity on a daily basis. Since our state is still experiencing health care surge with respect to the current influenza season this system is under considerable stress. COVID-19 presents an additional burden as well as an additional demand on the supply chain. Overall, the burden on the health care system impedes their ability to care for critically injured and ill patients on a daily basis. This response must support their ability to care for people in our communities when they need that care, which involves both mitigating spread of COVID-19 and building healthcare capacity.

If you encounter media on the grounds, please remember to:

• Be polite and professional. Don't engage unnecessarily.
• You are not authorized to speak to the media regarding this matter, unless approved by the Incident Commander. Please indicate that you are not authorized to speak regarding this matter and that you will notify the PIO.
• Contact the Public Information Officer at 253-512-7100 immediately to inform them that media is onsite. A Public Information Officer will arrive to escort media and respond to their needs appropriately.

5. Site Safety Plan Required? ☑ Yes ☐ No

Approved Site Safety Plan(s) Located At: See ICS 208

6. Incident Action Plan (the items checked below are included in this Incident Action Plan)

☑ ICS 202	☑ ICS 206	☑ ICS 230	Other Attachments
☑ ICS 203	☐ ICS 207		☑ IMT Organization Chart
☑ ICS 204	☑ ICS 208		☐
☑ ICS 205	☑ Map/Chart IMT Transition Structure		☐
☑ ICS 205a	☑ Weather Forecast		☐

7. Prepared By:	Denise O'Hara, PSC	Signature:	/s/ Denise O'Hara
8. Approved by Incident Commander:	Nate Weed	Signature:	/s/ Nate Weed
Date:	2/26/2020	Time:	1700

ICS Form 203

Organizational Assignment List

1. Incident Name:	20-0265 2020 Novel CoV	2. Operational Period:	Date From 2/27/20 Time From 0800	Date To: 2/28/20 Time To: 0800

3. Incident Commander and Command Staff:	
IC:	Nate Weed/Lori Lawson
Dep IC:	Jennifer McNamara-T
Safety Officer:	Laura Hayes
Asst. Safety Officer:	Doug Vincent
Public Info Officer:	253-512-7100
APIO:	Jamie Nixon/Douglas Wagoner
APIO2:	Jessie Payne
APIO-Social Media	Jessie Payne
Web:	Tim Lewis-R
PIO/LNO Support:	Vadim Kogan
LOFR:	Troy Parks
Deputy LOFR:	Diana Trotter-T

4. Agency Representatives:	
Agency/Org	**Name**
DOH/AA:	Lacy Fehrenbach
PHSKC:	Julie West
SHD:	Snohomish Liaison-R
Tribal Liaison:	Lou Schmitz-R
ESF 8:	Jeramy "Jay" Stephen
SEOC:	Adam Mulvey
NWHRN:	

5. Planning Section:	
Chief:	Kali Turner
Deputy:	Kathy Chapman
Resource Unit:	Brittany Knight/Jill Edgin
Status/Chckin Rec:	Meisha Keech/Michaela Phillips, Janelle Smith
Agency Deputy RESL-T:	Ali Kelley
Display Processor:	Julie Pawlowicz-T
Literature Reviewer:	Maayan Simcke-R/James Oloya-R
Situation Unit:	Kali Turner
Demobilization	Marlei Kastner
Documentation:	Bruce Wirth

6. Logistics Section:	
Chief:	Carrie Corder (AC-T)
Deputy:	Mike Bates
COML/Admin Support:	Coe Hicks
Supply Unit:	Danton Thompson

7. Operations Section:	
Chief:	Mathew Zimmerman
Deputy:	Matt Simons
Task Force:	**Isolation & Quarantine**
Task Force Leader:	Landon Adams
Team:	Quarantine
Team:	Isolation
Task Force:	**Healthcare System Readiness**
Task Force Leader:	Dr. Kathy Lofy
Team:	Healthcare & Public Health
Team:	Medical Materiel
Task Force:	**Epidemiological Operations**
Task Force Leader:	Jasmine Matheson
Team:	Investigation
Team:	Surveillance
Team:	Data Management
Task Force:	**Community Engagement**
Task Force Leader:	Paj Nandi
Task Force:	**NPI**
Task Force Leader:	Kevin Wickersham
Group:	**Public Health Lab**
Group Sup:	Denny Russell

8. Finance/Administration Section:	
Chief:	Dan Weeks
Deputy Chief:	Jay Summers
Time Unit Lead:	Tiffany Arrienda-T
HR Unit:	Stephanie Price

9. Facilites:	
IT Support:	Bill Frauen

10. Prepared by:	Denise O'Hara, PSC	Signature:	/s/ Denise O'Hara	
		Date:	2/26/2020	Time: 1700

ICS Form 203 **Location Key: R=Remote, T=Tumwater**

ICS Form 208

Safety Message/Plan

1. Incident Name:	20-0265 2020 Novel CoV	2. Operational Period:	Date From:	2/27/20	Date To:	2/28/20
			Time From:	0800	Time To:	0800

3. Safety Message, Expanded Safety Message, Safety Plan, Site Safety Plan:

Daily Safety Message:

• Help stop the spread of germs by frequently washing hands, using hand sanitizer and regularly wiping down work areas with the provided disinfected wipes.
• If you are transitioning to Tumwater from Shoreline, please ensure you are well rested, drive safely, and check-in with your IMT supervisor when you arrive.
• Slips, trips and fall hazards need to be immediately reported to the Safety Officer.

Weather:

• Temp: High of 50 low of 39
• 10-20% chance of precipitation
• Dress in layers and wear appropriate footwear

Wellbeing:

• Take advantage of the Chair massage sign up for Friday 2/28/20. The signup is located by the Safety Officer / HR area in the front of the room on the wall.
• Drink plenty of water, eat well and ensure your work to rest ratio is being met.
• Reduces stress and its consequences – Mindfulness can lead to less intense stress responses. This has many health benefits, such as lowering your blood pressure and strengthening your immune system.Practice mindful movement while walking. Pay close attention to your breathing, your body movements, and your surroundings.

4. Site Safety Plan Required? ☑ Yes ☐ No

Approved Site Safety Plan(s) Located At: PHL Operations

5. Prepared By:	Denise O'Hara, PSC	Signature:	/s/ Denise O'Hara		
		Date:	2/26/2020	Time:	1700

ICS Form 204(a)

Special Instructions

1. Incident Name: 20-0265 2020 Novel CoV	2. Operational Period:	Date From: 2/27/20	Date To: 2/28/20
		Time From: 0800	Time To: 0800

3. Common Safety Message, these items apply to all Operation Braches and Groups:

Work Assignment Safety Message:

1. Safety is paramount. Follow all safety procedures and rules. See ICS form 208, Safety Message/Plan.
2. Maintain a healthy work-rest ratio. Be well rested prior to demobilization and driving home.
3. Keep communication open and continous in order to share information with the OSC and other Group Supervisors.
4. Send important information to the OSC so it can be captured and included in the situational updates.
5. Communicate all resource needs to the Group Supervisor.
6. DOH Field staff who travel to the field to conduct specimen collection (not including transport of Category B Shipping Box specimens), will be treated as a contact and will follow the same monitoring and reporting process established for Healthcare Workers. These individuals will monitor for the entire 14 day monitoring period starting at last known contact with the PUI.
7. If you are working a location that is different from usual know your evacuation routes and rally points.

If you encounter media, please remember:

• Be polite and professional. Do not engage unnecessarily.
• You are not authorized to speak to the media regarding this incident, unless approved by the Incident Commander. Please indicate that you are not authorized to speak regarding this matter and that you will notify the PIO.
• Contact the Public Information Officer at 253-512-7100 immediately to inform them that media is onsite. A PIO will arrive to escort media and respond to their needs appropriately.

If you encounter citizen groups or protestors, please remember:

• You do not have to engage with anyone, even if asked questions. You do not have to give them your name.
• You may ignore them and go about your business.
• You may close your blinds.
• You may remove or turn your badge around as you leave the building.
• Be careful about tail-gating itno the building. If you do not know someone, ask to see their badge before allowing entry to secure locations.
• It is not your role to ask them to leave or give them direction. We have notified leaders, Shoreline PD and WSP.

4. Site Safety Plan Required? ☑ Yes ☐ No

Approved Site Safety Plan(s) Located At: PHL Operations

5. Prepared By: Denise O'Hara, PSC	Signature: /s/ Denise O'Hara	
	Date: 2/26/2020	Time: 1700

ICS Form 204a

ICS Form 204

Assignment List

1. Incident Name:	20-0265 2020 Novel CoV	2. Operational Period	Date From: 2/27/20	Date To: 2/28/20
			Time From 0800	Time To: 0800

3. Assignment Identifier:		4. Operations Personnel:		Contact Info:
Task Force:	Isolation & Quarantine	Section Chief:	Mathew Zimmerman	360-870-1434
Team:	Quarantine	Task Force Leader:	Landon Adams	509-540-9455
Safety Primary	Laura Hayes	Team Supervisor:	Tiffany Escott	206-773-4362
Safety Secondary	Doug Vincent	QTF Leader:	Matt Hadorn	206-777-5884

5. Resources Assigned:

Resource Identifier	Leader	# of Persons	Contact Numbers	Notes and Reporting Instructions
Team Support	TBD	5	QTF 206-794-8475	Paul McDermott, Tiffany Escott, Cori McGrday NIGHT SHIFT: Thomas Kantak, Ronald Meyer
Transport LEO	Sean McGrady	2	425-210-4625	Transport Officer: Scott Symon
Site Security	Lt. Zack Elmore	3	360-507-6651	WSP Trooper (22:00 – 06:00) WSP Trooper (06:00 – 14:00)
Facilities	Mike Carter	1	360-239-0254	Report to Team Supervisor

6. Work Assignments:

Purpose: Maintain in a state of readiness in isolation and quarantine capability at the state level to include: providing safe and comfortable housing, medical/non-medical transportation, and wrap around services for persons exposed without adequate resources and support.

Strategies: Ensure public safety by preventing potential community exposure from individuals that have been exposed to COVID-19. This is accomplished by providing secured, quarantined living quarters and support from medical and non-medical staff.

Tactics/Work Assignments:

1. Q&I Branch/Group Leadership will develop transition strategies, documents, and checklists to ensure continuity of operations for changeover in staff, including supervisors and branch directors. Deadline 2/27/20
2. Q&I Group will develop and submit for approval discharge procedures for QT individual – Deadline 2/27/20
3. Quarantine and Isolation Branch Director and Group Supervisor(s) will assess logistics and resource needs for demobilization, transport, and activation of facilities for quarantine and isolation sites to Maple Lane site – Site readiness and activation deadline 3/4/20
4. QTF Team continue to maintain operations of the active quarantine site – Ongoing
5. Group Leadership will ensure family scenario plan is developed or updated, actionable – Deadline 2/29/20

Note: *Respirator Approved (N95)

7. Special Instructions:

No personnel allowed entry without IC approval except the Isolation and Quarantine Group, IC, and SOFR.

Interdependencies:

1. QTF needs RESL to identify on-call public health nurses for staffing the isolation site at Maple Lane.
2. QTF needs RESL and LOGS to arrange for transport personnel and vehicles, etc., to move Shoreline Quarantine Site facilities and supplies to the Maple Lane Quarantine and Isolation Site.
3. QTF needs LOGS to ensure that wrap around service contracts are in place for the Maple Lane isolation site.

Safety Message:

Safety will continue to work on a safety protocol plan for Maple Lane. Currently, this area is a soft setup and NOT occupied.

- Use appropriate PPE.
- Due to exposure to weather, dress in layers and have foul weather gear available.
- Smoking in designated areas ONLY (outside of main perimeter).
- Look were you are walking due to uneven surfaces, use lighted areas when possible in the evening.

8. Prepared by:	Denise O'Hara, PSC	Signature: Denise O'Hara		
ICS Form 204		Date: 2/26/2020	Time:	1700

ICS Form 204

Assignment List

1. Incident Name:	20-0265 2020 Novel CoV	**2. Operational Period:**	Date From: 2/27/20	Date To:	2/28/20
			Time From: 0800	Time To:	0800

3. Assignment Identifier:		**4. Operations Personnel:**		**Contact Info:**
Task Force:	Isolation & Quarantine	Section Chief:	Mathew Zimmerman	360-870-1434
Team:	Isolation	Task Force Leader:	Landon Adams	509-540-9455
Safety Primary	Laura Hayes	Team Supervisor:	Tiffany Escott (On Call)	206-773-4362
Safety Alternate	Doug Vincent			

5. Resources Assigned:

Resource Identifier	Leader	# of Persons	Contact Numbers	Notes and Reporting Instructions
Team Support	TBD		206-773-3526	Standby
Transport LEO	TBD			Standby
Site Security	TBD			Standby
PH Nurse	Michelle Holshue	1		Standby

6. Work Assignments:

Purpose: Maintain in a state of readiness in isolation and quarantine capability at the state level to include: providing safe and comfortable housing, medical/non-medical transportation, and wrap around services for persons exposed without adequate resources and support.

Strategies: Ensure public safety by preventing potential community exposure from individuals that have been exposed to COVID-19. This is accomplished by providing secured, quarantined living quarters and support from medical and non-medical staff.

Tactics/Work Assignments:

1. Q&I Branch/Group Leadership will develop transition strategies, documents, and checklists to ensure continuity of operations for changeover in staff, including supervisors and branch directors. Deadline 2/27/20
2. Q&I Group will develop and submit for approval discharge procedures for QT individual – Deadline 2/27/20
3. Quarantine and Isolation Branch Director and Group Supervisor(s) will assess logistics and resource needs for demobilization, transport, and activation of facilities for quarantine and isolation sites to Maple Lane site – Site readiness and activation deadline 3/4/20
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Note: *Respirator Approved (N95)

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- Smoking in designated areas ONLY (outside of main perimeter).
- Look were you are walking due to uneven surfaces, use lighted areas when possible in the evening.

7. Prepared by:	Denise O'Hara, PSC	Signature:	/s/ Denise O'Hara
ICS Form 204		Date: 2/26/2020	Time: 1700

ICS Form 204

Assignment List

1. Incident Name:	20-0265 2020 Novel CoV	2. Operational Period:	Date From: 2/27/20 Time From: 0800	Date To: 2/28/20 Time To: 0800
3. Assignment Identifier:		**4. Operations Personnel:**		**Contact Info:**
Task Force:	Healthcare System Readiness	Section Chief:	Matthew Zimmerman	360-870-1434
		Task Force Leader:	Dr. Kathy Lofy	360-465-8042
		Task Force Dep Leader:	Erika Henry	360-701-7532

5. Resources Assigned:

Resource Identifier	Leader	# of Persons	Notes and Reporting Instructions
Healthcare & Public Health Team	Anne Newcombe	9	Healthcare Planner: Anne Newcombe (DOH Shore) Healthcare Planner: Patty Montgomery (DOH Shore) EMS Planner: Catie Holstein (DOH Tum) HAI SME: Lisa Hannah (DOH Remote) NWHRN Planner: Herakles Li REDi rep: Carolyn Cartwright NWHRN rep: Onora Lien / Marissa Cummings PH Planner: Ron Weaver (DOH Tum) PH Planner: Michele Roberts (DOH Tum)
Medical Materiel Team	Dave Owens	1	Medical Materiel Planner: Dave Owens (DOH Tum), doh-rss

6. Work Assignments:

Purpose: The intent of this Task Force is to coordinate many of the community mitigation operations related to the COVID-19 response. This TF manages operations related to healthcare system, public health, and medical materiel planning.

Strategies: Provide guidance and direction to the healthcare and public health systems to support their local/system preparedness activities. This includes LHJs, hospitals, clinics, long-term care, etc. Monitor the supply chain for healthcare supplies necessary for the delivery of healthcare.

Work Assignments:

Healthcare & Public Health Team:

1. Focus on work across 4 key areas:
   Assessment & monitoring, Medical Surge, Policy/DMAC, Fatality Management
2. The following work products will be completed during the week of Feb. 24:

- Document for surge 1-pager
- Outpatient clinical guidance
- PPE appropriate use document
- assessment metrics for healthcare systems
- fatality management 1-pager
- assessment of ACF/S preparation at the local level and strategies to mitigate gaps

Medical Materiel Team:

1. Collect data from state agencies on their available buildings and lands and identify appropriate locations for long-term isolation and quarantine operations. Received 2.26.20.
2. Continue to monitor PPE needs within the healthcare system, including supply chain status.

Continued On Next Page

7. Special Instructions:

Interdependencies:

CMTF needs RESL to identify staffing, particulary around public health contributions to this work.
CMTF needs CETF to coordinate around messaging and strategies.
CMTF needs EPI to collaborate on guidance documents.

Safety Message:

Be aware of office related hazards and stress. Take frequent breaks, stretch, walk and have situational awareness of your environment.

8. Prepared by:	Denise O'Hara, PSC	Signature:	/s/ Denise O'Hara
ICS Form 204		Date: 2/26/2020	Time: 1700

ICS Form 204

Assignment List

1. Incident Name:	20-0265 2020 Novel CoV	2. Operational Perio	Date From: 2/27/20 Time From: 0800	Date To: 2/28/20 Time To: 0800
3. Assignment Identifier:		4. Operations Personnel:		Contact Info:
Task Force:	Epidemiological Operations	Section Chief:	Matthew Zimmerman	360-870-1434
Staging Area:	Shoreline	Task Force Leader:	Jasmine Matheson	360-890-1562

5. Resources Assigned:

Resource Identifier	Leader	# persons	Contact Numbers	Notes and Reporting Instructions
Investigation Team	Jasmine Matheson	3	360-890-1562	Position: Clinical Epi: Chas DeBolt Duty Epi: Nicole Schwalbe Epi Admin Support: Meelay Tellier **Phone # for all: 206-418-5500**
Surveillance Team	Elyse Bevers	3	206-418-5500	Position: Report Epi: Tia Dostal 206-418-5500 Epi Surveillance: Natasha Close 206-430-0617 (Remote)
Data Management Team	Rad Cunningham	1	206-236-3359	Position: Contact & Traveler Epi: Christopher Ahmed WDRS Development: Jennifer Lam WDRS Support BA: Remote-Janet Dunn/Ruth Dodson/Keenan Wagner
Technical Specialist	Scott Lindquist	1		
Infection Control Epidemiologist	Sara Podczervinski	1		

6. Work Assignments:

Purpose: The intent of this Task Force is to coordinate Epidemioligical Operations related to the COVID-19 response. this group manages operations related to disease investigation, surveillance, and data management.

Strategies/Function/Work Assignments:

Investigation Team:

1. Provide epidemiological investigation support to LHJs, including evaluation of PUI, case and contact investigation.
2. Provide epidemiological information on COVID-19 in Washington State.
3. Coordinate with LHJs, state, federal and other partners regarding investigation and response activities.
4. Provide phone triage, call log tracking, and general administrative support.

Surveillance Team:

1. Develop and maintain enhanced surveillance report, integrating public health data from multiple sources.
2. Develop data dashboard to share enhanced surveillance report data with LHJs and partners and inform public health response activities.

Data Management Team:

1. Sustain and enhance surveillance tools to manage case, contact and traveler data through Washington Disease Reporting System (WDRS)
2. Work with LHJs to support data needs for contact and traveler tracking and associated outcomes.

Continued on next page

7. Special Instructions:
Interdependencies: Epi Task Force is interdependent with all other sections of Operations, including CETF, isolation and quarantine.

Safety Message:
Be aware of office realted hazards and stress. Take frequent breaks, stretch, walk and have situational awareness of your environment.

8. Prepared by:	Denise O'Hara, PSC	Signature:	/s/ Denise O'Hara
ICS Form 204		Date: 2/26/2020	Time: 1700

ICS Form 204
Assignment List

1. Incident Name:	20-0265 2020 Novel CoV	2. Operational Period:	Date From: 2/27/20 Time From 0800	Date To: 2/28/20 Time To: 0800
3. Assignment Identifier:		4. Operations Personnel:		Contact Info:
Task Force:	Community Engagement	Section Chief:	Matthew Zimmerman	360-870-1434
Staging Area:		Task Force Leader:	Paj Nandi	360-480-5844

5. Resources Assigned:

Resource Identifier	Leader	# of Persons	Contact Numbers	Notes and Reporting Instructions
Equity and Cultural Sensitivity Review	Katie Meehan	3		Thomas Madrigal Chritymarie Jackson
Stigma Reduction	Laura Blaske	4		Lydia Guy-Ortiz Jessie Payne (or designee) Kristen Haley
Public Health Guidance	Joni Hensley	3		Tara Bostock Barry Iverson (note: need 2-3 additional health educators)
Health Promotion	Danielle Koeing	3		Morgan Jade Leigh Wallis (note: need 2-3 additional health educators)
Community Outreach	Katie Meehan	1		Megan Mikkelsen
Translation Review & Process	Sharon Moysiuk	1		Cory Portner

6. Work Assignments:

Purpose:
CETF conducts strategic proactive messaging to the public at large and major sectors of the public such as schools, elected officials, employers, etc. for the purpose of mitigating CoVID-19 spread in WA State, reducing stigma and promoting health equity.

Strategies/Function:
Work Assignments/Tactics:
1. Review all IMT communications, guidance documents, and materials *(coordinate with PIO, LOFR and other IMT groups as needed).*
2. Provide consultation and technical assistance to IMT.
3. Proactively create stigma reduction messaging, talking points, and strategies.
4. Develop stigma reduction social marketing campaign.
5. Develop plan for social media/digital ad buy.
6. Outline role and historical process for public health guidance role, including sources reviewed.
7. Conduct review of current guidance and organize for future use. Identify gaps or contradictions
8. Pull and compare flu messaging and coordinate closely with PIO desk as needed.
9. Identify opportunities for updates to current/previously used messages and future messaging needs and coordinate closely with PIO desk as needed.
10. Review IMT literature review on COVID-19.
11. Review community outreach plan to meet and discuss audiences.
12. Conduct research into priority communities.

Continued on following page

Work Assignments/Tactics continued...

13. Draft audience specific engagement strategy/messages.
14. Develop comprehensive and audience-specific community outreach & communication plans.
15. Consult with other DOH staff with lived experience/community experience and agency subject matter experts (like schools, early learning centers, etc.) as needed to strengthen community outreach plan.
16. Oversee process for translating all media advisories and news releases (Sharon Moysiuk).
17. Oversee process for translating all COVID-19 documents and materials (Cory Portner).
18. Oversee compliance with DOH Pre-Translation Checklist on all materials and documents (Tomas Madrigal).
19. Translate all urgent communication into Spanish (Tomas Madrigal).

7. Special Instructions:

Safety Message:

Be aware of office related hazards and stress. Take frequent breaks, stretch, walk and have situational awareness of your environment.

8. Prepared by:	Denise O'Hara, PSC	Signature:	/s/ Denise O'Hara
ICS Form 204		Date: 2/26/2020	Time: 1700

ICS Form 204

Assignment List

1. Incident Name:	20-0265 2020 Novel CoV	2. Operational Period	Date From: 2/27/20	Date To: 2/28/20
			Time From 0800	Time To: 0800

3. Assignment Identifier:		4. Operations Personnel:		Contact Info:
Task Force:	NPI	Section Chief:	Mathew Zimmerman	360-870-1434
Team:		Task Force Leader:	Kevin Wickersham	206-450-9827
Safety Primary		Team Supervisor:		
Safety Secondary				

5. Resources Assigned:

Resource Identifier	Leader	# of Persons	Contact Numbers	Notes and Reporting Instructions
Task Force Leader	Kevin Wickersham	1		
Epi Support	Cynthia Harry	2		Cody Carmichael
NPI/Mitigation Specialist	Rebecca Baron	1		

6. Work Assignments:

Purpose:

Strategies:

Tactics/Work Assignments:

1. Present to WA EMD Leadership regarding NPI Decsion Packages and certain strategies that may be used to implement these interventions.
2. Implement NPI strategies across WA.
3. Identify and obtain resources inorder to operationalize the group and it's functions.

7. Special Instructions:

Ensure awareness of your surroundings and check in as you drive to and from your established duty stations.

8. Prepared by:	Denise O'Hara, PSC	Signature: Denise O'Hara		
ICS Form 204		Date: 2/26/2020	Time:	1700

ICS Form 204

Assignment List

1. Incident Name:	20-0265 2020 Novel CoV	2. Operational Period:	Date From: 2/27/20	Date To: 2/28/20
			Time From 0800	Time To: 0800

3. Assignment Identifier:		4. Operations Personnel:		Contact Info:
Branch:		Section Chief:	Mathew Zimmerman	360-870-1434
Group:	Public Health Lab	Branch Director:		
Unit:		Group Supervisor:	Denny Russell	206-418-5572
Staging Area:				

5. Resources Assigned:

Resource Identifier	Leader	# of Persons	Contact Numbers	Notes and Reporting Instructions
PHL Lead	Denny Russell	1	206-418-5572	
Emergency Response Lead	Jessica Gant	6	206-418-5575	Emily Nebergail Marisa Egorov Wesley LaRowe Hannah Groeneveld JohnAric Peterson Ryan Medeck

6. Work Assignments:

The Public Health lab group is responsible for ensuring that clinical specimens related to the COVID-19 event are properly packaged and submitted to the CDC for testing, and that the Washginton State Public Health Lab (WAPHL) develops capability for conducting laboratory analysis as appropriate.

The Public Health Lab Group will:

1. Support Epidemilogy investigations by ensuring timely specimen shipping to CDC (standby).
2. Central Accessioning support staff will work to assist with data entry and shipping (standby).
3. Finalize guidance for the workflow of information between laboratory and epidemiology information sharing (SOPs).

7. Special Instructions:

Safety Message:

Be vigilant of your surroundings. Ensure proper PPE and safety procedures are being used and followed.

8. Prepared by:	Denise O'Hara, PSC	Signature:	/s/ Denise O'Hara	
		Date:	2/26/2020	Time: 1700

ICS Form 204

ICS Form 205

Incident Radio

Communications Plan

1. Incident Name:	20-0265 2020 Novel CoV	2. Operational Period:	Date From: 2/27/20	Date To: 2/28/20
			Time From: 0800	Time To: 0800

3. Basic Radio Channel Utilization

Radio System	Channel Number	Function	Frequency	Assignment	Remarks
iCom	2		450-512MHz	Quarantine	
		Command	400 mHz	Quarantine	

5. Prepared by (Communications Unit):	Michael Bates, LSC
	Date: 2/26/2020 Time: 1700
9. Approved by: Denise O'Hara, PSC	Signature: /s/Denise O'Hara
ICS Form 205	Date: 2/26/2020 Time: 1700

ICS Form 205A

Communications List

1. Incident Name:	20-0265 2020 Novel CoV	2. Operational Period:	2/26/2020
		to:	2/27/2020

3. Basic Communications Information:

Name (last, first)	Role	Contact Info	Email
Adams, Landon	Isolation & Quarantine	509-540-9455	doh-qtf@doh.wa.gov
Archuleta, Chris	Deputy LSC	360-481-9506	doh-lsc@doh.wa.gov
Arrienda, Tiffany	Time Unit Lead		doh-fsc@doh.wa.gov
Asato, Kennly	Agency Deputy RESL-T		
Bates, Mike	Deputy LSC	509-540-0748	doh-lsc@doh.wa.gov
Chapman, Kathy	Deputy PSC	564-999-1174	doh-psc@doh.wa.gov
Corder, Carrie	LSC	360-324-9619	doh-lsc@doh.wa.gov
Davis, Jerrod	AA	360-556-2132	Jerrod.davis@doh.wa.gov
Dooley, Danielle	Deputy LOFR	564-999-1183	doh-lofr@doh.wa.gov
Fehrenbach, Lacy	DOH/AA		
Frauen, Bill	IT Support	360-236-4460	bill.frauen@doh.wa.gov
Hayes, Laura	Safety Officer	425-495-2632	doh.sofr@doh.wa.gov
Hicks, Coe	COML/Admin Support	360-338-5132	doh-lsc@doh.wa.gov
Kastner, Marlei	Demobilization	564-999-0568	doh-dmob@doh.wa.gov
Keech, Meisha	Status/Checkin Rec	360-791-9044	doh-resl@doh.wa.gov
Kelley, Ali	Agency Deputy RESL-T	360-515-8819	alexandra.kelley@doh.wa.gov
Ketchum, Jake	PHSKC		
Knight, Brittany/Edgin, Jill	Resource Unit	360-890-1769	doh-resl@doh.wa.gov
Kogan, Vadim	PIO/LNO Support	360-789-5875	doh-pio@doh.wa.gov
Lewis, Tim	Web	(360) 790-2483	doh-pio@doh.wa.gov
LO, SHD	AREP SHD		Lo@snohd.org
Lofy, Kathy	Com Mit Branch Dir		kathy.lofy@doh.wa.gov
Matheson, Jasmine	EPI Operations	360-890-1562	jasmine.matheson@doh.wa.gov
McNamara, Jennifer	Deputy IC	360-790-0580	doh-ic2@doh.wa.gov
Mulvey, Adam	SEOC	253-208-6507	Adam.mulvey@mil.wa.gov
Nandi, Paj	Comm Eng Tsk Force	360-480-5844	paj.nandi@doh.wa.gov
Nixon, Jamie/Wagoner, Douglas	APIO		doh-pio@doh.wa.gov
O'Hara, Denise	PSC	360-640-2599	doh-psc@doh.wa.gov
Parks, Troy	LOFR		doh-lofr@doh.wa.gov
Pawlowicz, Julie	Display Processor		
Payne, Jessie	APIO, APIO Social Media		doh-pio@doh.wa.gov
Phillips, Michaela	Status/Checkin Rec		doh-resl@doh.wa.gov
Pleines, Tonya	SOFR	360-640-4185	doh-sofr@doh.wa.gov
Price, Stephanie	HR Unit		doh-hr@doh.wa.gov
Russell, Denny	PHL Grp Sup	206-418-5572	doh-phl@doh.wa.gov
Schmitz, Lou	Tribal Liaison		lou.schmitz@doh.wa.gov
Simcke, Maayan/Oloya, James	Literature Reviewer		
Simons, Matt	Deputy OSC	360-489-5943	matt.simons@doh.wa.gov
Stephen, Jeramy "Jay"	ESF 8	360-789-4618	jeramy.stephen@doh.wa.gov
Stromme, Lisa	PIO	360-628-7883	doh-pio@doh.wa.gov
Summers, Jay	Deputy FSC		doh-fsc@doh.wa.gov
Thompson, Danton	Supply Unit	907-306-1701	doh-lsc@doh.wa.gov
Turner, Kali	SITL	360-791-5262	doh-sitl@doh.wa.gov
Villa, Gil	Status/Checkin Rec	818-730-1121	doh-resl@doh.wa.gov
Vincent, Doug	Safety Officer		doh-sofr@doh.wa.gov
Weed, Nate/Lawson, Lori	IC	360-480-0308	doh-ic@doh.wa.gov
Weeks, Dan	FSC	360-489-5608	doh-fsc@doh.wa.gov
West, Julie	PHSKC		
Wickersham, Kevin	Advanced Planning	206-450-9827	kevin.wickersham@doh.wa.gov
Wirth, Bruce	Documentation		doh-docl@doh.wa.gov
Zimmerman, Matthew	OSC	360-870-1434	doh-osc@doh.wa.gov

4. Prepared by:	Chris Archuleta, DLSC	Date:	2/26/2020
		Time:	1700
5. Approved by:	Denise O'Hara, PSC	Signature:	/s/Denise O'Hara
		Date: 2/26/2020	Time: 1700

For complete IMT contact list follow file path below:
O:\Emergency_Incidents\2020 Novel CoV\02-Planning\02-Planning_Section_Chief\02-IAPs\Master IMT Contact List

ICS Form 206

Medical Plan/Shoreline

1. Incident Name:	20-0265 2020 Novel CoV	2. Operational Period:	Date From: 2/27/20 Date To: 2/28/20 Time From: 0800 Time To: 0800

3. Medical Aid Stations

Name	Location	Contact Number(s)/Frequency	Paramedics on Site?	
			Yes	No
AEDs and First Aid Kts	Multiple Stations in the main hallways and work areas.	Front Desk (206) 418-5400		X

4. Offsite Medical Facilities

Name	Location	Contact Number(s)/Frequency	Paramedics on Site?	
			Yes	No
UW Neighborhood Shoreline Clinic	1355 N 205th St., Shoreline, WA 98133	(204) 542-5656		X
Concentra Urgent Care	836 NE Northgate Way, Seattle, WA 98125	(206) 784-0737		X
Kaiser Permanente Northgate Medical Cen.	9800 4th Ave. NE, Seattle, WA 98115	(206) 302-1200		X

5. Transportation (Indicate air or ground):

Ambulance Service	Locations	Contact Number(s)/Frequency	Level or Service	
			ALS	BLS
Shoreline Fire Dept. (Ground)	17525 Aurora Ave. N, Shoreline, WA	(206) 533-6500	Yes	Yes
America Medical Response (Ground)	13075 Gateway Dr., Ste 100, Seattle, WA	(206) 744-3074	No	Yes

6. Hospitals:

Hospital Name	Address, Latitude & Longitude if Helipad	Contact Number(s)/Frequency	Travel Time		Trauma Center	Burn Center	Helipad
			Air	Ground	Y/N	Y/N	Y/N
University of Washington	1550 N. 115th St., Seattle, WA 98133	(206) 364-0500	N/A	3.5 miles 15 mins.	N	N	Y
Harborview Medical Center	325 9th Ave., Seattle, WA 98104	(206)744-3074	1 hour	11 miles, 35 mins.	Y, Level 1	Y	Y

A. Report the emergency by calling 9-911.
B. Assist the injured person(s) and offer reassurance and comfort.
C. If you have training in first aid, CPR, and/or AED you may offer medical assistance within the scope of your training.
D. When the emergency involves blood or other bodily fluids, do not touch the fluids without proper PPE.
E. Do not move individuals with suspected spinal injuries.
F. Report the emergency to the EOC Supervisor, the IMT Safety Officer, and your supervisor.

8. Prepared by:	Chris Archuleta, DLSC	Signature:	/s/Chris Archuleta
9. Approved by:	Denise O'Hara, PSC	Signature:	/s/Denise O'Hara

ICS Form 206

Medical Plan/Maple Lane

1. Incident Name:	20-0265 2020 Novel CoV	2. Operational Period:	Date From:	2/27/20	Date To:	2/28/20
			Time From:	0800	Time To:	0800

3. Medical Aid Stations

Name	Location	Contact Number(s)/Frequency	Paramedics on Site?	
			Yes	No
AEDs and First Aid Kits	On site in the staff trailer and each traveler's trailer.			X

4. Offsite Medical Facilities

Name	Location	Contact Number(s)/Frequency	Paramedics on Site?	
			Yes	No
Valley View Health Center Centralia	2428 W. Reynolds Ave, Centralia, WA 98531	(360) 669-0335		X
Quick Clinic	2526 Colonial Dr. Centralia, WA 98531	(360) 736-0256		X

5. Transportation (Indicate air or ground):

Ambulance Service	Locations	Contact Number(s)/Frequency	Level or Service	
			ALS	BLS
Olympic Ambulance	4511 Lacey Blvd. SE, Lacey, WA	(360) 491-3200	Yes	
West Region EMS	5199 Black Lake Blvd., Olympia, WA	(360) 705-9019		Yes

6. Hospitals:

Hospital Name	Address, Latitude & Longitude if Helipad	Contact Number(s)/Frequency	Travel Time		Trauma Center	Burn Center	Helipad
			Air	Ground	Y/N	Y/N	Y/N
Providence St. Peters	413 Lilly Rd NE, Oiympia, WA 98502	(360) 491-4980	N/A	22.2 miles, 27 mins.	N	N	Y
Harborview Medical Center	325 9th Ave., Seattle, WA 98104	(206)744-3074	2 hours	79.4 miles, 90 mins.	Y, Level 1	Y	Y

7. Special Medical Emergency Procedurs:

A. Report the emergency by calling 9-911.

B. Assist the injured person(s) and offer reassurance and comfort.

C. If you have training in first aid, CPR, and/or AED you may offer medical assistance within the scope of your training.

D. When the emergency involves blood or other bodily fluids, do not touch the fluids without proper PPE.

E. Do not move individuals with suspected spinal injuries.

F. Report the emergency to the EOC Supervisor, the IMT Safety Officer, and your supervisor.

8. Prepared by:	Chris Archuleta, DLSC	Signature:	/s/Chris Archuleta
9. Approved by:	Denise O'Hara, PSC	Signature:	/s/Denise O'Hara

ICS 230
Recurring Daily Meeting Schedule

Incident Name: 20-0265 2020 Novel CoV	**2. Date:** 2/27/2020	**Recurring Daily Meeting Schedule ICS 230**

Meeting schedule

Time	Meeting name	Purpose	Attendees	Location
8:15 am (0815)	Daily Operations briefing *agenda 4-36 (red book)*	Orient to important aspects of daily operations and incident priorities.	C&G staff, RESL, SITL, DIVS, AA	Room #S4 and GTM
10:00 am (1000)	Stakeholder/Partner Engagement checkin	Information sharing & planning.	LOFR, CETF, PIO	PIO room or dial in - see meeting invite
11:30 am (1130)	Command & General Staff meeting	Form common operating picture among IMT.	C&G staff	GTM -Room Q40
1:00 pm (1300)	Tactics meeting *agenda 4-20 (red book)*	Review and approve tactics for next operational period.	OSC, RESL, LSC, SOFR, FSC	GTM -Room Q40
2:30 pm (1430)	Planning Meeting *agenda 4-26 (red book)*	Review, validate, and support the plan.	C&G staff, RESL, SITL, DIVS	GTM -Room Q40
5:00 pm (1700)	Daily Wrap up *agenda for end of day briefing*	Success and challenges/gaps of the day.	C&G staff, RESL, SITL, DIVS, AA	Room #S4 and GTM

Prepared by:	Denise O'Hara, PSC	Signature:	/s/ Denise O'Hara		
ICS Form 230		Date:	2/26/2020	Time:	1700

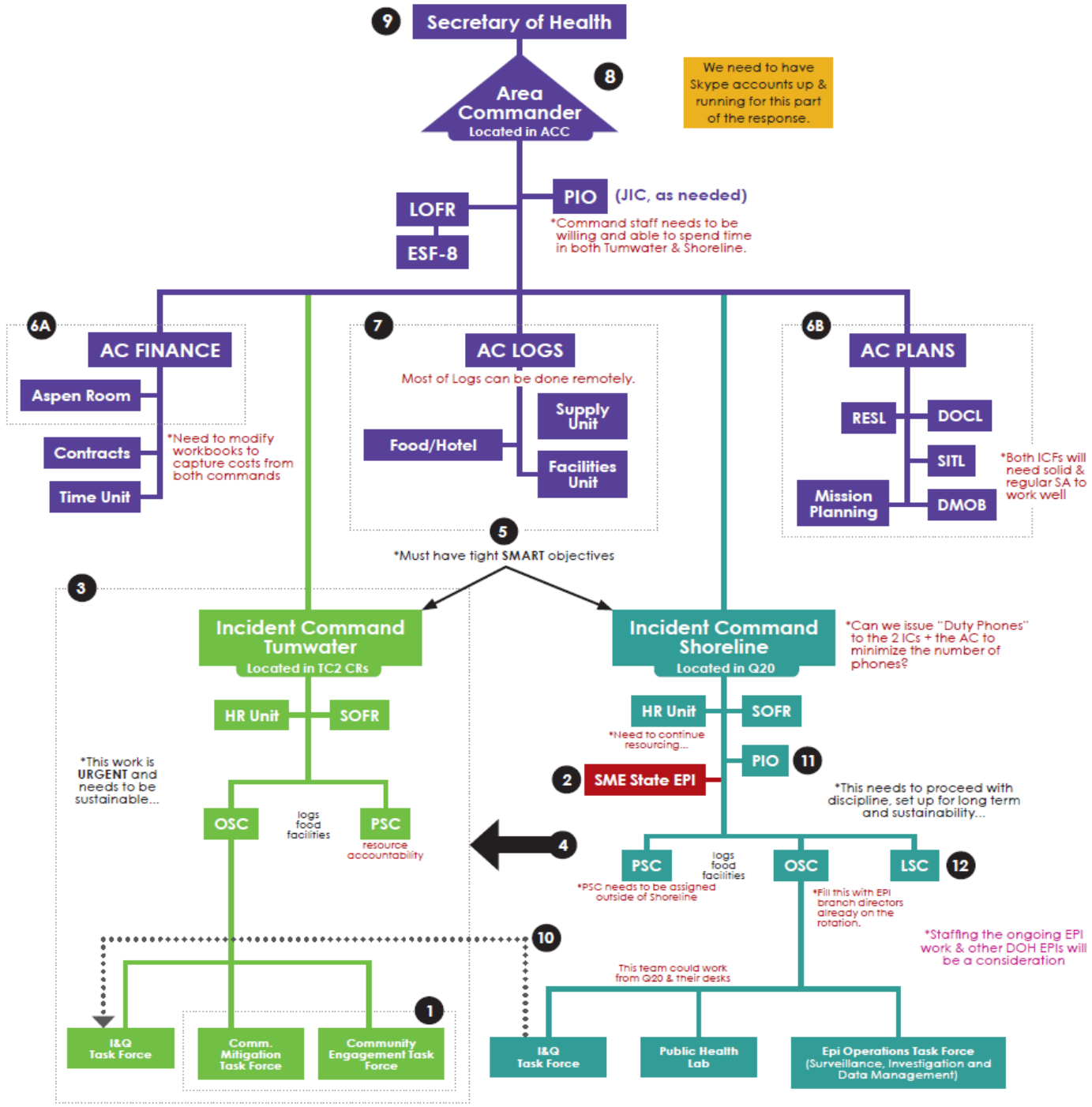
ICS 230
Shoreline Ops Meeting Schedule

Incident Name: 20-0265 2020 Novel CoV	2. Date: 2/27/2020	OPS Meeting Schedule (Shoreline) ICS 230

Meeting schedule

Time	Meeting name	Purpose	Attendees	Location
9:00 am (0900)	Operations Section Leadership	Support update	Operations Section Leadership	Dial in - See calendar invite
11:00 am (1100)	Deputies Call/COOP Planning Coordination	Support update	RESL, HR Unit	Dial in - See calendar invite
11:00 am (1100)	LHJ Comms Call	Information sharing	Communicators from: LHJs, IMT, Port of Seattle, WA EMD, Providence Hospital	GTM -Room A22
12:00 pm (1200)	Resource Needs and 213s completed	**Reminder**		
12:45 pm (1245)	Work Assignments and Staffing for 204s	**Reminder**		
2:45 pm (1445)	Operations to Operations call	Support update	Operations	Dial in - See calendar invite
3:00 pm (1500)	Dashboard Updates	**Reminder**		
3:45 pm (1545)	Finance Daily Update/Info Sharing	Finance Daily Update/Info Sharing	FSC	Dial in - See calendar invite
4:00 pm (1600)	Operations Group Touch Base/Brief EOD 214s	Support update	POPS	Dial in - See calendar invite
4:05 pm (1605)	Policy briefing	Discuss pertinent policy issues.	Policy decision makers: ALT, Exec Team, IC, AA	See calendar invite

Prepared by: Denise O'Hara, PSC	Signature: /s/ Denise O'Hara	
ICS Form 230	Date: 2/26/2020	Time: 1700



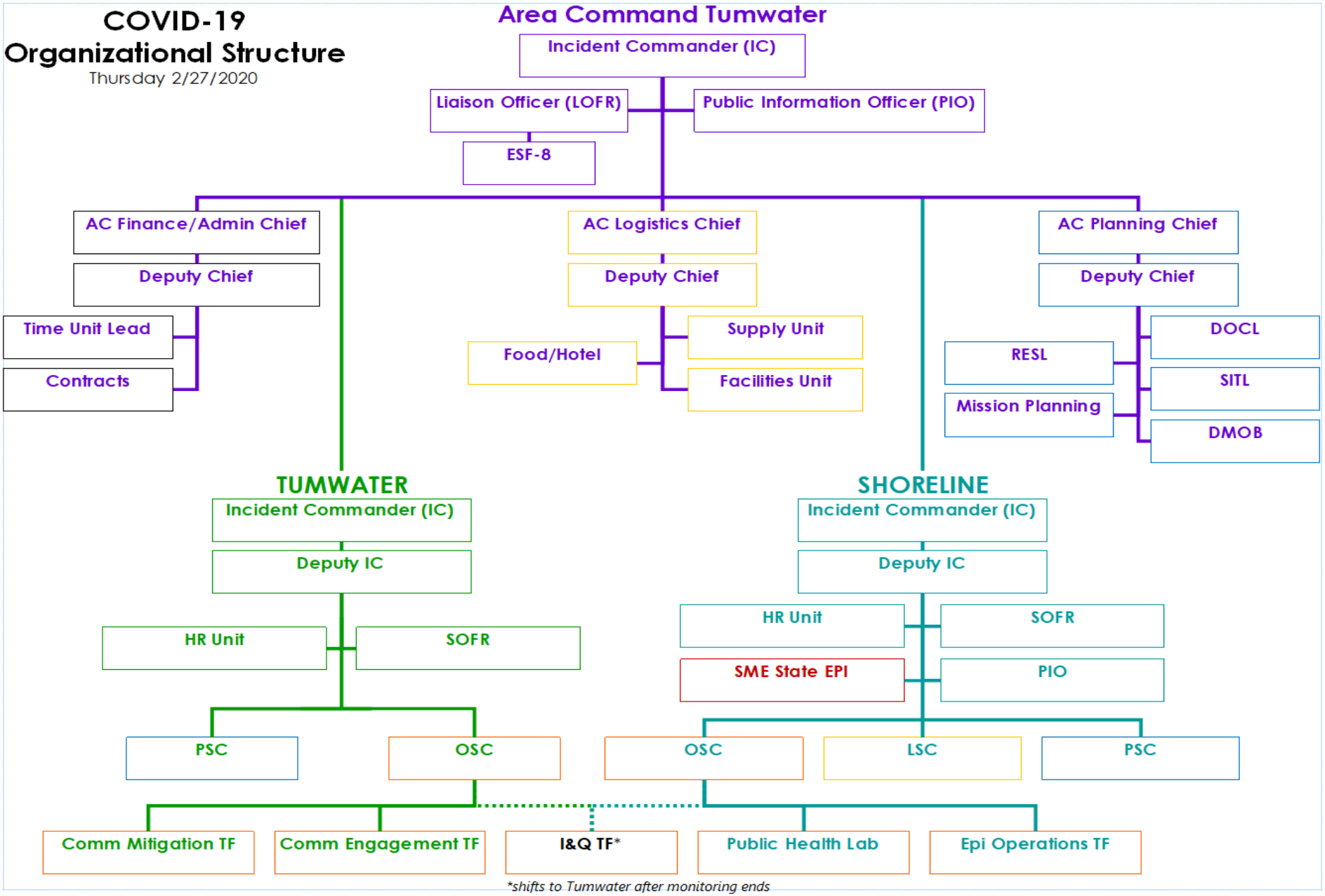
ALL DAYS ARE CLOSE OF BUSINESS

1	Mon 2/24	Firm up the Community Mitigation TF & Community Engagement TF
2	Mon 2/24	Assign Deputy IC, Deputy HR, Deputy PSC, and Deputy OSC to current operations... (can use existing staff)
3	Tue 2/25	Delegate authority for Tumwater IC
4	Tue 2/25	Shift deputies from existing Shoreline Command to Tumwater Command
5	Thu 2/27	Set the two commands in place and running parallel
6A	Wed 2/26	Consolidate Finance & Aspen Room
6B	Thu 2/27	Consolidate Plans & Deputies in ACC
7	Fri 2/28	LOGs Divides to Support Both ICs
8	Fri 2/28	Area Command Delegated
9	Sat 2/29	Full Area Command is pulled together in Tumwater
10	TBD	I&Q shifts from Shoreline to Tumwater when 14 day monitoring period ends
11	TBD	PIO leaves onces quarantine mission ends in Shoreline
12	TBD	Once testing is available at PHL, Logistics support will be needed

2/26 3:11 PM

COVID-19 Organizational Structure

Thursday 2/27/2020



COVID-19

SITUATION REPORT # 37

WA DOH Incident Management Team

OFFICIAL USE ONLY

21ate:	Time:	Contacts:
Wednesday, February 26, 2020	1600	Email: doh-pio@doh.wa.gov Phone: 253-512-7100
IMPACTED AREAS County/Regions:	Snohomish County, WA	

CURRENT SITUATION (new information highlighted)

Please contact the Poison Control Call Center at 1-800-525-0127 for further information related to this outbreak. Please contact the DOH Duty Officer at 360-888-0838 or hanalert@doh.wa.gov for question regarding incident management or emergency preparedness and/or response.

Washington Confirmed Cases

COVID-19 Washington confirmed cases by county in 2020*		
County	**Cases to date**	**Last Changed**
Snohomish	1	1/21/2020
Total	**1**	**1/21/2020**

*This table represents cases detected and tested in the United States through U.S. public health surveillance systems since January 21, 2020. It does not include people who returned to the U.S. via State Department-chartered flights, per CDC guidance.

COVID-19 Washington Test Results-Updated 2/26/2020	
Positive (confirmed)	1
Negative	26
PUIs Pending Results	2
Total Tested	**29**

Washington Close Contacts Being Monitored-Updated 2/23/2020	
Counties	**Close Contacts**
N/A	0
Total	**0**

Total Persons under public health monitoring – Updated 2/26/2020
Total: 355

Executive Summary

As of the release of this SitRep, only one case of novel coronavirus (COVID-19) has been confirmed, and that individual has recovered. IMT Epidemiologists continue to monitor potential contacts and reach out to travelers. Operations staff are focused on building communications to promote community engagement, and establishing safe and scalable isolation capabilities.

Prepared by: Kali Turner, SITL	Approved by: Denise O'Hara, PSC	Last updated: 2/26/2020

Current Operations	Currently the DOH IMT Operations section is engaged in the following activities:
	
	Overall Operations
	Background:
	- All groups worked on adjusting operations based on evolving CDC guidance and situational awareness around quarantine planning and operations.
	- Support and coordination with 4 patients transferred to Spokane, as well as shipment of daily COVID-19 tests for CDC.
	- Established a Mission Planning Group to develop guidance on operationalizing Non-Pharmaceutical Intervention guides 10 through 13.
	- Complete transition plan to divide this incident into two separate components, each led by one of two DOH Incident Management Teams (one in Shoreline, WA and one in Tumwater, WA) to operationalize 2/28/2020. These structures will have the advantage of being able to operate with greater efficiency. Additionally, the agency will establish an area command responsible for supporting the incident commands administratively.
	
	Epidemiological Operations Task Force
	Background:
	- Provided guidance documentation for travelers entering Washington via SeaTac Airport or cruise ships on COVID-19, social distancing, and symptom monitoring.
	- Packaged and sent letters to travelers identified through EpiX.
	- Continue to utilize TIMS. Washington State is the first to use this system. Responses to TIMS forwarded to JHLs for more information.
	- Support and coordination for the COVID-19 tests heading from Spokane and Thurston Counties to the CDC.
	- Continuing to process EpiX traveler records.
	- Enhanced Surveillance Report demonstrated today (2/24) using syndromic surveillance, WDRS, mortality, and call center data.
	
	Public Health Laboratory (PHL) Group
	Background:
	- Gained EUA for COVID-19 testing capabilities with approval from FDA and CDC.
	- LIMs lab data entry module is running and staff are being trained.
	- Onboarded 5 UW SEAL students on lab systems as testing support, allowing for surge capacity when needed.
	- Staffing 2 microbiologists for surge capacity testing at PHL.
	
	Community Engagement Task Force
	Background:
	- Identified working components of task force:
	  - Public Health Policy, Guidance, and Communication
	  - Diversity, Equity, Inclusion (DEI)
	  - Community Relations

- Provided guidance for pathologists, medical examiners, and coroners who may perform autopsies on patients with COVID-19.
- Provided and translated guidance documents for LHJ and local healthcare providers.
- Sent out school guidance documents for schools and daycare centers.
- Conducting equity and cultural sensitivity review.
- Developed outreach strategy for quarantine facility.

Community Mitigation Task Force

Background:

- Established basecamp website for LHJs, including infection prevention guidance, and additional guidance from DOH.
- Completed and distributed WATrac guidance for updating airborne infection isolation rooms.
- Developed home health kits for impacted public health partners.
- NIOSH and OSHA reviewing masks that are older than five years for emergency use.
- Worked on improving Non-pharmaceutical Pharmaceutical Interventions (NPI) and mitigation strategies based on updated leader's intent.
- Secured staffing to develop strategic guidance for public health preparedness.
- Incorporated executive comments and equity review into 13 Non-Pharmaceutical Intervention guides prior to presentation to the Governor.
- Developing/augmenting guidance for PPE resource conservation.
- Augmenting NPI documents prior to presentation to the Governor on 2/24.
- Preparing for school guidance presentation with OSPI.
- Non-Pharmaceutical Intervention guidance will be posted on Basecamp 2/25/2020.

Updates:

- COVID-19 Assessment Matrix of survey questions regarding staffing, supplies, space and systems at hospitals collated for future survey use at DOH.

Isolation and Quarantine Task Force

Background:

- Finalized plan for quarantine site to receive and monitor individuals, plans for non-life-threatening transport of any potential COVID-19 patients to a specific DOH quarantine site, and tear-down and transition plans for quarantine site.
- Continue to conduct tabletop exercises for quarantine staff groups in preparation for additional quarantine needs.
- Continue to conduct safety assessment for isolation site, ensuring site is ADA compliance.
- Preparing isolation site RVs to be ready to accept isolation individuals, if necessary.
- Acquiring one staff RV for the isolation site.

Public Information

Background:

- Creating and executing communications strategy for each incident within the response.

	- First responders for immediate communications around incident-specific situational changes. - Media Liaisons: Triage requests, broker answers, create core messaging (Talking Points, statements, news releases and other content). - Situation-specific Joint Information Coordination to ensure consistent messaging across jurisdictions. - Created basic foundational messaging for the public about safety precautions in case of a pandemic. - Communicated guidance to Northshore School District teacher who recently returned from Hong Kong. - Updated guidance for schools on DOH external website and shared with LHJs. - Infographic on quarantine vs. isolation finalized. Updates: - Talked through NPI guidance documents and how guidance will be communicated via the task force during daily LHJ coordination call (2/26/2020). **FEMA Region 10** - Washington**:** Activation level 1. One COVID-19 case. One PUI. - Oregon**:** Activation level 2. No cases, persons under monitoring: 76. (updated 2/25/2020) - Idaho**:** Activation level 3. No cases. - Alaska**:** Activation level 2. No cases.
Literature Situation Report	This is not official guidance from the CDC and is based on a Department of Health literature review. Reports can be found here: https://www.doh.wa.gov/Emergencies/Coronavirus/Resources Background: - Researchers estimate that cases in Wuhan may be under-detected by seven fold. - Using data on Japanese travelers evacuated from Wuhan, researchers conclude that as many as half of all COVID-19 cases may be asymptomatic. - A pooled estimates indicate an R_0 of 3.1, with likely values ranging from 2.1-5.7. - Incubation period estimates the majority of persons developing symptoms within 5-11 days. A small number (<1%) extend beyond 14 days. - Home isolation of sick persons may be the most effective way to limit transmission, based on findings from pandemic influenza. - Studies highlight potential effectiveness of Chloroquine phosphate as a viable treatment option for COVID-19-associated pneumonia. - Preliminary evidence from hospital-based studies indicates that kidney impairment and acute respiratory distress syndrome are associated with a greater likelihood of death among hospitalized COVID-19 patients. - Researchers seem to be converging on the theory that while bats are the most likely origin of 2019-nCoV, pangolins are the most likely intermediary host.

	- Mounting evidence from small family cluster and larger population studies suggests not only a strong likelihood of asymptomatic transmission of SARS-CoV-2 but also that cases resulting from asymptomatic transmission can develop severe illness. - Healthcare workers in China, particularly those working in isolation units, are reporting symptoms of anxiety, depression, and stress. Meanwhile, public fear and psychological distress in China and other countries may be associated with several factors including thinking about COVID-19 for 3+ hours daily, distrust of official communications about the outbreak, and xenophobia. - Increasingly, modelling papers suggest that the movement restrictions implemented in Wuhan on January 25th appear to have had an impact on the rate of spread outside of Hubei Province. - Quantitative reverse transcription PCR (qRT-PCR) is currently the standard for COVID-19 detection; however, Reverse Transcription Loop-Mediated Isothermal Amplification (RTLAMP) may allow for faster and cheaper field-based testing. - Researches have highlighted the benefits of using a one-health (animal-human-environment) modelling approach to improve our understanding SARS-CoV-2 epidemiology, particularly in the context of fresh meat and seafood markets in China. Updates: - New studies continue to find that older age and comorbidities, especially hypertension, are associated with an elevated risk of COVID-19 illness, increased symptom severity, and death. - Several papers discuss COVID-19 considerations and outcomes for a range of vulnerable populations, including cancer patients and those in hemodialysis centers and psychiatric in-patient facilities. - Neurological symptoms in COVID-19 patients appear to be more common among those with severe illness and include acute cerebrovascular diseases, consciousness impairment, and skeletal muscle symptoms. This is the first study to explore the neurological effects of the illness.

Key Messages from Public Information Officer	• The Department of Health is coordinating with local, state, tribal and federal partners on efforts to protect public health and prevent the spread of COVID-19.
	• While this situation poses a serious public health threat, the immediate health risk to the general public remains low in Washington.
	• There are steps people can take to reduce their risk of getting any viral respiratory infection. These include:
	  ○ Wash your hands frequently.
	  ○ Avoid touching your mouth and eyes.
	  ○ Cover your coughs and sneezes.
	  ○ Stay away from people who are sick.
	  ○ Stay home when you are sick.
	• For the latest information please visit: www.doh.wa.gov/coronavirus
	• If people are concerned or want to learn more about COVID-19, we have a call center open. Call 1-800-525-0127 and press #.
	• Media inquiries should be directed to doh-pio@doh.wa.gov or 253-512-7100.

Washington State COVID-19 news: 2/26/2020

DOH mentions/ Quotes

State Taps Maple Lane as Possible COVID-19 Isolation, Quarantine Site (DOH mentioned; Centralia Chronicle)
Clark County ready if coronavirus should appear here (DOH mentioned; Columbian)

WA State

University of Washington scholars discuss COVID-19 impacts worldwide (KING 5)
Local experts push for more preparation to confront coronavirus (KOMO)

National

Trump could appoint coronavirus czar (KREM)
Respirator masks hard to come by in Portland amid Coronavirus fears (KOMO)
Why Washington state's health experts aren't panicking yet about the Wuhan coronavirus (Seattle Times)
How to prepare for coronavirus in the U.S. (Spoiler: Not sick? No need to buy any masks.) (Seattle Times, Washington Post)
New data from China buttress fears about high coronavirus fatality rate, WHO expert says (STAT)
Coronavirus mixed messages: CDC vs. Trump; San Francisco declares emergency; 270k facemasks needed (USA Today, Reuters)
Trump to hold news conference on coronavirus US threat (KING 5, KEPR TV, KOMO, KREM, USA Today, AP, Yakima Herald)
Trump, US officials send mixed messages on virus risk here (AP)
The first US soldier has tested positive for coronavirus (VOX)
U.S. CDC confirms 59 coronavirus cases, including repatriated citizens (Reuters)
Disney World officials say they're keeping close eye on workers who traveled to Italy amid coronavirus outbreak (KIRO 7)
Delta reduces flights to South Korea over coronavirus concerns (KING 5, KREM)
How to travel during the international coronavirus outbreak (VOX)
Opinion: Airplanes spread diseases quickly – so maybe unvaccinated people shouldn't be allowed to fly (AP via Yakima Herald)

Global

Why Iran's coronavirus outbreak may be worse than you think (VOX)
Coronavirus: More New Cases Are Now Reported Outside China Than Inside (KUOW, NPR, AP)
Coronavirus Live Updates: Europe Prepares for Pandemic as Illness Spreads From Italy (New York Times)
Italy sees virus cases rise 45% in a day; deaths up to 11 (Tri-City Herald)
Italy seeks to calm fears in Europe as cases, deaths rise (AP)
Coronavirus lockdown: the heroes risking their health for Italy's 'red zone' (Reuters)
Brazilian Who Visited Italy Is First Coronavirus Patient in Latin America (New York Times, Tri-City Herald, AP)
Where Coronavirus Is Now Causing Concern: Iran, Italy, South Korea (NPR)
COVID-19: 2nd death in France; South Korea cases jump; 1st US soldier infected (KING 5)
Coronavirus Live Updates: Disruptions, Rising Cases, Warnings (New York Times)
Shaved Heads, Adult Diapers: Life as a Nurse in the Coronavirus Outbreak (New York Times)
Worried Chinese turn to online doctor consultations amid coronavirus outbreak (Reuters)

China's blood donations dry up as coronavirus outbreak quells giving (Reuters)
CNN's Sanjay Gupta answers top questions on coronavirus (video; CNN)
Globe braces for long battle as virus cases spread (KEPR TV, KIMA TV)
Olympics going ahead as planned, organizers say (KREM, Q13)
How coronavirus could force the work-from-home movement (VOX)
On the verge of a pandemic, can the world look to China for answers? (USA Today)
How deadly is new coronavirus? It's still too early to tell (AP)

Economic/ Viewpoints

Coronavirus is fast becoming an 'economic pandemic' (CNN)
Stocks open higher on Wall Street following 2 steep drops (KREM)
Stock market upheaval exacerbating Trump's concerns over coronavirus (Q13)
Coronavirus Weakens China's Powerful Propaganda Machine (New York Times)
Coronavirus poses tough challenge for economic policymakers (AP)
As coronavirus looms over Olympics, Japan PM urges two-week curbs on sports events (Reuters)
Morgan Stanley conference-goers asked to self-report coronavirus exposure (Reuters)

From: Burkland, Anne
To: Worsham, Dennis; Hayes, Patty; Ulrey, Ingrid
Cc: Apa, James
Subject: FW: Emerging King County Public Health update
Date: Saturday, February 29, 2020 3:57:16 PM

FYI

From: Putney, April
Sent: Saturday, February 29, 2020 3:39 PM
To: Burkland, Anne <Anne.Burkland@kingcounty.gov>; Braddock, Shannon <Shannon.Braddock@kingcounty.gov>
Subject: Fwd: Emerging King County Public Health update

Here's what I sent.

From: Putney, April <April.Putney@kingcounty.gov>
Sent: Saturday, February 29, 2020 4:26:16 PM
To: Putney, April <April.Putney@kingcounty.gov>
Cc: Jackson, Celia <cjackson@kingcounty.gov>; Nicholson, Mac <Mac.Nicholson@kingcounty.gov>
Subject: Emerging King County Public Health update

King County Delegation, good afternoon. I am writing to share an update on emerging public health issues in King County.

This afternoon Public Health – Seattle & King County and the Washington State Department of Health announced new cases of COVID-19 in King County, including one death.

Two of the new confirmed cases are associated with LifeCare nursing facility in Kirkland. One is a health care worker from LifeCare. She is in satisfactory condition at Overlake Hospital and has no known travel outside of the United States. The second case is a woman in her 70s who is a resident of the facility and is in serious condition at EvergreenHealth Hospital. In addition, more than 50 individuals associated with LifeCare are reportedly ill with respiratory symptoms or hospitalized with pneumonia or other respiratory conditions of unknown causes and are being tested for COVID-19. This is to say, we expect additional positive cases in the coming days. Public Health – Seattle & King County is currently working with LifeCare to provide care for ill patients while protecting uninfected patients. The CDC is sending additional staff to help us in our efforts to identify, isolate and test all those who may be at risk because of these new cases.

The individual who died was a man in his 50s with underlying health conditions who had no history of travel or contact with a known COVID-19 case; he was not a resident of the long-term care facility.

At this point in time, Public Health's guidance to the public is not changing:

- Wash your hands.
- If you are sick, stay home.

If you're sick, cover your cough with your arm.
- Avoid touching your face.

If you believe you have been exposed to or have symptoms of COVID-19:

- Call your doctor – Do not go into a medical facility.
- Your doctor will make an assessment about next steps. If it is determined that you should be screened for COVID-19, your doctor will contact King County Public Health to make arrangements for screening.
- Take all appropriate precautions. Do not go to work if you are sick. Wash your hands often and do not touch your face.

The situation with and response to COVID-19 is rapidly evolving. The risk to the general public is increasing but currently remains low as there has been no wide spread of the disease. Our website has the latest local information on coronavirus, as well as information/fact sheets for various audiences that might be useful for you/your constituents; it includes the latest info from DOH and CDC. You can also sign up for email alerts anytime we post anything significant to it.

King County Public Health will continue to do everything that is needed to keep our communities safe. We cannot underscore enough how much we appreciate the funds you have already proposed in your budgets. We assure you, they are critically needed.

Since the beginning of the year, King County has shuffled our public health staff around to be able to prepare for the emerging threats around COVID-19. Unfortunately, there are new co-occurring outbreaks in our community making it harder to shift resources. We continue to have a statewide hepatitis A outbreak in Washington; in King County we had eight new cases of hepatitis A in our homeless population just last week. This year, we have seen a 40% increase in Tuberculosis in King County and are currently conducting a very large contact investigation. This week, we also had meningitis cases in a congregate housing facility that required the administration of preventive medicine to 46 individuals. We continue to respond to a sharp increase in HIV rates; between 2017 and 2018, King County has seen a 300% increase in HIV among heterosexuals who inject drugs.

I will keep you updated and be your primary point of contact for any questions you may have related to any of these (or emerging) outbreaks in King County. Please let me know if you have any questions.

-April

—

April Putney
Director of Government and External Relations
Office of King County Executive Dow Constantine
206-519-9766 / april.putney@kingcounty.gov

From: Podczervinski, Sara T (DOH)
To: Kay, Meagan
Cc: Montgomery, Patricia A (DOH)
Subject: FW: New Document for Approval - Preserving PPE
Date: Saturday, February 29, 2020 11:45:06 AM
Attachments: image001.png
image003.png
image005.png
image007.png
image009.png
Preserving PPE in Healthcare COVID 19.pdf
Preserving PPE in Healthcare COVID 19.docx

FYI – shortened version of CDC info on preserving PPE.

From: Podczervinski, Sara T (DOH)
Sent: Saturday, February 29, 2020 11:27 AM
To: DOH-IC (DOH) <doh-ic.imt@doh.wa.gov>
Cc: Turnberg, Wayne (DOH) <Wayne.Turnberg@DOH.WA.GOV>; Matheson, Jasmine S (DOH) <Jasmine.Matheson@DOH.WA.GOV>; D'Angeli, Marisa (DOH) <Marisa.DAngeli@DOH.WA.GOV>; Hensley, Joni L (DOH) <joni.hensley@doh.wa.gov>; Montgomery, Patricia A (DOH) <patricia.montgomery@doh.wa.gov>; DOH-PIO (DOH) <doh-pio.imt@doh.wa.gov>
Subject: New Document for Approval - Preserving PPE

Hello,
Our Healthcare Associated Infections Team developed a document on preserving PPE. Can you review and approve? We'd like to post this on our website.

Document info:

New or Updated Document?	New
Adapted from?	CDC https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirator-supply-strategies.html
Audience	Healthcare
Where we would like this posted on DOH site	https://www.doh.wa.gov/Emergencies/Coronavirus/Resources To post under Main header "Healthcare Resources" then under subheading "Infection Prevention and PPE"
Rationale for Document	PPE shortages in healthcare
Short Description of Document	This document describes the primary ways to implement infection control measures in healthcare using the CDC/OSHA hierarchy of controls (e.g.,

	administrative controls and PPE) and how to preserve PPE for under the hierarchy of controls.

Thanks,
Sara

Sara Podczervinski, RN, MPH, CIC, FAPIC
Healthcare-Associated Infections and Antimicrobial Resistance Program Manager
Office of Communicable Disease Epidemiology
Disease Control and Health Statistics
Washington State Department of Health
sara.podczervinski@doh.wa.gov
206-418-5519 | www.doh.wa.gov


M

2019 Novel Coronavirus (COVID-19) Response: Optimizing Use of Personal Protective Equipment (PPE)

Background

The Centers for Disease Control and Prevention (CDC) recommends the use of a hierarchy of controls in healthcare settings to prevent transmission of 2019 Novel Coronavirus (COVID-19) infections, which are caused by the virus SARS-CoV-2. These include:

Control Type	Description
Engineering	Reduce exposures by placing a barrier between health care personnel and the people who may be infected. Engineering controls can be very effective as part of a suite of strategies to protect healthcare workers (HCW) without placing primary responsibility of implementation on them (i.e., they function without HCW having to take an action).
Administrative	Refers to employer-dictated work practices and policies that reduce or prevent hazardous exposures. Their effectiveness depends on employer commitment and HCP acceptance and consistent use of the strategies.
Personal Protective Equipment (PPE) and Respiratory Protection	The use of PPE should also be part of a suite of strategies used to protect personnel. Proper use of respiratory protection by HCW requires a comprehensive program (including medical clearance, training, and fit testing) that complies with Occupational Safety and Health Administration's (OSHA) Respiratory Protection Standard and a high level of HCW involvement.

Healthcare personnel should adhere to **Standard**, **Contact**, and **Airborne Precautions**, including the use of eye protection (e.g., goggles or a face shield) when caring for patients with COVID-19 infection. These precautions include the use of the following PPE:

✓ NIOSH approved fit-tested N-95 respirator or higher such as a powered air-purifying respirator (PAPR)	✓ Eye protection (e.g., goggles, or a disposable face shield that covers the front and sides of the face)
✓ Isolation gown	✓ Clean, nonsterile gloves

Engineering Controls

- Patients with known or suspected COVID-19 should be placed in an airborne infection isolation room (AIIR) that has been constructed and maintained in accordance with current guidelines.
  - In spaces not currently designated for AIIR, consider heating, ventilation, air conditioning (HVAC) capacity to manipulate airflow, consider direction of air flow, filtration and exchanges rates.
- Reduce HCW exposures to ill patients through placement of physical barriers. Examples include as glass/ plastic windows in reception areas where patients may first report or arrive to health-care facility and the use of curtains between patients in shared areas and closed suctioning systems for airway suctioning for intubated patients.

If you need this document in an alternative format, call 800.525.0127 (for TDD/TTY call 711).

Administrative Controls

Before Patient Arrives at Healthcare Facility

- *Limit number of patients going to hospital or outpatient settings.* Develop mechanisms to screen patients for acute respiratory illness prior to their non-urgent care or elective visits or procedures, such as through the appointment reminder system. Triaging persons to the appropriate level of care will reduce the influx of patients to healthcare facilities seeking evaluation.
- *Practice telehealth*. Use nurse advice lines and telemedicine to screen and manage patients who may be infected with COVID-19.
- *Postpone and reschedule visits*, especially for those with COVID-19 symptoms presenting for these non-acute visits.
- *Limit the unanticipated arrivals of symptomatic stable persons to healthcare facilities* by conducting active outreach to symptomatic patients (e.g., Ecare message reminders for patients).

During Healthcare

- *Source control.* Patients with symptoms of respiratory infection should wear a facemask (i.e., surgical or procedure masks). Patients with symptoms should not use N95 respirators.
- *Limit face-to-face HCW encounters with patient.* Approaches to minimize the number of HCW providing direct care to patients with known or suspected COVID-19 include:
  - Bundle patient care activities.
  - Use of tablet, telephone, computer, and cell phone for verbal and video communication.
  - Develop visitor exception policies based on end-of-life situations or other situations when visitor is essential to the patient's emotional well-being.
- *Cohorting patients and HCW*. Cohorting is the practice of grouping together patients who are infected with the same organism to confine their care to one area and prevent contact with other patients. Cohorts are created based on clinical diagnosis, microbiologic confirmation when available, epidemiology, and mode of transmission of the infectious agent. Assigning designated teams of HCW to provide care for all patients with suspected or confirmed COVID-19 could minimize respirator use.

Strategies for Optimizing PPE Use

- Minimize contact with people who may be infected through engineering and administrative controls.
- Use alternatives to N95 respirators (e.g., other classes of filtering facepiece respirators, elastomeric half-mask and full facepiece air-purifying respirators, powered air-purifying respirators) where feasible.
- Implement practices allowing extended use and/or limited reuse of N95 respirators and PAPRS, when acceptable.
- Prioritize use of N95 respirators for those HCW at the highest risk of acquiring infection.
- Consider pausing mandatory HCW masking polices for asymptomatic employees who did not receive the influenza vaccine.
- Conserve facemasks by limiting use to symptomatic patients.
- Prioritize locations of masks to prevent theft (e.g., reception staff provide masks to symptomatic patients).

Resources

- CDC Strategies for Optimizing the Supply of N95 Respirators: https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirator-supply-strategies.html
- NIOSH Guidance for Extended Use and Limited Reuse of N95s: https://www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html

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If you need this document in an alternative format, call 800.525.0127 (for TDD/TTY call 711).

From: LeDuc, James W.
To: Duchin, Jeff
Cc: Carter Mecher
Subject: FW: Red Dawn Breaking Bad, Start Feb 24
Date: Saturday, February 29, 2020 1:10:59 PM
Attachments: image001.png
image002.png
image005.png

Sorry, had wrong email

From: LeDuc, James W.
Sent: Saturday, February 29, 2020 3:08 PM
To: Carter Mecher <cmecher@charter.net>
Cc: Jeff Duchin (Jeff.Duchin@METROKC.GOV) <Jeff.Duchin@METROKC.GOV>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

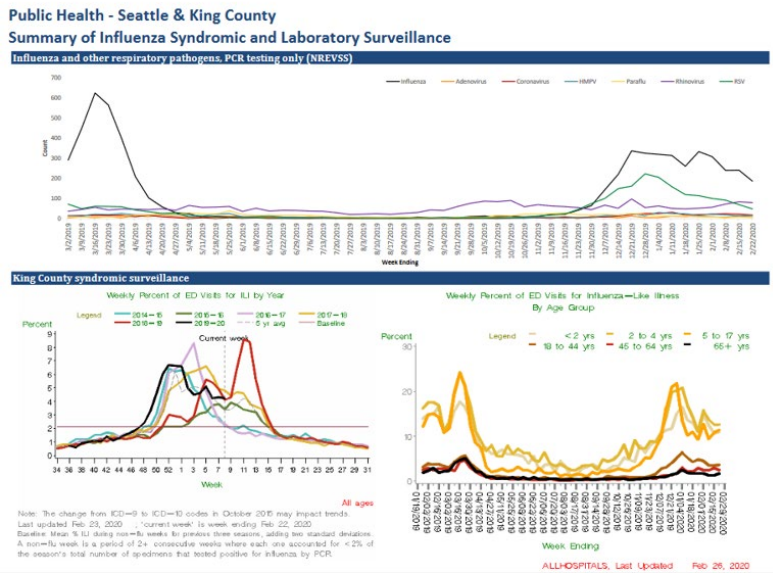
Contacting Jeff Duchin.

Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) 409-789-2012

From: Carter Mecher <cmecher@charter.net>
Sent: Saturday, February 29, 2020 2:09 PM
To: Dr. Eva K Lee <evalee-gatech@pm.me>
Cc: Lawler, James V <james.lawler@unmc.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Caneva, Duane <duane.caneva@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Tom Bossert <tom.bossert@me.com>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; riglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; LeDuc, James W. <jwleduc@UTMB.EDU>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Fantinato, Jessica - OHS, Washington, DC <jessica.fantinato@usda.gov>; Colby, Michelle - OHS, Washington, DC <michelle.colby@usda.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

I am also concerned about Seattle (Kings County). Charity, do you have contacts there? Or could someone reach out to Jeff Duchin from CDC or HHS?
https://www.kingcounty.gov/depts/health/communicable-diseases/disease-control/~/media/depts/health/communicable-diseases/documents/influenza/2020/week-08.ashx
This is week 8 data (so recent data). Compare the 3 graphs. Seeing a mismatch between pathogens by PCR (going down) and syndromic surveillance (flat). Also looking at ED visits and seeing an upward trend in school age kids (ages 5-17) and 45-64 year olds. Something doesn't sit right with me.



Sent from Mail for Windows 10

From: Carter Mecher
Sent: Saturday, February 29, 2020 2:58 PM
To: Dr. Eva K Lee
Cc: Lawler, James V; Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Charity, do you have any contacts in Hawaii? Would really be interested in Week 8 data.

I remember a story of a couple from Japan who were symptomatic while visiting Hawaii and were confirmed to have COVID upon their return to Japan.
https://bigislandnow.com/2020/02/17/53-self-monitor-for-coronavirus-in-hawaii-after-visiting-japanese-couple-tests-positive/

My understanding is that Hawaii did not perform testing on anyone (just monitored some contacts from symptoms).

I went to Hawaii's flu surveillance (their latest data is from week 7). My concern is the continued rise in ILI, despite a drop off in influenza in the lab.
https://health.hawaii.gov/docd/files/2018/03/FLU_Influenza_Surveillance.pdf

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Saturday, February 29, 2020 1:15 PM
To: Carter Mecher
Cc: Lawler, James V; Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: Re: Red Dawn Breaking Bad, Start Feb 24

Oops. I mixed up the order. It should be -
From travelers: Washington, Illinois, California, Arizona, MA, Wisconsin, Oregon
Unknown origin: California, Oregon, Washington

I did a quick analysis on strategic screening, if we have enough testing power, I would suggest community testing strategically in California, Chicago/Illinois, Oregon, Washington, Boston, Atlanta, New York. It would be great if we can cover more. We have to go beyond contact tracing. It is also good to cover some universities.

evalee-gatech@pm.me
https://newton.isye.gatech.edu/DrLee/
mobile: 404-432-6835

Sent with ProtonMail Secure Email.

------- Original Message -------
On Friday, February 28, 2020 7:55 PM, Dr. Eva K Lee <evalee-gatech@pm.me> wrote:

> Yes, good for them to ask.
>
> It will be good to know how many are under observation and self quarantine also. Chicago is the first city with the confirmed COVID-19 case in US (from a returning traveler). I have forward the Kaiser data to Ncal and Jeff. See if they have an answer. I don't know if I can see the Ncal data on their EPIC system. I will see.
>
> ------- Original Message -------
> On Friday, February 28, 2020 7:49 PM, Carter Mecher <cmecher@charter.net> wrote:
>
> > Need someone from HHS or CDC to pick up the phone and reach out to public health in Chicago. I would also reach out to Kaiser in Northern California. How are they explaining this?
> >
> > Sent from my iPhone
> >
> > On Feb 28, 2020, at 6:57 PM, Lawler, James V <james.lawler@unmc.edu> wrote:
> >
> > Great pick up Carter. How can we confirm? In the absence of diagnostics, I would take an abnormal uptick in ILI syndromic data as a trigger for NPI.
> >
> > **James Lawler, MD, MPH, FIDSA**
> >
> > m: 703.407.6431
> >
> > james.lawler@unmc.edu
> >
> > ---
> >
> > **From:** Carter Mecher <cmecher@charter.net>
> > **Date:** Friday, February 28, 2020 at 3:37 PM
> > **To:** Tracey McNamara <tmcNamara@westernu.edu>, "Baric, Ralph S" <rbaric@email.unc.edu>, "Caneva, Duane" <duane.caneva@hq.dhs.gov>, Richard Hatchett <richard.hatchett@cepi.net>, "Dr. Eva K Lee" <evalee-gatech@pm.me>
> > **Cc:** Tom Bossert <tom.bossert@me.com>, "Martin, Gregory J" <MartinGJ@state.gov>, "Walters, William" <WaltersWA2@state.gov>, "HAMILTON, CAMERON" <cameron.hamilton@hq.dhs.gov>, "rjglassjr@gmail.com" <rjglassjr@gmail.com>, "Dodgen, Daniel (OS/ASPR/SPPR)" <Daniel.Dodgen@hhs.gov>, "DeBord, Kristin (OS/ASPR/SPPR)" <Kristin.DeBord@hhs.gov>, "Phillips, Sally (OS/ASPR/SPPR)" <Sally.Phillips@hhs.gov>, David Marcozzi <DMarcozzi@som.umaryland.edu>, "Hepburn, Matthew J CIV USARMY (USA)" <matthew.j.hepburn.civ@mail.mil>, Lisa Koonin <lkoonin1@gmail.com>, "HARVEY, MELISSA" <melissa.harvey@hq.dhs.gov>, "WOLFE, HERBERT" <HERBERT.WOLFE@hq.dhs.gov>, "Eastman, Alexander" <alexander.eastman@hq.dhs.gov>, "EVANS, MARIEFRED" <mariefred.evans@associates.hq.dhs.gov>, "Callahan, m." <MVCALLAHAN@mgh.harvard.edu>, "jwleduc@UTMB.EDU" <jwleduc@utmb.edu>, "Johnson, Robert (OS/ASPR/BARDA)" <Robert.Johnson@hhs.gov>, "Yeskey, Kevin" <kevin.yeskey@hhs.gov>, "Disbrow, Gary (OS/ASPR/BARDA)" <Gary.Disbrow@hhs.gov>, "Redd, John (OS/ASPR/SPPR)" <John.Redd@hhs.gov>, "Hassell, David (Chris) (OS/ASPR/IO)" <David.Hassell@hhs.gov>, "Hamel, Joseph (OS/ASPR/IO)" <Joseph.Hamel@hhs.gov>, "Dean, Charity A@CDPH" <Charity.Dean@cdph.ca.gov>, "Lawler, James V" <james.lawler@unmc.edu>, "Borio, Luciana" <LBorio@iqt.org>, Dan Hanfling <DHanfling@iqt.org>, "eric.mcdonald@sdcounty.ca.gov" <eric.mcdonald@sdcounty.ca.gov>, "Wade, David" <david.wade@hq.dhs.gov>, "TARANTINO, DAVID A" <david.a.tarantino@cbp.dhs.gov>, "WILKINSON, THOMAS" <THOMAS.WILKINSON@hq.dhs.gov>, "david.gruber@dshs.texas.gov" <david.gruber@dshs.texas.gov>, "KAUSHIK, SANGEETA" <sangeeta.kaushik@hq.dhs.gov>, Nathaniel Hupert <nah2005@med.cornell.edu>, "Lee, Scott" <Scott.Lee@hhs.gov>, "Padget, Larry G" <PadgetLG@state.gov>, Ryan Morhard <Ryan.Morhard@weforum.org>, "Stack, Steven J (CHFS DPH)" <steven.stack@ky.gov>, "Adams, Jerome (HHS/OASH)" <Jerome.Adams@hhs.gov>, "Fantinato, Jessica - OHS, Washington, DC" <jessica.fantinato@usda.gov>, "Colby, Michelle - OHS, Washington, DC" <michelle.colby@usda.gov>
> > **Subject:** RE: Red Dawn Breaking Bad, Start Feb 24
> >
> > Non-UNMC email
> >
> > A couple updates. Noticed that CDC increased the number of confirmed cases of Americans n the US from the cruise ship from 42 to 44.
> >
> > Looked at ILI for NYC and TX. ILI is trending down. Only odd thing I noticed besides the Kaiser Northern California ILI data on hospitalizations and the data from Chicago below (the ER ESSENCE data %of ER visits for ILI).Instead of falling, it actually increased slightly.
> >
> > <image001.png>
> >
> > <image002.png>
> >
> > National ILI data shows it trending down (down to 5.5%).
> >
> > <image003.gif>
> >
> > Sent from Mail [go.microsoft.com] for Windows 10
> >
> > ---

From: Carter Mecher
Sent: Friday, February 28, 2020 11:52 AM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans VetPop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%
70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	**100%**	**3,672**	**100%**	**19,209,704**	**100%**

The Veteran population is similar to the cruise population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the crew ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported to be in serious condition (5%).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	**VHA Total**
Operating Beds Hospital	15,744
Operating Beds Medicine/Surgery	9,817
Operating Beds ICU	1,692
ADC Hospital	9,805
ADC Medicine/Surgery	6,225
ADC ICU	1,101
ADC On a Ventilator	240
Daily Hospital Admissions	1,641
Daily Admissions Medicine/Surgery	1,226
Daily Admissions/Transfers in ICU	389
Emergency Department Care	
Daily ER Visits	6,874
Outpatient Care (non-ER)	
Daily Clinic Visits	209,336

Annually, VA has:

- 450,000 acute (medical/surgical) admissions
- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who use VA services), we can assume that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 63,000 ICU admissions.

Over an average 3 month period, VA would have ~625,000 ER/Urgent care visits, 112,000 acute care admissions, and 35,000 ICU admissions.

Now you understand the challenge.

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tested
11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		1,219 tested; 73 asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,723 tested; 19 seriously ill
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,066 tested; 28 seriously ill; 322 asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,894 tested; 35 seriously ill; 380 asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

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Subject: RE: Red Dawn Breaking Bad, Start Feb 24

I think this data is close enough to convince people that this is going to be bad and we will need to pull the full array of Nis (TLC). All that is left is when (timing).

I went back to our comparison of Philadelphia and St. Louis in 1918. The difference between Philadelphia and St. Louis in terms when they pulled the trigger on NPIs was about two weeks during the course of their individual outbreaks.

In St. Louis, NPIs were put in place 1 week after the first cases at Jefferson Barracks, 5 days after the first death, and 3 days after the first civilian cases in St. Louis. In Philadelphia, NPIs were put in place 3 weeks after the first cases at the Navy Yard, 16 days after the first civilian cases in Philadelphia, 2 weeks after the first death. In the cases of NPIs, timing matters.

We would estimate that the outbreak in Wuhan had about a 2 week head start on the rest of Hubei. So the measures China implemented to slow transmission happened about two later in the course of the outbreak in Wuhan compared to the rest of Hubei Province. That comparison looks a lot like Philadelphia and St. Louis.

So we have a relatively narrow window and we are flying blind.

Looks like Italy missed it.

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Subject: RE: Red Dawn Breaking Bad, Start Feb 24

This might be of interest. A comparison I ran of the distribution of the US population by age group compared to the passengers and crew aboard the Diamond Princess (surprised nobody ever did this). Except for kids, the cruise ship data tells a lot about adults (really shifted toward the 60-80 year old group).

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution
0-9 years	40,243,098	12%	16	0%
10-19 years	41,910,114	13%	23	1%
20-29 years	45,489,095	14%	347	9%
30-39 years	43,204,209	13%	428	12%
40-49 years	40,617,231	12%	334	9%
50-59 years	43,409,050	13%	398	11%
60-69 years	36,824,083	11%	923	25%
70-79 years	21,588,326	7%	1,015	27%
>80 years	12,433,972	4%	227	6%
Total population	**325,719,178**	**100%**	**3,711**	**100%**

Here is how the distributions compare when I only look at age≥20 (essentially adults)

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution
20-29 years	45,489,095	19%	347	9%
30-39 years	43,204,209	18%	428	12%
40-49 years	40,617,231	17%	334	9%
50-59 years	43,409,050	18%	398	11%
60-69 years	36,824,083	15%	923	25%
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>80 years	12,433,972	5%	227	6%
Total population	243,565,966	**100%**	**3,672**	**100%**

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Sent: Friday, February 28, 2020 8:39 AM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Updated tables

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tested
11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		1,219 tested; 73 asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,723 tested; 19 seriously ill
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,066 tested; 28 seriously ill; 322 asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,894 tested; 35 seriously ill; 380 asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 deaths reported in Japan	751	6	

Country	Passengers/Crew	Cases Hospitalized in Japan	Cases Confirmed upon Repatriation	Total Confirmed Cases	ICU Admissions	Deaths	% Infected
US	434	44	42	86			20%
Hong Kong	364	55	4	59			16%
Canada	256	47		47			18%
Australia	241	47	8	55			23%
UK	78	6	4	10		1	13%
Italy	35						
South Korea	14						
Israel	11	3	2	5			45%
Japan						5	
Subtotal	1,433	202	60	262			
Total	**3,711**	**691**	**60**	**751**		**6**	**20%**

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher
Sent: Friday, February 28, 2020 8:21 AM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Japan just announce a sixth passenger on the cruise ship has died (British passenger).

So 6/751 = 0.8% CFR This is now the new lower limit of CFR.

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From: Carter Mecher
Sent: Friday, February 28, 2020 5:20 AM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Japan announced fifth death of Diamond Princess passenger (70 year old woman). CFR for infected passengers is now 0.67% (this represents the lower limit of CFR). Below are the latest numbers I have (had to make a correction when I learned that the 705 total cases reported by Japan also included the 14 confirmed cases in Americans who were evacuated but not the cases that have appeared in the remaining citizens from the US (28), Australia (8), Hong Kong (4), UK (4), and Israel (2) after they were evacuated.

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Total	**3,711**	**691**	**60**	**751**			**20%**

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From: Carter Mecher
Sent: Thursday, February 27, 2020 11:09 PM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Watching for ILI data for Chicago, NYC, CA, and TX (covering most of the Tier 1 UASI cities that encompass ~25% of the US population). CA posted Week 8 data tonight (others should be available tomorrow).

Here is the CA report

https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/Immunization/Week2019-2008_FINALReport.pdf [cdph.ca.gov]

Flu activity is decreasing, so watching for anything unusual in the decline in ILI (something displacing flu). Data from Kaiser Northern California is interesting that percent P&I admissions going up with decreasing flu activity. Charity, does Kaiser also follow P&I for outpatient clinics?

Week 7

Week 8

Week 7

Week 8

Sent from Mail [go.microsoft.com] for Windows 10

From: Tracey McNamara
Sent: Thursday, February 27, 2020 10:12 PM
To: Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee; Carter Mecher
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Have you seen this? Israel claims they will have an oral vaccine in 3 weeks

Tracey

https://www.jpost.com/HEALTH-SCIENCE/Israeli-scientists-In-three-weeks-we-will-have-coronavirus-vaccine-619101 [jpost.com]

From: Baric, Ralph S <rbaric@email.unc.edu>
Sent: Thursday, February 27, 2020 6:55 PM
To: Caneva, Duane <duane.caneva@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Dr. Eva K Lee <evalee-gatech@pm.me>; Carter Mecher <cmecher@charter.net>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Tom Bossert <tom.bossert@me.com>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Fantinato, Jessica - OHS, Washington, DC <jessica.fantinato@usda.gov>; Colby, Michelle - OHS, Washington, DC <michelle.colby@usda.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

A comment: Pangolins are not the animal reservoir. Pangolin -CoV-2020 virus is only 90% identical to SARS-CoV2 while SARS-CoV-2 and bat-CoV-RaTG13 is 96% identical. The paper concludes its not a reservoir…"Although this present study does not support pangolins would be an intermediate host for the emergence of the 2019-nCoV……" at this moment, the most likely origins are bats, and I note that it is a mistake to assume that an intermediate species is needed. ralph

---

From: Caneva, Duane <duane.caneva@hq.dhs.gov>
Sent: Thursday, February 27, 2020 4:20 PM
To: Richard Hatchett <richard.hatchett@cepi.net>; Dr. Eva K Lee <evalee-gatech@pm.me>; Carter Mecher <cmecher@charter.net>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Tom Bossert <tom.bossert@me.com>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; Baric, Ralph S <rbaric@email.unc.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Fantinato, Jessica - OHS, Washington, DC <jessica.fantinato@usda.gov>; Colby, Michelle - OHS, Washington, DC <michelle.colby@usda.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Updated Master Question List.

Best,

Duane

From: Caneva, Duane
Sent: Thursday, February 27, 2020 4:15 PM
To: Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Additional information sources:

Forwarding information from one of our BAH team members, Sumiko Mekaru, PhD, who has been working with colleagues at Harvard/BCH, Oxford, and Northeastern to develop a centralized repository of individual-level information on patients with laboratory-confirmed COVID-19 to include a map/data explorer visualization tool. This information is publicly available with credit to be given to the Open COVID-19 Data Curation Group on any publications/communications. Please feel free to disseminate further to anyone interested. If you have any questions, feel free to reach out. Thank you!

Map/Data Explorer: https://scarpino.shinyapps.io/Emergent_Epidemics_Lab_nCoV2019/ [scarpino.shinyapps.io]

Link to Linelist: https://docs.google.com/spreadsheets/d/1itaohdPiAeniCXNlntNztZ_oRvjh0HsGuJXUJWET008/edit#gid=0 [docs.google.com]

Twitter Update Notifications: https://twitter.com/svscarpino/status/1230330483319484417 [twitter.com], https://twitter.com/MOUGK [twitter.com]

Summary (https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30119-5/fulltext [thelancet.com])

- Coronavirus disease 2019 (COVID-19) is spreading rapidly across China, and as of Feb 16, 2020, had been reported in 26 countries globally. The availability of accurate and robust epidemiological, clinical, and laboratory data early in an epidemic is important to guide public health decision-making.1

- Consistent recording of epidemiological information is important to understand transmissibility, risk of geographic spread, routes of transmission, and risk factors for infection, and to provide the baseline for epidemiological modelling that can inform planning of response and containment efforts to reduce the burden of disease. Furthermore, detailed information provided in real time is crucial for deciding where to prioritise surveillance.
- Line list data are rarely available openly in real time during outbreaks. However, they enable a multiplicity of analyses to be undertaken by different groups, using various models and assumptions, which can help build consensus on robust inference. Parallels exist between this and the open sharing of genomic data.2

- We have built a centralised repository of individual-level information on patients with laboratory-confirmed COVID-19 (in China, confirmed by detection of virus nucleic acid at the City and Provincial Centers for Disease Control and Prevention), including their travel history, location (highest resolution available and corresponding latitude and longitude), symptoms, and reported onset dates, as well as confirmation dates and basic demographics. Information is collated from a variety of sources, including official reports from WHO, Ministries of Health, and Chinese local, provincial, and national health authorities. If additional data are available from reliable online reports, they are included. Data are available openly and are updated on a regular basis (around twice a day).

- We hope these data continue to be used to build evidence for planning, modelling, and epidemiological studies to better inform the public, policy makers, and international organizations and funders as to where and how to improve surveillance, response efforts, and delivery of resources, which are crucial factors in containing the COVID-19 epidemic.

- The epidemic is unfolding rapidly and reports are outdated quickly, so it will be necessary to build computational infrastructure that can handle the large expected increase in case reports. Data sharing will be vital to evaluate and maintain accurate reporting of cases during this outbreak.3

From: Richard Hatchett <richard.hatchett@cepi.net>
Sent: Thursday, February 27, 2020 1:29 PM
To: Dr. Eva K Lee <evalee-gatech@pm.me>; Carter Mecher <cmecher@charter.net>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Tom Bossert <tom.bossert@me.com>; Caneva, Duane <duane.caneva@hq.dhs.gov>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <herbert.wolfe@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey,

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Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Excellent editorial from Jeremy Farrar about the near-term funding requirement:

https://wellcome.ac.uk/news/global-institutions-must-act-urgently-and-decisively-tackle-covid-19 [wellcome.ac.uk]

UK Chief Medical Officer Chris Whitty providing forewarning that schools may need to close for as long as two months:

Chief medical officer: schools could shut for two months in event of pandemic

Chris Whitty has been speaking about measures to reduce risk in the event that coronavirus outbreak reaches pandemic proportions. While noting that such an outcome was just one possibility, he said that there could be a "social cost" if the virus intensifies seeing mass gatherings reduced and schools closed for more than two months.

He said:

One of the things that's really clear with this virus, much more so than flu, is that anything we do we're going to have to do for quite a long period of time, probably more than two months.

"The implications of that are non-trivial, so we need to think that through carefully.

"This is something we face as really quite a serious problem for society potentially if this goes out of control. It may not but if it does globally then we may have to face that."

Whitty also said that the UK would inevitably be affected in the event of a global epidemic.

If this becomes a global epidemic then the UK will get it, and if it does not become a global epidemic the UK is perfectly capable of containing and getting rid of individual cases leading to onward transmission.

"If it is something which is containable, the UK can contain it. If it is not containable, it will be non-containable everywhere and then it is coming our way."

https://www.theguardian.com/world/live/2020/feb/27/coronavirus-news-live-updates#block-5e57f5698f086a28115b3d8d [theguardian.com]

From: Dr. Eva K Lee <evalee-gatech@pm.me>
Sent: 27 February 2020 17:38
To: Carter Mecher <cmecher@charter.net>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Tom Bossert <tom.bossert@me.com>; Caneva, Duane <duane.caneva@hq.dhs.gov>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

All schools close in Hong Kong until mid April. They are quarantining a huge group of people entering from China, in separate apartment complex.

Colleagues in UK told me that their schools are on the verge of closing also.

evalee-gatech@pm.me

https://newton.isye.gatech.edu/DrLee/ [newton.isye.gatech.edu]

mobile: 404-432-6835

Sent with ProtonMail [protonmail.com] Secure Email.

------- Original Message -------

On Thursday, February 27, 2020 12:14 PM, Carter Mecher <cmecher@charter.net> wrote:

Japan

All schools told to be closed until April: https://www.japantimes.co.jp/news/20.../#.XlelKkNryik [japantimes.co.jp]

Prime Minister Abe at the government's headquarters opened shortly after 6:00 pm on March 27, and temporarily closed all elementary schools, junior high schools, and high schools nationwide from March 2 until spring break.

Prime Minister Abe noted that temporary closure of elementary and junior high schools has been taken in Hokkaido and Ichikawa City, Chiba Prefecture, and said, "Efforts have been made to prevent the spread of infection to children in each region. But the last couple of weeks is a very important time. "

He said, "First and foremost, put children's health and safety first, and prepare in advance for the risk of large-scale infection caused by many children and teachers gathering for long hours on a daily basis." He stated that all elementary schools, junior high schools, high schools and special needs schools should be closed temporarily until spring break

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Thursday, February 27, 2020 6:17 AM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

About time for Japan (was wondering what they were waiting for to pull this trigger)

Japan's Prime Minister Abe asks schools across the country to be closed from Monday to prevent the spread of coronavirus

Hope we are paying attention in the US and especially California.

Even NK is closing schools

North Korea postpones the opening of schools to prevent an outbreak of coronavirus

Add a few more countries to the list:

- Denmark
- Estonia
- Norway
- Romania

The outbreaks in Italy and Iran are much larger than many realize by evidence of the numbers of confirmed cases in international travelers from those areas. Cases in travelers from Italy have present in Israel, England, Denmark and Brazil. Need a pretty large outbreak for that to happen—much larger than the numbers reported.

Iran now reporting 245 cases and 26 deaths. Given the confirmed case in Canada of a traveler from Iran and the time from disease onset to death, this is already a well established and large outbreak in Iran.

Italy and Iran are about where Wuhan was 1 month ago. In a couple of weeks Wuhan was overwhelmed.

Here are some snippets re cases of travelers from Italy:

- Israel confirms 1 new case of coronavirus; an

Israeli citizen who recently came back from Italy

- 2 new cases confirmed in England, UK; one of them came back from Italy and the other from Tenerife, Spain
- Denmark's TV2 says one of its reporters has tested positive for coronavirus after going on holiday in northern Italy. He developed symptoms on Wednesday morning.
- The patient is a 61-year-old man in São Paulo. He was in northern Italy from February 9 until February 21.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Thursday, February 27, 2020 5:24 AM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Looked at the age specific data from the cruise ship (focusing on ages <20). Although the numbers are small, the prevalence of disease in school age kids (ages 10-19) is similar to the elderly.

What also caught my eye was the data for young adults (ages 20-49). Since this data is for the entire ship, I suspect that most in this age group are crew. Only 8% of this age group was confirmed to have infection. The total confirmed cases in this analysis was only 619 (we are now up to 744), so perhaps they have since caught up.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Thursday, February 27, 2020 5:00 AM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Details below on case in California. From the cruise ship data we would estimate there are 20-50 cases for each ICY admission (assuming ICU admissions in 2%-5% of cases). That ratio was for an aged population. Suspect that ratio might be higher for a general population. And given the time from disease onset to being on a ventilator for at least a week (since at least Feb 19 when the patient arrived at UC Davis), the outbreak has had a good head start. That would suggest we already have a significant outbreak and are well behind the curve. We are now well past the equivalent 5:45 moment at Mann Gulch. You can't outrun it. They need to be thinking NPIs locally (full TLC including school closure).

[I will send something I was looking at re the cruise ship data and kids.]

https://www.sacbee.com/news/local/article240682311.html [sacbee.com]

Latest: Coronavirus patient at UC Davis Medical Center since Feb. 19 wasn't tested for days

The Solano County resident who is the nation's first confirmed case of coronavirus from "exposure in the community" has been under the care of UC Davis Medical Center for a week [sacbee.com], according to an internal memo obtained Wednesday night by The Sacramento Bee.

Just before 10 p.m., the hospital published the memo that was sent to employees by UC Davis Health leaders earlier in the day [ucdavis.edu] and outlines the timeline of the patient's admission and disclosed that several employees who were exposed to the patient self-isolate at home "out of abundance of caution."

The patient, whom the U.S. Centers for Disease Control and Prevention confirmed has tested positive the COVID-19 strain, was moved to the Sacramento teaching hospital on Feb. 19, according to the memo sent to staffers by David Lubarsky, the head of the hospital and UC Davis Health's vice chancellor of human health services, and Brad Simmons, the health system's interim CEO.

The patient was transferred to the facility from another hospital, where a medical team had already put the patient on a ventilator.

"The individual is a resident of Solano County and is receiving medical care in Sacramento County. The individual had no known exposure to the virus through travel or close contact with a known infected individual," California Department of Public Health officials said in a news release.

Because physicians at the first hospital suspected the patient had a virus, they issued an order that health care workers should wear personal protective gear when with the patient to guard against exposure to droplets, said the memo, which was first reported by the Davis Enterprise newspaper [davisenterprise.com].

The UCD medical team used the proper infection protocols out of concern that the individual might have coronavirus, according to the memo, and upon the patient's admission, UCD physicians requested that public health officials perform a test to determine whether the person had COVID-19.

"We requested COVID-19 testing by the CDC, since neither Sacramento County nor CDPH is doing testing for coronavirus at this time," the memo says. "Since the patient did not fit the existing CDC criteria for COVID-19, a test was not immediately administered. UC Davis Health does not control the testing process."

On Sunday, the CDC ordered a coronavirus test on the patient, and UC Davis Health officials discovered Wednesday that the patient tested positive for the deadly respiratory illness that causes coughing, fever and shortness of breath. That prompted hospital officials to tell "a small number" of hospital workers to stay home and monitor themselves for possible infection.

"Just as when a health care worker has a small chance of exposure to other illnesses, such as TB or pertussis, we are following standard CDC protocols for determination of exposure and surveillance," the memo said. "So, out of an abundance of caution, in order to assure the health and safety of our employees, we are asking a small number of employees to stay home and monitor their temperature."

"We are handling this in the same way we manage other diseases that require airborne precautions and monitoring," the memo said, adding hospital officials are "in constant communication with the state health department and the CDC and Sacramento County Public Health about the optimal management of this patient and possible employee exposures."

UCD officials did not respond to The Bee's request for comment.

The memo ended: "We are dedicated to providing the best care possible for this patient and continuing to protect the health of our employees who care for them."

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 9:45 PM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Some updates.

Singapore and Hong Kong continue to hold the line.

Singapore (+2 case) 93 cases/0 deaths /7 in ICU (still 4 kids—none currently hospitalized/2 were asymptomatic

Hong Kong (+6) 91 cases/2 deaths/ 4 critical; 2 serious (1 kid age 16)

Japan 189 cases/3 deaths/13 serious

Explosive growth in South Korea, Italy, and Iran

South Korea 1,596 cases/13 deaths/13 serious; 5 critical

Italy 453 cases/12 deaths

Iran 139 cases/19 deaths

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 9:29 PM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Update Hubei & Wuhan Hospitalizations per 100,000. Hubei curve is plateauing.

	Hubei 2019-nCoV Confirmed Hospital Data							Hubei and Wuhan Cases & Hospitalization Rates				
Date	Total Current Inpatients	Mild Disease	Severely Ill	Critically Ill	Cum Discharges	Cum Deaths	Cum Inpatients	Hubei Cum cases	Wuhan Cases	Hubei Cum Hospitalization Rate per 100,000	Wuhan Cum Hospitalization Rate per 100,000	%Hubei Cases Hospitalized
1/14/20	6		6				6	41	41	0.01	0.5	
1/15/20	5		5			2	7	41	41	0.01	0.5	
1/16/20	5		5			2	7	45	45	0.01	0.5	
1/17/20	8		8			2	10	62	62	0.02	0.7	
1/18/20	136	100	33	3		3	139	121	121	0.2	1.4	
1/19/20	170	126	35	9		4	174	198	198	0.3	2.4	
1/20/20	239	176	51	12		7	246	270	258	0.4	3.1	
1/21/20						15		375	320	0.0	3.8	
1/22/20	399	304	71	24		17	416	444	390	0.7	4.7	
1/23/20	494	365	106	23	31	24	549	549	495	0.9	5.9	100%
1/24/20	658	472	129	57	32	39	729	729	572	1.2	6.8	100%
1/25/20	915		221		85	52	1,052	1,052	618	1.8	7.4	100%
1/26/20	1,645	1,013	563	69	44	76	1,423	1,423	698	2.4	8.3	100%
1/27/20	2,567	1,877	563	127	47	100	2,714	2,714	1,590	4.6	19.0	100%
1/28/20	3,349	2,450	671	228	80	125	3,554	3,554	1,905	6.1	22.8	100%
1/29/20	4,334	3,346	711	277	90	162	4,586	4,586	2,261	7.8	27.0	100%
1/30/20	5,486	4,392	804	290	116	204	5,806	5,806	2,639	9.9	31.5	100%
1/31/20	6,738	5,444	956	338	166	249	7,153	7,153	3,215	12.2	38.4	100%
2/1/20	8,565	7,003	1,118	444	215	294	9,074	9,074	4,109	15.5	49.1	100%
2/2/20	9,618	7,917	1,223	478	295	350	10,263	11,177	5,142	17.5	56.4	92%
2/3/20	10,990	8,857	1,557	576	396	414	11,800	13,522	6,384	20.2	66.6	87%
2/4/20	12,627	10,107	1,809	711	520	479	13,626	16,678	8,351	23.3	81.6	82%
2/5/20	14,314	11,230	2,328	756	633	549	15,496	19,665	10,117	26.5	95.3	79%
2/6/20	15,804	11,802	3,161	841	817	618	17,239	22,112	11,618	29.5	108.3	78%
2/7/20	19,835	14,640	4,188	1,007	1,113	699	21,647	24,953	13,603	37.0	141.1	87%
2/8/20	20,993	15,746	4,093	1,154	1,439	780	23,212	27,100	14,982	39.7	153.4	86%
2/9/20	22,160	16,655	4,269	1,236	1,795	871	24,826	29,631	16,902	42.4	169.3	84%
2/10/20	25,087	18,743	5,046	1,298	2,222	974	28,283	31,728	18,454	48.3	196.7	89%
2/11/20	26,121	18,880	5,724	1,517	2,639	1,068	29,828	31,728	18,454	51.0	207.4	94%
2/12/20	33,693	26,609	5,647	1,437	3,441	1,310	38,444	48,206	32,994	65.7	314.6	80%
2/13/20	36,719	27,081	7,953	1,685	4,131	1,426	42,276	51,986	35,991	72.3	349.9	81%
2/14/20	38,107	27,955	8,276	1,876	4,774	1,457	44,338	54,406	37,914	75.8	369.4	81%
2/15/20	39,447	29,051	8,439	1,957	5,623	1,596	46,666	56,249	39,462	79.8	391.4	83%
2/16/20	40,814	31,017	8,024	1,773	6,639	1,696	49,149	58,182	41,152	84.0	415.6	84%
2/17/20	41,957	30,987	9,117	1,853	7,862	1,789	51,608	59,989	42,752	88.2	439.7	86%
2/18/20	43,471	32,225	9,289	1,957	9,128	1,921	54,520	61,682	44,412	93.2	469.3	88%
2/19/20	43,745	32,567	9,128	2,050	10,337	2,029	56,111	62,013	45,027	95.9	487.0	90%
2/20/20	42,056	31,059	8,979	2,018	11,788	2,144	55,988	62,422	45,346	95.7	486.2	90%
2/21/20	41,036	30,144	8,400	2,492	13,557	2,250	56,843	63,454	45,660	97.2	489.0	90%
2/22/20	39,073	29,643	7,776	1,654	16,738	2,399	58,210	64,287	46,607	99.5	504.5	91%
2/23/20	37,896	29,221	7,090	1,585	18,854	2,563	59,313	64,786	47,071	101.4	515.2	92%
2/24/20	36,242	27,916	6,840	1,486	20,912	2,615	59,769	65,187	47,441	102.2	520.0	92%
2/25/20	34,978	26,994	6,581	1,403	23,200	2,641	60,819	65,596	47,824	104.0	530.1	93%

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From: Tracey McNamara

Sent: Wednesday, February 26, 2020 8:35 PM

To: Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Carter Mecher; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

FEB 26 2020

QIAGEN announces worldwide shipments of QIAstat-Dx test kits for SARS-CoV-2

• QIAstat-Dx Respiratory 2019-nCoV Panel rapidly differentiates novel coronavirus from 21 other pathogens implicated in serious respiratory syndromes

• Panel being tested at four hospitals in China after initial evaluation on clinical samples by a leading Paris hospital

• Adds to QIAGEN's portfolio of molecular testing solutions to aid in global public health emergency

Hilden, Germany, and Germantown, Maryland, February 26, 2020 – QIAGEN (NYSE: QGEN; Frankfurt Prime Standard: QIA) today announced it has shipped its newly developed QIAstat-Dx Respiratory Panel 2019-nCoV test kit to four hospitals in China for evaluation. The new kit detects the novel coronavirus SARS-CoV-2 and adds rapid Sample to Insight syndromic testing to QIAGEN's portfolio of molecular testing solutions in the public health emergency. QIAGEN is also in the process of shipping QIAstat-Dx testing kits to public health institutions in other regions, including Europe, South-East Asia, and the Middle East.

Since January QIAGEN has been providing instruments and consumables to support detection of the virus in China and other markets. Official protocols for SARS-CoV-2 detection include QIAGEN extraction kits, reagents and instruments for real-time polymerase chain reaction (RT-PCR) workflows. Customers also are deploying QIAsymphony modular instruments and NeuMoDx integrated PCR systems to automate higher-throughput processing of their laboratory-developed tests for SARS-CoV-2.

"Our dedicated task force has moved very fast to develop and make available the QIAstat-Dx respiratory panel with SARS-CoV-2 detection. We are partnering closely with authorities and customers around the world to bring rapid, accurate diagnosis to the fight against this deadly infectious disease," said Thierry Bernard, Interim CEO of QIAGEN and Senior Vice President, Head of the Molecular Diagnostics Business Area. "As we have in past health crises such as SARS and the swine flu, QIAGEN is working hard to deliver better, faster testing solutions for hospitals and public health institutions to aid in the effort to monitor and bring the outbreak under control. Our employees' extraordinary response embodies QIAGEN's core mission to make improvements in life possible."

The QIAstat-Dx system was introduced in Europe in 2018 as a CE-product and cleared by the Food and Drug Administration (FDA) in the United States in mid-2019. It enables fast, cost-effective and easy-to-use syndromic testing with novel Sample to Insight workflows. The system streamlines molecular testing from end to end. A technician simply loads a clinical sample (such as a swab) into a single-use QIAstat-Dx cartridge and places it in the analyzer. QIAGEN chemistries for sample processing and analysis are built in, and the QIAstat-Dx instrument delivers results in about one hour.

New QIAstat-Dx testing solution for SARS-CoV-2

The QIAstat-Dx Respiratory 2019-nCoV Panel is a new version of the existing QIAstat-Dx Respiratory Panel for differential analysis of 21 viral and bacterial pathogens in respiratory syndromes. Once the SARS-CoV-2 genome was sequenced in January, QIAGEN developed two highly sensitive assays to detect SARS-CoV-2 targeting Orb1ab and the E gene. The addition of these targets provides parallel tools for combined detection of the novel coronavirus with increased sensitivity.

The expanded QIAstat-Dx panel is currently being evaluated at the Bichat-Claude Bernard Hospital in Paris. "After more than a year of experience using the existing QIAstat-Dx Respiratory Panel to evaluate patients coming into our Emergency Department with respiratory syndromes, we are evaluating the new panel with SARS-CoV-2 against RT-PCR testing using WHO recommended protocols. The QIAstat-Dx solution can provide results in about one hour, with high sensitivity and specificity and minimal hands-on time for hospital or laboratory personnel," said Dr. Benoit Visseaux, Associate Professor of Virology at Bichat-Claude Bernard Hospital in Paris.

Amid the rapidly evolving response to the coronavirus outbreak, the regulatory status of the QIAstat-Dx Respiratory Panel will vary by location. QIAGEN will apply for emergency authorization for marketing of the new panel from the U.S., the Korean KCDC/MFDS, and FDA and China's National Medical Products Administration (NMPA); the panel will be available with CE-IVD marking in Europe and other markets.

Multiple other QIAGEN testing solutions for SARS-CoV-2

QIAGEN has moved quickly on several fronts to provide molecular testing solutions to researchers working to counter the international threat from the SARS-CoV-2 virus. Building on its strong position and experience in molecular testing for infectious diseases, QIAGEN is providing a variety of solutions:

- Enabling laboratory-developed tests (LDTs) – extraction kits, PCR enzymes and instruments, supporting in-house testing by laboratories and public health institutions. CDC guidelines for RT-PCR testing list QIAGEN's EZ1 DSP Virus kits, which run on EZ1 Advanced workstations, and QIAamp DSP Viral RNA Mini kits, which can be automated on QIAcube instruments. Chinese authorities and the Berlin Charitè protocol also include QIAGEN consumables.
- Mid- and high-throughput automation – QIAsymphony modular systems for sample preparation and PCR analysis, as well as NeuMoDx 96 and 288 systems for fully integrated PCR analysis, enabling customers to implement higher-throughput solutions for laboratory-developed RT-PCR tests. QIAGEN recently started placing NeuMoDx systems in China, for use in with LDTs in SARS-CoV-2 testing.
- Additional real-time PCR tests – two new RT-PCR tests for detection of SARS-CoV-2 have been developed at QIAGEN sites in China and the United States and will be available for Research Use Only. The company is investigating potential emergency use options for the automated PCR-based test solutions.

Further information can be also found here [corporate.qiagen.com]

About QIAGEN

QIAGEN N.V., a Netherlands-based holding company, is the leading global provider of Sample to Insight solutions that enable customers to gain valuable molecular insights from samples containing the building blocks of life. Our sample technologies isolate and process DNA, RNA and proteins from blood, tissue and other materials. Assay technologies make these biomolecules visible and ready for analysis. Bioinformatics software and knowledge bases interpret data to report relevant, actionable insights. Automation solutions tie these together in seamless and cost-effective workflows. QIAGEN provides solutions to more than 500,000 customers around the world in Molecular Diagnostics (human healthcare) and Life Sciences (academia, pharma R&D and industrial applications, primarily forensics). As of December 31, 2019, QIAGEN employed approximately 5,100 people in over 35 locations worldwide. Further information can be found athttp://www.qiagen.com [qiagen.com].

From: Richard Hatchett <richard.hatchett@cepi.net>

Sent: Wednesday, February 26, 2020 3:34 PM

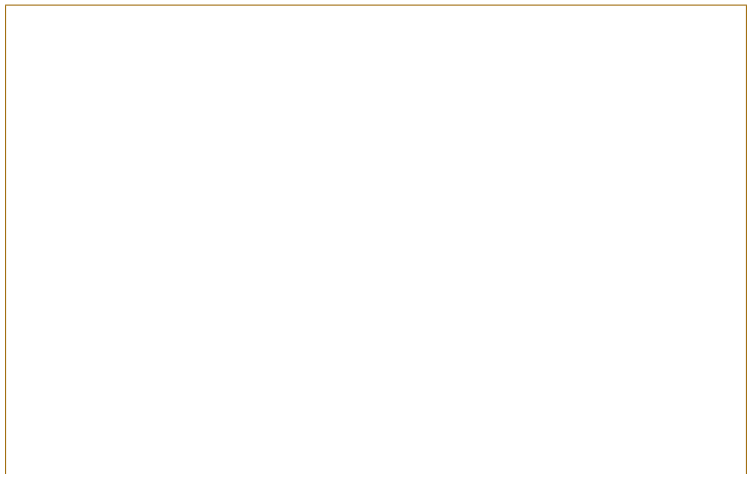
To: Tom Bossert <tom.bossert@me.com>

Cc: Caneva, Duane <duane.caneva@hq.dhs.gov>; Carter Mecher <cmecher@charter.net>; Dr. Eva K Lee <evalee-gatech@pm.me>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>

Subject: Re: Red Dawn Breaking Bad, Start Feb 24

Bob K live in the White House Briefing Room now - live feed on WaPo site -

Sent from my iPhone

> On 26 Feb 2020, at 23:08, Tom Bossert <tom.bossert@me.com> wrote:
>
> Why are CDC numbers (on their website) so low? E.g., 14,000 deaths.
>
> -Tom
>
> > On Feb 26, 2020, at 5:56 PM, Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:
> >
> > Master Question List—things to think about, updated.
> >
> > Also,
> >
> > https://www.washingtonpost.com/health/2020/02/25/cdc-coronavirus-test/ [washingtonpost.com]
> >
> > ---
> >
> > **From:** Carter Mecher <cmecher@charter.net>
> >
> > **Sent:** Wednesday, February 26, 2020 3:14 PM
> >
> > **To: Subject:** RE: Red Dawn Breaking Bad, Start Feb 24
> >
> > 
> >
> > CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with

questions or concerns.

Updated cruise ship data including data we can find by country

Country	Passengers/Crew	Cases Hospitalized in Japan	Cases Confirmed upon Repatriation	Total Confirmed Cases	ICU Admissions	Deaths	% Infected
US	434	44	42	86			20%
Hong Kong	364	55	4	59			16%
Canada	256	47		47			18%
Australia	241	47	7	54			22%
UK	78	6	4	10			13%
Italy	35						
South Korea	14						
Israel	11	3	2	5			45%
Japan						4	
Subtotal	1,433	202	59	261			
Total	**3,711**			**744**			**20%**

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tested
11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		1,219 tested; 73 asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,723 tested; 19 seriously ill
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,066 tested; 28 seriously ill; 322 asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	744	4	3,894 tested; 35 seriously ill; 380 asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested	746	4	

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 1:46 PM

To: Richard Hatchett; Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan;

eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Number of cases from Diamond Princess cruise ship rises to 42 in US (plus 44 in Japan), for total of 86.

<image001.png>

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 12:34 PM

To: Richard Hatchett; Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

I found a treasure trove of information and analysis of the Diamond Princess cruise ship outbreak. Japan's National Institute of Infectious Diseases published a Field Briefing on Feb 21, 2020
https://www.niid.go.jp/niid/en/2019-ncov-e.html [niid.go.jp]

I took the material and built a slide deck.

Take a look.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 9:08 AM

To: Richard Hatchett; Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Things keep getting more complicated wrt the cruise ship outbreak. Another 45 patients (out of 813 passengers who let off the ship) have developed symptoms and will require testing.

TOKYO: Dozens of passengers allowed off a coronavirus-stricken ship have developed symptoms including fever and will be asked to take tests for the virus, Japan's health minister said Wednesday.

The news came as another death linked to the virus in Japan was reported and the government urged organisers of major events in the next fortnight to consider cancelling or downsizing them to help curb the spread of infections.

The government has contacted 813 former passengers of the Diamond Princess cruise ship and found "45 people had certain symptoms", Health Minister Katsunobu Kato told parliament.

"We asked all of them (who have symptoms) to see a doctor and to take tests."

Around 970 people were allowed off the boat last week after testing negative for the virus, but several have subsequently been diagnosed with the illness.

Japan has come under increasing pressure over its handling of the crisis on the vessel.

Those allowed off the ship after a 14-day quarantine were asked to stay inside, but no formal measures restricting

their movement were imposed.

Opposition lawmakers have blamed the government for failing to implement a fresh 14-day quarantine after the passengers left the cruise ship – as was required by countries that repatriated citizens from the boat.

Infections have also continued to rise inside Japan, and Prime Minister Shinzo Abe on Wednesday said hosting large events should be reconsidered.

“In light of the significant infection risks, we will ask that national sporting or cultural events that will attract large crowds be either cancelled, postponed or downsized for the next two weeks,” Abe told a cabinet task force meeting on the outbreak.

Concerts cancelled

After the announcement, Nippon Professional Baseball Organization said its unofficial spring games through March 15 would be held in empty stadiums, before the official season opens on March 20.

Some top Japanese musicians, including all-male group Exile and female trio Perfume cancelled concerts, while Tokyo Girls Collection fashion show on Saturday will be held with no audience, according to their organisers.

The virus has also forced professional football, rugby, golf, tennis and other sports to reschedule games or to hold their events with no fans in attendance.

The government has also asked state-operated museums and theatres to consider closing or cancelling shows.

The government has repeatedly said that the coming weeks will be critical in limiting the spread of the virus in Japan.

But its measures have been largely advisory, including recommending that people work from home or commute off-peak.

The recommendations come as the local government in northern Hokkaido announced in its latest update on the virus the death of a local resident, whose name, gender and age were not revealed.

The governor of Hokkaido, where at least 38 people have been diagnosed, said he was requesting local municipalities to close public schools for one week from Thursday.

In Tokyo meanwhile, the regional education board said public high schools may start classes late to spare students travelling on packed commuter trains.

Japan has seen at least 165 infections separate from the outbreak on the cruise ship.

The outbreak has raised fears that the Olympic Games to be hosted in Tokyo this summer could be cancelled, a possibility government officials and organisers have rejected.

“We have not thought about it. We have not heard about it. We have made inquiries, and we were told there is no such plan,” Tokyo 2020 CEO Toshiro Muto told reporters.

“Our basic thinking is to conduct the Olympics and Paralympics as planned. That’s our assumption.”

Sent from Mail [go.microsoft.com] for Windows 10

From: Richard Hatchett

Sent: Wednesday, February 26, 2020 9:01 AM

To: Carter Mecher; Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

https://www.theguardian.com/world/2020/feb/26/wuhan-nurses-plea-international-medics-help-fight-coronavirus [theguardian.com]

Moving description from the front lines of conditions in Wuhan . . . And a picture of what we will likely face soon . . .

From: Carter Mecher <cmecher@charter.net>

Sent: 26 February 2020 04:11

To: Caneva, Duane <duane.caneva@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Dr. Eva K Lee <evalee-gatech@pm.me>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA

<melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Watching ILI in a few key areas--NYC, Chicago, CA, and TX. Week 7 data (week ending Feb 15). Flu is now trending down. This data is a little old (now 10 days old). Week 8 data coming soon.

Chicago

NYC

CA

TX

Sent from Mail [go.microsoft.com] for Windows 10

From: Caneva, Duane

Sent: Tuesday, February 25, 2020 10:40 PM

To: Carter Mecher; Richard Hatchett; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

ASTHO sponsored meeting hosted by White House this evening. Good discussion and input from many state and local Public Health Official partners. We are all in this together, and preparedness and response slowly transitions to community mitigation efforts and the frontline boots on the ground.

Still only 14 cases *detected*.

Red Dawn Breaking…

From: Carter Mecher <cmecher@charter.net>

Sent:

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

and/or trust the sender. Contact your component SOC with questions or concerns.

https://www.sciencemag.org/news/2020/02/coronavirus-infections-keep-mounting-after-cruise-ship-fiasco-japan [sciencemag.org]

TOKYO—All but a handful of the passengers of the disease-stricken Diamond Princess cruise ship berthed in Yokohama have disembarked. But for Japan, the saga is far from over. Much of the crew remains on board, enduring another 14 days of quarantine—although this time under conditions that Japanese officials hope will prevent any additional infections.

But there has been another worrisome development: As of today, eight public servants who worked on the ship to support the quarantine have tested positive for COVID-19, and more may follow. Most of the roughly 90 health ministry employees who visited the ship during the first 2-week quarantine that ended on 19 February initially returned to their normal work duties, but in light of the infections, the health ministry yesterday revised its policy and now those potentially exposed to the virus on the Diamond Princess are self-quarantining at home for 14 days, according to a ministry official who asked not to be identified.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Tuesday, February 25, 2020 7:41 PM

To: Richard Hatchett; Dr. Eva K Lee

Cc: Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Some updates. Will send the Hubei/Wuhan update later.

Singapore and Hong Kong continue to hold the line. I attached the case studies we did to monitor when they pulled the trigger in NPIs—lessons for us and for others.

Singapore (+1 case) 91 cases/0 deaths /7 in ICU (still 4 kids—none currently hospitalized/2 were asymptomatic

Hong Kong (+4) 85 cases/2 deaths/ 4 critical; 2 serious (still no kids reported)

Japan 170 cases/1 death/7 serious

Explosive growth in South Korea, Italy, and Iran

South Korea 977 cases/11 deaths/6 critical

99 out of 102 people in the psychiatric department of a hospital in South Korea tested positive for coronavirus infection.

https://www.bloomberg.com/news/articles/2020-02-22/nearly-all-patients-in-south-korean-psychiatric-ward-have-virus [bloomberg.com]

Yesterday, the Korean government raised the alert level from Orange(Level 3) to Red (Level 4) in order to prepare for a possible nation-wide transmission. It was a proactive decision taking into consideration the pattern and speed of transmission.

Italy 322 cases/11 deaths/114 in hospital; 35 in ICU

Public events in Veneto and Lombardy are banned - All schools in Lombardy and Veneto will be closed - Venice Carnival will be shut down, shows canceled at Milan La Scala

Iran 95 cases/16 deaths

Bahrain 23 cases/0 deaths

Bahrain closes all kindergartens, schools, universities, and training centers in the country for at least 2 weeks to prevent the spread of coronavirus

New countries today

- Algeria
- Austria
- Croatia
- Switzerland

Sent from Mail [go.microsoft.com] for Windows 10

From: Richard Hatchett

Sent: Tuesday, February 25, 2020 5:47 PM

To: Dr. Eva K Lee

Cc: Carter Mecher; Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard

Subject: Re: Red Dawn Breaking Bad, Start Feb 24

Big news today from China is the continued drop in new cases (down to just over 500 today) and the number of provinces (>20) with no new cases at all. It remains to be seen if China can hold the line but its interventions ARE working to reduce transmission dramatically and Carter is right that Singapore and Hong Kong are demonstrating the value of an early, rapid, aggressive response. Whether the rest of the world, and the U.S., can mount a similarly effective response I do not know, but China has shown what can be done with NPIs.

+ Ryan Morhard from WEF. Welcome Ryan -

Sent from my iPhone

> On 25 Feb 2020, at 18:14, Dr. Eva K Lee <evalee-gatech@pm.me> wrote:
>
> It is unclear if S. Korea will be able to setup so many temp. beds as China. They're very slow in picking up social distancing and social awareness, proper NPI. Iran is way behind in terms of medical care. I fear they will have very high mortality.
>
> evalee-gatech@pm.me
>
> https://newton.isye.gatech.edu/DrLee/ [newton.isye.gatech.edu]
>
> mobile: 404-432-6835
>
> Sent with ProtonMail [protonmail.com] Secure Email.
>
> ------- Original Message -------
>
> On Tuesday, February 25, 2020 11:34 AM, Carter Mecher <cmecher@charter.net> wrote:
>
> > South Korea now has 977 cases and 10 deaths. They are about where Wuhan was on January 25th (so about 1 month behind). Wuhan was overwhelmed less than 2 weeks later. I would expect the same for South Korea with the epicenter being in Seoul.
> >
> > I think Iran is about at the same point (maybe even a little ahead) of South Korea. Tehran is another very large city that will likely becomes its epicenter.

I see a few hopeful signs. Singapore and Hong Kong have done a great job thus far and have implemented NPIs very early. Both have great surveillance. They are holding the line. They are also small and islands. Japan on the other hand is struggling and hasn't been as aggressive as Singapore and Hong Kong.

The other thing that gives me hope is what I see in Hubei and Wuhan. I realize the data is a little sketchy because China has gone back and forth with the definition of cases, but I tried to smooth that over by looking at cumulative hospitalization rates per 100,000 (like we do for flu). Hubei (and Wuhan is a city within Hubei) reports each day the current number of people in the hospital (# currently in severe condition, # in critical condition), cumulative number of hospital discharges, cumulative deaths, and cumulative cases. From this we can estimate cumulative hospitalizations and then rates. 92% of the cases have been hospitalized (up thru Feb 2nd 100% of the cases they reported were hospitalized). Knowing the number of cases in Wuhan, we have been estimating the number hospitalized assuming a similar % of the cases requiring hospitalization rate for Wuhan (that 92% of the cases are being hospitalized—that number is adjusted each day based on current data). So we really can't back out the Wuhan numbers from the Hubei numbers. The best we can do is compare Hubei totals (including Wuhan) with an estimate of Wuhan. This data is good enough to show that the Chinese appear to be slowing transmission outside of Wuhan (They were late to implement NPIs in Wuhan but were able to implement NPIs earlier in the epidemic outside of Wuhan because the outbreak had about a 2 week head-start in Wuhan).

<E0B38B2300CE43F09DC37BFDDDB81F3C.png>

We need to emulate the blue curve. If I could subtract Wuhan, this curve would be significantly lower.

Remember the goals of NPIs.

<CB432B1C32644B219725D229547BEDDC.png>

Sent from Mail [go.microsoft.com] for Windows 10

From: Richard Hatchett

Sent: Tuesday, February 25, 2020 10:30 AM

To: Carter Mecher; Dr. Eva K Lee

Cc: Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Death #4 from Diamond Princess.

https://twitter.com/BNODesk/status/1232124151789477889 [twitter.com]

From: Carter Mecher <cmecher@charter.net>

Sent: 25 February 2020 14:10

To: Dr. Eva K Lee <evalee-gatech@pm.me>

Cc: Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; cameron.hamilton@hq.dhs.gov; Richard Hatchett <richard.hatchett@cepi.net>; Caneva, Duane <duane.caneva@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu;

Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <David.Wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

We should plan assuming we won't have enough PPE—so need to change the battlefield and how we envision or even define the front lines. The frontlines for mild illness need to pivot from our usual way of dealing with ILI in our clinics and ERs to non-face-to-face alternatives for the delivery of care (by phone/telehealth/home care). It means we need to shrink the problem and think of COVID patients in two groups: (1) those with mild enough disease that they can be managed thru self-care in the home; and (2) those will more severe disease that cannot be managed at home and likely require hospitalization. The first group needs to be managed by phone/telehealth with "prescriptions" for home isolation qD X 14 days (no refills) and home isolation for household members qD X 14 days (refills allowed). And only the second group should be coming to our ERs. It is why we need to look broadly at our healthcare system (even including minute clinics at CVS/Walgreens and stand alone urgent care centers). We need to start introducing this now.

Sent from Mail [go.microsoft.com] for Windows 10

From: Dr. Eva K Lee

Sent: Tuesday, February 25, 2020 8:47 AM

To: Carter Mecher

Cc: Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

This is extremely troubling that healthcare workers, including medical leaders are contracting the COVID-19 while caring for the infected. I am very worried about the supply-chain regarding all the protective gears, medical supplies and everything that is needed to combat this disease. The demand is rising and there is no guarantee that we can continue with the supply since the supply-chain has been disrupted.

I do not know if we have enough resources to protect all frontline providers.

evalee-gatech@pm.me

https://newton.isye.gatech.edu/DrLee/ [newton.isye.gatech.edu]

mobile: 404-432-6835

Sent with ProtonMail [protonmail.com] Secure Email.

------- Original Message -------

On Tuesday, February 25, 2020 8:37 AM, Carter Mecher <cmecher@charter.net> wrote:

> For those who cannot access Twitter but can access YouTube, here is the video.
>
> https://www.youtube.com/watch?v=4AX4dbXIsSw [youtube.com]
>
> Imagine if something like this happened in the US with an equivalent national leader (watching him coughing during a press conference, rubbing

his nose, and wiping the sweat from his forehead, and leaning on the podium with one hand while someone else is speaking) and then learning afterwards that he is infected with COVID. That is what has happened in Iran.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Tuesday, February 25, 2020 8:01 AM

To: Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott

Cc: Padget, Larry G

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Modeling isolation and social distancing (not)

https://twitter.com/BNODesk/status/1232276183305400320 [twitter.com]

Imagine how widespread it must be to see this?

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Tuesday, February 25, 2020 7:20 AM

To: Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott

Cc: Padget, Larry G

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Just a word of caution. Here is what those numbers would mean. These are the projections using an attack rate of 30% (could send you the model in Excel and you can plug in whatever attack rate you like). I suspect that those CFRs are inflated because of case ascertainment issues (the actual denominator is much larger). The most recent background annual death data in the US (US Vital Statistics) is from 2017. It is useful to have those numbers of comparison.

I think those CFRs are on the high side., but don't have anything better to offer.

The best data we have for estimating CFR will be from the cruise ship, where we have a circumscribed population. That data is extremely valuable because the cruise ship had a crew of 1,045 (young and health) and 2,666 passengers (elderly). It will be important to look at each group separately. The data that I am aware of (all obtained thru open sources) is shared below this table).

		2017 All				

AGE	2017 Census	Cause Mortality per 100,00	Actual 2017 All Cause Deaths	CFR	Projected 2019-nCoV Deaths	Ratio Projected Deaths to 2017 All Cause Deaths
<1 year	3,853,472	567.0	22,335	0.0%	0	0.00
1-4 years	16,085,388	24.3	3,880	0.0%	0	0.00
5 to 9 years	20,304,238	11.6	2,354	0.0%	0	0.00
10 to 14 years	20,778,454	15.5	3,217	0.2%	12,467	3.88
15 to 19 years	21,131,660	51.5	10,886	0.2%	12,679	1.16
20 to 24 years	22,118,635	95.6	21,139	0.2%	13,271	0.63
25 to 29 years	23,370,460	121.0	28,276	0.2%	14,022	0.50
30 to 34 years	21,972,212	145.4	31,939	0.2%	13,183	0.41
35 to 39 years	21,231,997	173.8	36,901	0.2%	12,739	0.35
40 to 44 years	19,643,373	218.4	42,895	0.4%	23,572	0.55
45 to 49 years	20,973,858	313.2	65,698	0.4%	25,169	0.38
50 to 54 years	21,401,094	488.0	104,444	1.3%	83,464	0.80
55 to 59 years	22,007,956	736.5	162,098	1.3%	85,831	0.53
60 to 64 years	19,987,702	1,050.2	209,908	3.6%	215,867	1.03
65 to 69 years	16,836,381	1,473.5	248,087	3.6%	181,833	0.73
70 to 74 years	12,847,065	2,206.9	283,523	8.0%	308,330	1.09
75 to 79 years	8,741,261	3,517.8	307,498	8.0%	209,790	0.68
80 to 84 years	5,965,290	5,871.7	350,261	14.8%	264,859	0.76
85 years and over	6,468,682	13,573.6	878,035	14.8%	287,209	0.33
Total population	**325,719,178**	**863.8**	**2,813,503**	**1.8%**	**1,764,286**	**0.63**

Attack Rate	30%

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tested
11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		1,219 tested; 73 asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,723 tested; 19 seriously ill
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,066 tested; 28 seriously ill; 322 asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan	691	4	

Total passengers and crew:

691 cases (~50% asymptomatic) / 28 seriously ill (4%) / 4 deaths (a lagging measure)

So overall, a lower limit CFR of 0.6%--this includes the young healthy crew members and the elderly passengers.

Assuming the number of seriously ill approximates the % of cases requiring ICU care (4%) and the typical mortality rates for patients with pneumonia admitted to the ICU are 15%-50%, then CFR would be estimated to be0.6%-2% overall. The ICU data is sketchy (last data point I have is from Japan only on Feb 20). If someone has actual numbers of patients admitted to the ICU, just plug in and make your won estimate.

Americans:

Total Americans 434

- 329 evacuated
- 61 remained on board
- 44 in hospitals in Japan

80 cases (44 hospitalized in Japan/36 cases in US)

Media has only reported on a single American who was in the ICU in Japan (that is from Feb 11). There is nothing being reported in the media on current numbers of cases in ICU of Americans in the US or Japan. If anyone has that data (but cannot share it), would suggest you take that number divide it by the number of known American cases (80) to estimate a % of cases requiring ICU care. Multiply that number by 15%-50% to get a range of CFRs.

A while back I shared some estimates based upon the data from the cruise ship and compared to the 2005 HHS projections of a severe pandemic. Just to put those numbers in perspective. The 2005 estimates were that 30% of the population would become ill (30% attack rate); 11% of those who became ill would require hospitalization; 1.6% of those who became ill would require ICU care; and 2% of those who became ill would die.

We are in the ballpark.

Sent from Mail [go.microsoft.com] for Windows 10

From: Martin, Gregory J

Sent: Tuesday, February 25, 2020 6:04 AM

To: Walters, William; cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott; Carter Mecher

Cc: Padget, Larry G

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Wil,

This is what I've been using in our provider PowerPoint

Greg

Gregory J. Martin, MD

Chief, Tropical Medicine-Infectious Diseases

Bureau of Medical Services

US Department of State

2401 E St NW (SA-1)

Washington, DC 20522

BlackBerry while traveling: 202 230-0704

MartinGJ@state.gov

From: Walters, William <WaltersWA2@state.gov>

Sent: Tuesday, February 25, 2020 6:56 PM

To: cameron.hamilton@hq.dhs.gov; Richard Hatchett

<richard.hatchett@cepi.net>; Caneva, Duane <duane.caneva@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Martin, Gregory J <MartinGJ@state.gov>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <David.Wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee-gatech@pm.me>; Lee, Scott <Scott.Lee@hhs.gov>; Carter Mecher <cmecher@charter.net>

Subject: Re: Red Dawn Breaking Bad, Start Feb 24

Colleagues,

Does anyone have a case fatality rate projection broken down by age?

William A. Walters, M.D., MBA

Executive Director and

Managing Director for Operational Medicine

Bureau of Medical Services

U.S. Department of State

(703) 957-9493

walterswa2@state.gov

walterswa2@state.sgov.gov

wwalters@state.ic.gov

From: Carter Mecher <cmecher@charter.net>
Sent: Monday, February 24, 2020 4:58:53 PM
To: cameron.hamilton@hq.dhs.gov <cameron.hamilton@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Caneva, Duane <duane.caneva@hq.dhs.gov>; rjglassjr@gmail.com <rjglassjr@gmail.com>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; Walters, William <WaltersWA2@state.gov>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU <jwleduc@utmb.edu>; rbaric@email.unc.edu <rbaric@email.unc.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Martin, Gregory J <MartinGJ@state.gov>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov <eric.mcdonald@sdcounty.ca.gov>; Wade, David <David.Wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov <david.gruber@dshs.texas.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee-gatech@pm.me>; Lee, Scott <Scott.Lee@hhs.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Several new countries announced first confirmed cases

Afghanistan

Bahrain

Iraq

Kuwait

Oman

Sent from Mail [gcc01.safelinks.protection.outlook.com] for Windows 10

From: Carter Mecher

Sent: Monday, February 24, 2020 1:51 PM

To: cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; Walters, William (STATE.GOV); HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Martin, Gregory J (MartinGJ@state.gov); Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott (OS/ASPR/EMMO)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

The number of Americans confirmed positives from the cruise ship evacuated to the US was incorrect, it should have been 36

Sent from Mail [gcc01.safelinks.protection.outlook.com] for Windows 10

From: Richard Hatchett

Sent: Monday, February 24, 2020 1:28 PM

To: Carter Mecher; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; Walters, William (STATE.GOV); HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; cameron hamilton (hamiltoncd@state.gov); Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Martin, Gregory J (MartinGJ@state.gov); Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott (OS/ASPR/EMMO)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Interesting account from China –

https://www.huffpost.com/entry/coronavirus-covid19-life-china-precautions_n_5e4eaa73c5b6df1e8be3d4d7
[gcc01.safelinks.protection.outlook.com]

From: Carter Mecher <cmecher@charter.net>

Sent: 24 February 2020 18:18

To: Caneva, Duane <duane.caneva@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally

(OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; cameron hamilton (hamiltoncd@state.gov) <hamiltoncd@state.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Martin, Gregory J (MartinGJ@state.gov) <MartinGJ@state.gov>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee-gatech@pm.me>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Headlines:

Markets In Total Panic Mode As Coronavirus Cases Jump

"It's Total Panic" - Store-Shelves Empty As Virus-Spread Sparks Panic-Buying Food & Masks Across Italy

Sent from Mail [gcc01.safelinks.protection.outlook.com] for Windows 10

From: Carter Mecher

Sent: Monday, February 24, 2020 1:01 PM

To: Caneva, Duane; Richard Hatchett; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; Walters, William (STATE.GOV); HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; cameron hamilton (hamiltoncd@state.gov); Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Martin, Gregory J (MartinGJ@state.gov); Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott (OS/ASPR/EMMO)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

-Singapore +1 over the past 3 days (90 cases/0 deaths) 38 currently hospitalized, 7 in ICU

-Hong Kong now up to 81 cases/2 deaths

-South Korea continues to have explosive growth now up to 833 cases/7 deaths

-Japan is up to 156 cases/2 deaths

> **According to the Ministry of Health, Labor and Welfare, two new cases of infection have been confirmed on the 24th, including employees of the Ministry of Health, Labor and Welfare and quarantine officers who responded on a cruise ship. 7 staff members of the Ministry of Health, Labor and Welfare and quarantine officers have been confirmed +.**

-Italy has 227 cases/7 deaths

-Iran 61 cases/12 deaths

Sent from Mail [gcc01.safelinks.protection.outlook.com] for Windows 10

From: Caneva, Duane

Sent: Monday, February 24, 2020 12:30 PM

To: Richard Hatchett; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; Walters, William (STATE.GOV); HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; cameron hamilton (hamiltoncd@state.gov); Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Martin, Gregory J (MartinGJ@state.gov); Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Redd, John (OS/ASPR/SPPR); Carter Mecher; Yeskey, Kevin; Lee, Scott (OS/ASPR/EMMO)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Singapore COVID-19 Guidance Page:

https://www.gov.sg/article/covid-19-sector-specific-advisories [gcc01.safelinks.protection.outlook.com]

Best,

Duane

From: Caneva, Duane

Sent: Monday, February 24, 2020 12:28 PM

To: Subject: Red Dawn Breaking Bad, Start Feb 24

Importance: High

All,

This is a new Red Dawn Email String. Please use this one going forward.

Best,

Duane

Duane C. Caneva, MD, MS

Chief Medical Officer

Department of Homeland Security

202-254-6901 (o)

202-821-5374 (c)

Duane.Caneva@hq.dhs.gov

DCaneva@dhs.ic.gov

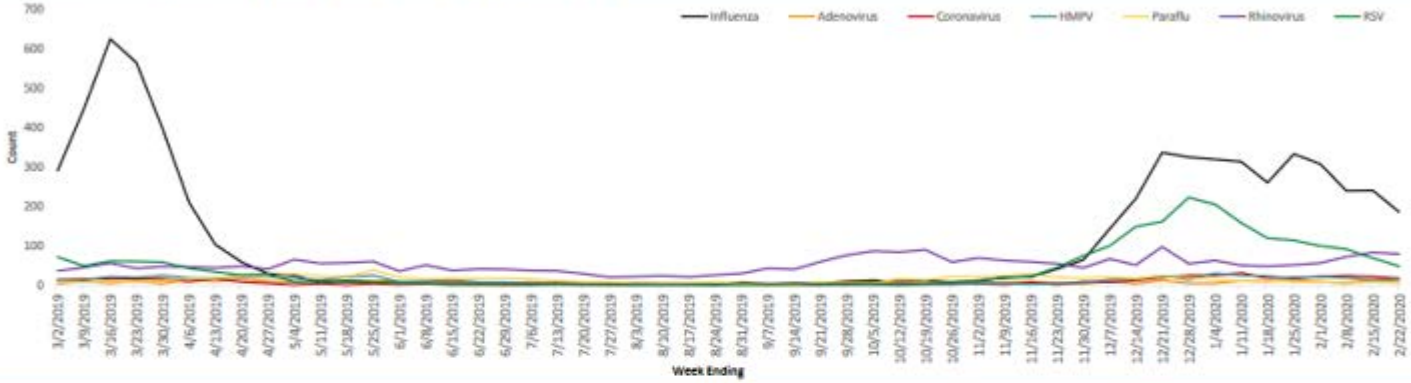
Executive Assistant: Nichole Burton,
nichole.burton2@associates.hq.dhs.gov, 202-254-8284

<2020_02_19_MQL_SARS-CoV-2_CLEARED FOR RELEASE.PDF>

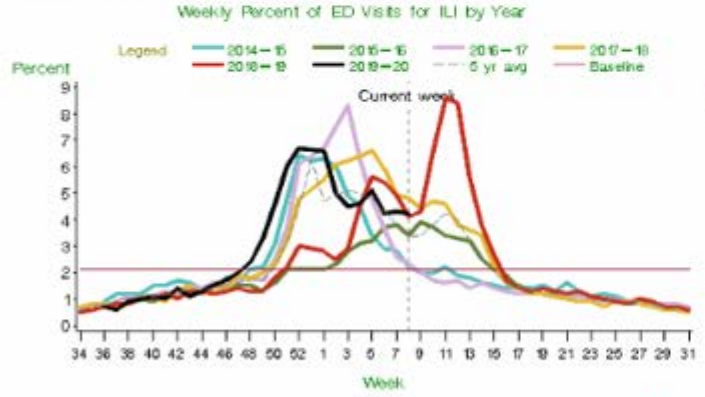
Public Health - Seattle & King County

Summary of Influenza Syndromic and Laboratory Surveillance

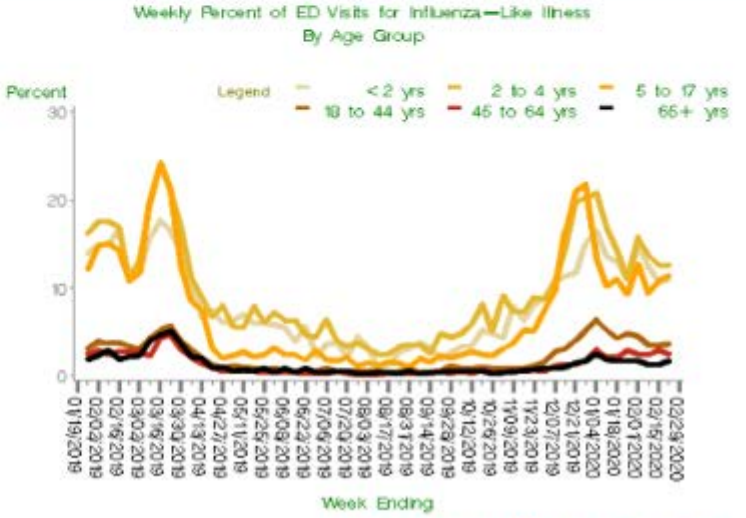
Influenza and other respiratory pathogens, PCR testing only (NREVSS)



King County syndromic surveillance



Note: The change from ICD–9 to ICD–10 codes in October 2015 may impact trends.
Last updated Feb 23, 2020 , 'current week' is week ending Feb 22, 2020
Baseline: Mean % ILI during non–flu weeks for previous three seasons, adding two standard deviations.
A non–flu week is a period of 2+ consecutive weeks where each one accounted for < 2% of the season's total number of specimens that tested positive for influenza by PCR.



ALLHOSPITALS, Last Updated Feb 26, 2020

From: Bauer, Brenda
To: Worsham, Dennis; Burkland, Anne; Schaeffer, Cyndi
Subject: FW: Tracking Coronavirus - Fred Hutchinson Cancer Research Center Updates
Date: Friday, February 28, 2020 3:10:41 PM
Attachments: image002.png
image004.png

You may want to pass on the real-time tracking tool by Fred Hutch, Dr. Bedford to our PH leaders if you think they don't know/would be interested. Brenda

---

From: Bauer, Brenda <Brenda.Bauer@kingcounty.gov>
Sent: Friday, February 28, 2020 3:07 PM
To: rbryant@fredhutch.org
Cc: Knight, Calli <CKnight@kingcounty.gov>
Subject: RE: Tracking Coronavirus - Fred Hutchinson Cancer Research Center Updates

Rebecca,
Thank you for engaging us; Calli's message was sent to me for response. At this point, the county is not tracking closures. As I'm sure you know, we don't currently have any active cases of COVID-19 in our county, although we are engaged in planning efforts and communication, primary through Seattle-King County Public Health. I will pass on your information about Dr. Bedford to our Public Health staff, and if as the situation evolves, we are seeing and tracking closures, we'll create an opportunity to share that information with health providers/the public. Our local health authorities are following federal and CDC guidance and communications on travel related considerations. I hope this is helpful. Brenda

Brenda Bauer | Deputy Chief Operating Officer | Executive Office, King County | 206-477-3580

From: Bryant, Rebecca M <rbryant@fredhutch.org>
Sent: Friday, February 28, 2020 1:54:43 PM
To: Knight, Calli <CKnight@kingcounty.gov>
Subject: Tracking Coronavirus - Fred Hutchinson Cancer Research Center Updates

Calli– I hope you are enjoying some of this beautiful sun!

The team here at Fred Hutch is working to track any local and regional government reactions to the coronavirus/ COVID-19, including school closures and employee travel bans. We are aware of the big stories like the closure of Bothell High School, and Amazon's decision to pause nonessential travel, but we also wanted to check in with you to see if you were tracking anything along these lines at the King County level. Understanding that the Executive is in contact with many local governments, schools and local businesses, we would ask that you also consider keeping us updated on anything that develops in terms of planning and possible closures of facilities in connection to the virus.

I also wanted to share some information that one of our lead data scientists, Dr. Treavor Bedford is doing here at Fred Hutch. as Dr. Bedford is a computational biologist who studies how viruses evolve and spread. Dr. Bedford is gaining insights about the virus that causes COVID-19 that he hopes will help save lives from this new viral respiratory illness.
As he has been analyzing the spreading virus, Bedford has been sharing what he's learned so far with the

public via media interviews, his team's open-source platform for real-time tracking of viral evolution — Nextstrain.org — and his Twitter feed (you can follow Bedford at @trvrb).

Thanks in advance for your work on this evolving situation, and please let us know if you come across anything you think Fred Hutch should be aware of moving forward.

Rebecca

Rebecca Bryant
Community Relations Manager
Fred Hutchinson Cancer Research Center
rbryant@fredhutch.org

Tracking the coronavirus epidemic from Wuhan to the world

Scientists and public health officials worldwide collaborate to understand COVID-19 and slow its spread

FEBRUARY 25, 2020 • BY SUSAN KEOWN / FRED HUTCH NEWS SERVICE

Editor's note: We've updated this story since its original publication on Jan. 31, and may make further updates as the situation progresses.

With more than 77,000 confirmed cases in China and more than 2,000 elsewhere in the world, according to the World Health Organization, the viral disease known as COVID-19 has killed more than 2,600 people, disrupted global travel and forced governments and other organizations to take extreme measures to limit its global spread, from evacuations to mass quarantines.

Outbreaks now are occurring in South Korea, Italy and Iran, heightening concern that travelers infected but not severely ill may be carrying the virus from affected regions and sparking new outbreaks at their destinations.

The Centers for Disease Control and Prevention is working to contain the novel coronavirus behind COVID-19 and preparing for its "not if but when" community spread within the U.S. The CDC is evaluating community control methods — building off its strategies to mitigate pandemic flu — and asking the nation to anticipate "severe" disruptions to daily life, said Dr. Nancy Messonnier, director of CDC's National Center for Immunization and Respiratory Diseases, in a Feb. 25 press call.

Meanwhile, scientists are racing to understand this new threat, including how the virus is evolving and passing from person to person, to inform ongoing public health efforts and vaccine development.

Among the scientists on the front lines of that research effort are infectious-disease experts at Fred Hutchinson Cancer Research Center, such as Dr. Trevor Bedford, a computational biologist who studies how viruses evolve and spread. Bedford is gaining

insights about the virus that causes COVID-19 (called SARS-CoV-2, and formerly known as 2019-nCoV) that he hopes will help save lives from this new viral respiratory illness.

As he has been analyzing the spreading virus, Bedford has been sharing what he's learned so far with the public via media interviews, his team's open-source platform for real-time tracking of viral evolution — Nextstrain.org — and his Twitter feed (follow Bedford at @trvrb).

COVID-19 questions and answers
The U.S. Centers for Disease Control and Prevention and the World Health Organization have up-to-date information and resources on a variety of questions related to the novel coronavirus, including:

- How to reduce risk of infection
- Symptoms
- What to do if you are sick with COVID-19
- Information for travelers to and from affected countries (including China, South Korea, Iran, Italy and Japan)
- How U.S. health officials are responding to the virus
- What doctors and health care workers need to know

On Feb. 13, Bedford told a gathering of international science reporters at the annual meeting of the American Association for the Advancement of Science in Seattle that his latest calculations show that by Feb. 8 as many as 200,000 people may have been infected, with about 15% of them experiencing severe symptoms.

An expert in building family trees of virus evolution, Bedford said that models that use genome sequencing to build family trees of the new virus are consistent with models developed by Imperial College London and others mapping the current scope of the outbreak. That model estimates that the case fatality of COVID-19 is about 1%. (Note that only a subset of infected people will be considered a "case.")

"The thing that is scary about this is that it does seem to be transmissible, and it does seem to be severe," he said.

Here are more highlights of what he and other experts have learned so far — and the critical questions they're still pursuing:

When did the virus emerge and how is it spreading?

Analyses by Bedford and others of the genetic sequences of some of the first human cases showed that the virus had remarkable lack of genetic diversity from person to person after it first emerged.

At first, there was not enough data to clarify what this meant — was the virus jumping repeatedly to humans from animals or, more dangerously, spreading rapidly between people after an initial jump from animals? "The DNA can't distinguish those two scenarios. Only epidemiological data or DNA from the reservoir animal can," Bedford told WIRED on Jan. 22. Figuring this out "would be the big epidemiological goal for everyone at the moment," he told the journal Nature the same week.

"If it's not contained shortly, I think we are looking at a pandemic," Bedford told STAT News on Jan. 27 — although he cautioned that it was impossible to say how serious one

would be.

This research by Bedford and other virus-trackers is possible because of rapid genetic sequencing of infected people — unfeasible or even impossible not too many years ago — and a global commitment to sharing these genetic data freely with the worldwide research community. As of Feb. 25, Nextstrain already had 119 novel coronavirus genomes.

Typically, scientists “don't really talk externally that much because you're trying to get your best science so it can't be scooped,” Bedford told the CBC, Canada’s national public broadcaster, on Feb. 1. “You only really talk about things once it's all been published. This is flipping that around entirely where people are just being completely open with what they know.”

He outlined the speed at which genomic information has been flowing:

“Basically, a week after registering that there’s this new thing, the amazing scientists in China have a genome for the novel virus that had never been seen before. Then, after the first genome was released on a Friday afternoon, we had five more Sunday morning. And now, nine days later, we’re up to 24,” Bedford explained on the public radio show Science Friday on Jan. 24. “That first genome has been amazing for people developing rapid tests to be able to actually confirm cases, and these subsequent genomes are being very useful to understand basic epidemiological questions.”

Because of the rapidly emerging nature of the disease, “adding a few key samples can change the story significantly,” Bedford told the journal Nature on Jan. 28.

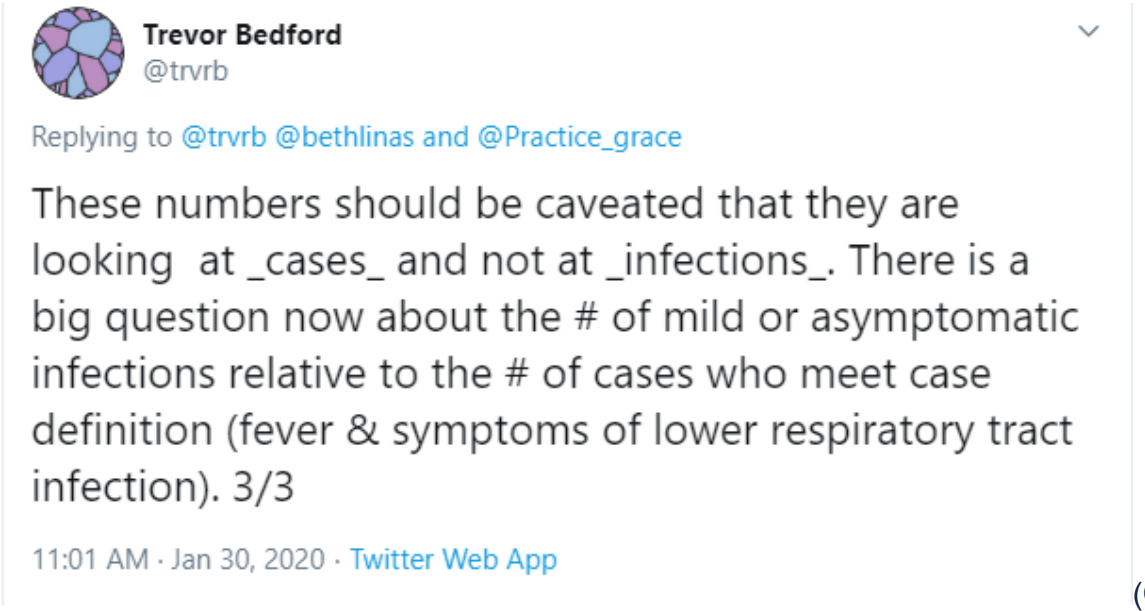
That is, in fact, what happened. With access to additional genetic sequences from more infected people, Bedford and Nextstrain teammates wrote on a report on their site on Jan. 30 that the disease’s low mutation rate is the result of person-to-person spread since its initial jump, or jumps, from unknown animals to people in November or early December 2019.

In their Jan. 30 report, the team also wrote:

- While the virus has started to pick up mutations as it spreads between people — as this type of virus naturally does — these mutations don’t appear to be linked with changes in the virus’ behavior.
- Although data are too preliminary for firm conclusions, the new virus appears to be less likely to kill those with confirmed cases than its coronavirus cousin, SARS.

In this Jan. 30 report on Nextstrain.org (click to view online), Bedford and teammates describe their latest data on the spread and evolution of SARS-CoV-2 across the world. The map shows the number and location of viral sequences they analyze from cases around the world as the virus traveled out of China.Genomic analysis of nCoV spread. Situation report 2020-01-30. Author: Trevor Bedford, Richard Neher, James Hadfield, Emma Hodcroft, Misja Ilcisin, Nicola Müller. https://nextstrain.org/narratives/ncov/sit-rep/2020-01-30
According to the WHO, the data so far suggest that it takes about five days (with estimates ranging from one to 14 days) to develop symptoms of COVID-19 after catching the virus.

Bedford wrote on Twitter on Jan. 30 that the key question at that point for understanding the disease's transmission is how many people get infected with the virus without getting diagnosable symptoms of the disease.



(Click to view on Twitter)
Based on estimates of the virus' spread through a community and the amount of time it

would take health officials to detect a cluster of cases, Bedford told the Washington Post on Feb. 21 he expected health officials to know by mid-March whether COVID-19 is becoming widespread enough to be classified as a pandemic.

This story in Science from Jan. 31 looks in depth at work by Bedford and other scientists to uncover the novel virus' origins by mapping coronavirus genomes.

Who is most at risk of COVID-19?

So far, people who have been coming down with the most severe cases of COVID-19 are almost always older people and people with underlying health conditions, according to the CDC's Jan. 30 media briefing.

Is there a vaccine or other treatment?

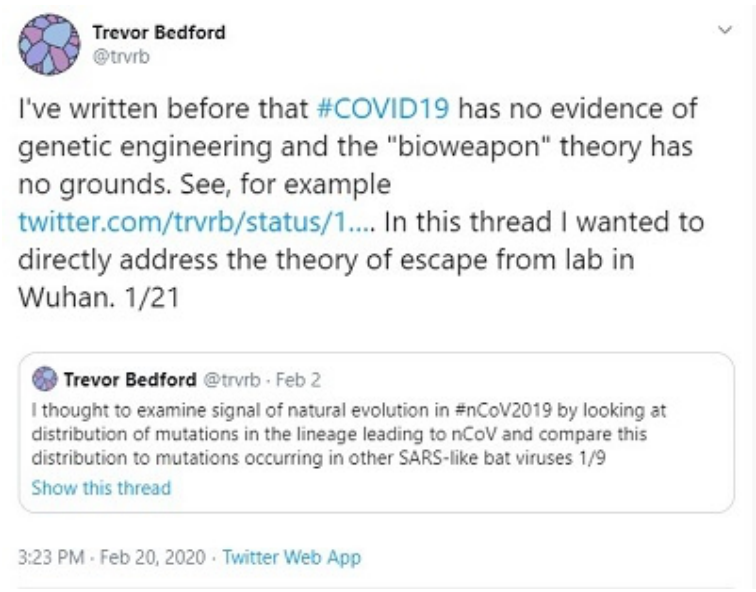
There is no available vaccine, but multiple research efforts are underway to develop candidates. The first of these experimental vaccines was shipped on Feb. 24 to National Institutes of Health researchers, who are expected to begin human testing in April, the Wall Street Journal reported.

Although there are no drugs specifically for the virus that causes COVID-19, the WHO advises that patients who are hospitalized with confirmed cases of infection be treated with therapies to overcome particular symptoms of illness.

Could the novel coronavirus have been genetically engineered in a lab?

At the AAAS annual meeting on Feb. 13, Bedford fielded a number of questions from the international press corps about stories circulating that the virus causing COVID-19 might have been genetically engineered. "If you look for evidence of genetic engineering, you can find none whatsoever. It is completely consistent with natural evolution," Bedford said.

In a Feb. 20 Twitter thread, Bedford summarized the evidence supporting a natural, rather than laboratory, origin for the virus:



(Click to read thread on Twitter)

Fred Hutch News Service writer Sabin Russell contributed reporting for this story.

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FRED HUTCH
CURES START HERE

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Trevor Bedford
@trvrb

Replying to @trvrb @bethlinas and @Practice_grace

These numbers should be caveated that they are looking at _cases_ and not at _infections_. There is a big question now about the # of mild or asymptomatic infections relative to the # of cases who meet case definition (fever & symptoms of lower respiratory tract infection). 3/3

11:01 AM · Jan 30, 2020 · Twitter Web App


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CURES START HERE

From: Solari, Nicholas
To: Kay, Meagan; Stein, Kate
Subject: FW: Washington State Department of Health Non-Pharmaceutical Intervention (NPI) Guidance version 1.0
Date: Thursday, February 27, 2020 4:14:02 PM
Attachments: NPI Guidance - Intervention Overview and Implementation v1.0.pdf
image001.png

Call info at very bottom

From: DOH-LOFR (DOH) <doh-lofr.imt@doh.wa.gov>
Sent: Thursday, February 27, 2020 2:00 PM
Cc: Turner, Susan (DOHi) <Susan.Turner@kitsappublichealth.org>; Larson, Mark (DOHi) <mark.larson@co.kittitas.wa.us>; Wood, Rachel, Dr (Lewis) (DOHi) <Rachel.Wood@lewiscountywa.gov>; Monteagudo, Ralph (DOHi) <montear@lhd3.org>; Stein, Daniel (DOHi) <DStein@co.mason.wa.us>; Artzis, Sam (DOHi) <sartzis@gmail.com>; McCarthy, John Dr (DOHi) <mccajf@uw.edu>; Edstam, James (DOHi) <jedstam@co.pacific.wa.us>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; James, Frank (DOHi) <frankejamesmd@mac.com>; Leibrand, Howard (DOHi) <howardl@co.skagit.wa.us>; Chen, Anthony L-T, MD, MPH (DOHi) <achen@tpchd.org>; Stern, Greg (DOHi) <gstern@whatcomcounty.us>; bowman@hotmail.com; Everson, Teresa (DOHi) <Teresa.Everson@clark.wa.gov>; Guse, Vicki (DOHi) <vickig@co.adams.wa.us>; Woodbury, Brady (DOHi) <bwoodbury@ac-hd.org>; Zaccaria, Jason (DOHi) <jasonz@bfhd.wa.gov>; Kling, Barry (DOHi) <barry.kling@cdhd.wa.gov>; Brastad, Andy (DOHi) <abrastad@co.clallam.wa.us>; Melnick, Alan (DOHi) <alan.melnick@clark.wa.gov>; Lanman, Martha (DOHi) <martha_lanman@co.columbia.wa.us>; placidoe@co.cowlitz.wa.us; mlanman@co.garfield.wa.us; Adkinson, Theresa (DOHi) <tadkinson@granthealth.org>; Holden, Karolyn (DOHi) <kholden@co.grays-harbor.wa.us>; Higman, Keith (DOHi) <keithh@co.island.wa.us>; Kirkpatrick, Vicki (DOHi) <VKirkpatrick@co.jefferson.wa.us>; Grellner, Keith (DOHi) <Keith.Grellner@kitsappublichealth.org>; Lamb, Tristen (DOHi) <tristen.lamb@co.kittitas.wa.us>; Kavanagh, David (DOHi) <davidk@klickitatcounty.org>; Anderson, J.P. (DOHi) <jp.anderson@lewiscountywa.gov>; Dzedzy, Ed (DOHi) <edzedzy@co.lincoln.wa.us>; Windom, David (DOHi) <DWindom@co.mason.wa.us>; Schanz, Matt (DOHi) <mschanz@netchd.org>; Jones, Lauri (DOHi) <ljones@co.okanogan.wa.us>; Oien-Lindstrom, Katie <koien@co.pacific.wa.us>; Hayes, Patty <Patty.Hayes@kingcounty.gov>; Tompkins, Mark / San Juan (DOHi) <markt@sanjuanco.com>; Johnson, Jennifer / Skagit Co (DOHi) <jenniferj@co.skagit.wa.us>; Richards, Kirby <richards@co.skamania.wa.us>; Adrian Dominguez <adriand@uihi.org>; info@uihi.org; Shipman, Lee (DOHi) <leshipman@shoalwaterbay-nsn.gov>; Zambrano, Lynda (DOHi) <blockwtch1@aol.com>; H Pickernell <hpickernell@chehalistribe.org>; mistysecena@chehalistribe.org; Walker, Denise (DOHi) <dwalker@chehalistribe.org>; Eaton, Meghan (DOHi) <meaton@chehalistribe.org>; Bray, Cal (DOHi) <cbray@chehalistribe.org>; kedwards@chehalistribe.org; rodney.cawston.cbc@colvilletribes.com; Ball, Alison (DOHi) <alison.ball@colvilletribes.com>; Cawston, Coleen (DOHi) <colleen.cawston@ihs.gov>; joseph.pakootas.lrc@colvilletribes.com; stacy.swan.lrc@colvilletribes.com; brian.nanamkin@ihs.gov; ryan.buckner@ihs.gov; del.ostenberg.ems@colvilletribes.com; randy.august2@colvilletribes.com; wiyall@cowlitz.org; Culbertson, Kay (DOHi) <kculbertson@cowlitz.org>; Kutz, Stephen (DOHi) <skutz.health@cowlitz.org>; smoyers.health@cowlitz.org; Tail, Elizabeth (DOHi) <Etail.health@cowlitz.org>; Eng, Frieda (DOHi) <feng.health@cowlitz.org>; Gomez, Dawn (DOHi) <dawn.gomez@hohtribe-nsn.org>; bob.smith@hohtribe-nsn.org; melvinjohn.ashue@hohtribe-nsn.org; tahnee.hudson@hohtribe-nsn.org; rosetta.hernandez@hohtribe-nsn.org;

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Subject: Washington State Department of Health Non-Pharmaceutical Intervention (NPI) Guidance version 1.0

Good afternoon all,

The Washington State Department of Health Non-Pharmaceutical Intervention (NPI) Guidance lists 13 Interventions to mitigate the spread of a contagious disease, such as a novel virus. It is part of the state's Communicable Disease and Pandemic Response plan and includes personal, community, and

environmental methods of control. Its purpose is to help public health officials, emergency management, and partners choose which mitigation strategies to implement to limit and prevent the spread of novel respiratory diseases of concern.

The interventions included are:

1. Increase handwashing and use of alcohol-based sanitizer
2. Respiratory hygiene and cough etiquette
3. Keep distance from others (> 6 feet)
4. Frequently clean and disinfect surfaces
5. Remain home during a respiratory illness
6. Voluntary isolation of sick persons
7. Voluntary quarantine of contacts of sick persons
8. Involuntary isolation of sick persons
9. Involuntary quarantine of contacts of sick persons
10. Order cancellation of major public and large private gatherings
11. Order closure of schools, child care facilities, workplaces, and public buildings
12. Prevent non-emergency travel outside of the home
13. Establish cordon sanitaire

You may download the full guidance document here: https://www.doh.wa.gov/Portals/1/Documents/1600/NPIGuidanceandImplementation.pdf. Please share with any pertinent partners that you feel would be appropriate. That said, please consider this document close hold.

We encourage you to take time to refresh yourself and your partners on your current mitigation and response plans related to pandemic planning or communicable disease efforts. The ultimate goal is to reduce health impacts on our communities and create a more resilient public health system.

Please consider the last four interventions, 10-13, and the steps necessary that your organization/jurisdiction would need to take to implement them. We want you to identify the partners who would be involved in carrying out of these interventions and start discussing your plans with them. DOH and other state agencies are working on more specific guidance and will be providing guidance as it becomes available.

This guide was developed from the Communicable Disease and Pandemic Response Plan, Risk Matrix and Recommendations Table of Annex 4. (Document link — WA Emergency Management Division). Additionally, Center for Disease Control & Prevention (CDC) 2017 guidelines provide evidence-based recommendations on the use of NPIs in mitigating the effects of pandemic influenza. While pandemic influenza is NPI mitigation strategies are not identical to likely recommended strategies for COVID-19, these evidence-based recommendations may help in informing your agency's own strategies and implementations.

COVID-19 Webinar – February 28, 2020

Friday, February 28, 2020 at 10:00 AM DOH will provide an update on where the epidemic currently stands and what policy and planning considerations around non-pharmaceutical interventions local elected officials, emergency managers, and public health jurisdictions should engage in.

Link **https://meet.lync.com/mil.wa.gov/chris.utzinger/1VRN9V41**. For audio, you can dial **1-877-820-7831 with access code 782831#.**

Troy Parks – 360-236-3610
Liaison Officer – Incident Management Team (IMT)
Washington State Department of Health (WSDOH)
https://www.doh.wa.gov/Emergencies/Coronavirus
Viruses don't discriminate and neither will we.

Washington State Department of Health

Non-Pharmaceutical Interventions (NPI) Implementation Guide

NPIs are mitigation strategies to limit and prevent exposure to disease. These include personal protective steps for everyday use, community containment, and environmental measures to control viral disease outbreaks and pandemics.

This guide will help you decide what NPIs to consider implementing in an outbreak. Public health officials will need to determine the appropriate set of interventions to implement in combination for a given incident.

This guide is intended for an Incident Management Team, the Department of Health, multi-agency coordination policy groups, and local health officers.

FEBRUARY 2020

Contents

NPIs

This guide lists 13 interventions to mitigate the spread of a contagious disease, such as a novel virus. It is part of the state's Communicable Disease and Pandemic Response plan and includes personal, community, and environmental methods of control.

Its purpose is to help public health officials and partners choose which mitigation strategies to implement to limit and prevent the spread of novel respiratory diseases of concern.

The interventions included are:

1. Increase handwashing and use of alcohol-based sanitizer
2. Respiratory hygiene and cough etiquette
3. Keep distance from others (> 6 feet)
4. Frequently clean and disinfect surfaces
5. Remain home during a respiratory illness
6. Voluntary isolation of sick persons
7. Voluntary quarantine of contacts of sick persons
8. Involuntary isolation of sick persons
9. Involuntary quarantine of contacts of sick persons
10. Recommend or order cancellation of major public and large private gatherings
11. Recommend or order closure of schools, child care facilities, workplaces, and public buildings
12. Prevent non-emergency travel outside of the home
13. Establish cordon sanitaire

Table 1 lists expected results on the spread of disease if each intervention were to be used, and gives examples of how each of the interventions can be done.

Transmissibility, Severity

Each intervention lists a scaled measure of transmissibility and a scaled measure of clinical severity as identified by the CDC.

- **Transmissibility** is a scale of 1 to 5, with 5 being the most contagious
- **Clinical severity** is a scale of 1 to 7, with 7 being the most severe in terms of number of cases, number of hospitalizations, and fatality ratio.

The complexity of the interventions increases as transmissibility and clinical severity increase. **Table 1** connects these scales to each intervention and **Table 2** defines them.

ESF-8 Supporting Agencies

These Emergency Support Function 8 (ESF-8) supporting agencies contribute to public health response efforts, including community mitigation strategies, in collaboration with the Department of Health as the lead agency for ESF-8.

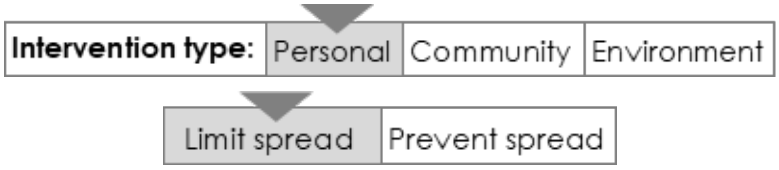
- Department of Agriculture
- Department of Ecology
- Department of Enterprise Services
- Department of Fish and Wildlife
- Department of Labor and Industries
- Department of Licensing
- Department of Social and Health Services
- Department of Transportation
- Washington Military Department
- Washington State Health Care Authority
- Washington State Patrol
- Washington State Pharmacy Association
- Washington State Office of the Attorney General
- Washington State Hospital Association
- Washington State Pharmacy Association
- Washington State Disaster Medical Advisory Committee
- Northwest Healthcare Response Network
- Local Health Officers
- Local Emergency Management Agencies
- Tribal Governments

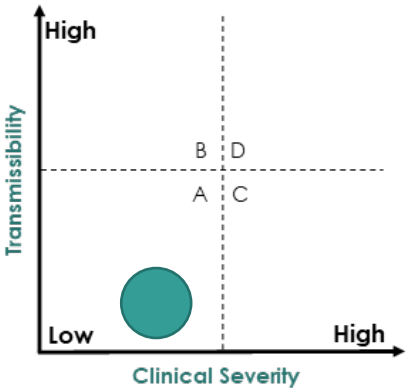
This guide was developed from the Communicable Disease and Pandemic Response Plan, Risk Matrix and Recommendations Table of Annex 4. (Document link — WA Emergency Management Division)

Intervention 1: Increase Handwashing and Use of Alcohol-Based Hand Sanitizer

Reduce probability of direct and indirect transmission of the disease by handwashing regularly with soap and water or using hand sanitizer.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Hand hygiene reduces the transmission of viruses that occurs when one person touches another with a contaminated hand, or when a person touches an object or surface that's been contaminated and then touches their own nose or face with that hand before washing it.

Success Factors: Success depends on public education effectiveness, public compliance, and access to handwashing facilities and sanitizing stations.

Possible Drawbacks: None anticipated, although there is a potential concern about the supply chain for hand sanitizer and soap.

Possible Benefits: Quick and easy to implement; effective at reducing illness due to direct/indirect contact.

Settings and Use

- Personal non-pharmaceutical interventions (NPIs) are everyday preventive actions that can help keep someone from getting and spreading respiratory illnesses transmitted by droplet routes.
- Use at homes, child care facilities, schools, workplaces, houses of worship, public transit, and other settings where people regularly gather.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers

State

Key Decision Makers: The Secretary of Health has the same authority as a local health officer (LHO) to control and prevent the spread of disease (under RCW 43.70.130), and may exercise the authority in an emergency, when LHOs agree, or when LHOs fail or are unable to act, per RCW 43.70.130(7). This includes the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Determine financial responsibility for providing handwashing stations and/or hand sanitizer.
- Research/discuss resource procurement needs:
    - Local/state/national partners
    - Private/public partners
- Develop communication strategies and communication plans.
- Engage community partnerships to promote message.

Implementation Methods

- **Create an inclusive public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.
    - Communicate on multiple platforms appropriate to the affected communities.
    - Connect with community leaders or representatives for advice and buy-in.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Provide consistent messaging throughout the state via media outreach.
    - Encourage workplaces to make handwashing a priority among employees.

- **Create and distribute accessible, public messaging**
    - Display culturally appropriate messaging in public places.
        - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.

- **Place hand-washing or hand sanitizer stations in accessible areas**
    - Deploy disinfectant stations in the following or similar locations: Bus stations, transit centers, transportation hubs, health care facilities, schools, shopping centers, entertainment venues, workplaces
        - Prioritize areas of known exposure or at increased risk of exposure.

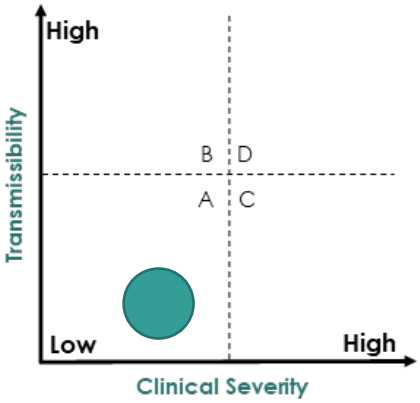
Intervention 2: Respiratory Hygiene/Cough Etiquette

Reduce probability of droplet transmission of the disease by reducing the range of respiratory droplets and aerosols from coughs, sneezes, and other sources.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D

Intervention type:	Personal	Community	Environment

Limit spread	Prevent spread



Rationale for Use as Public Health Strategy

Respiratory etiquette is widely supported in literature and by studies, and is recommended by experts as a way to control the spread of disease. Droplets from those who do not cover their coughs or sneezes can travel up to six feet. Studies of influenza transmission and practical experience in controlling influenza outbreaks reinforce that respiratory hygiene is an important factor in infection control.

Success Factors: Success depends on public education effectiveness and public compliance.

Possible Drawbacks: None anticipated. There could be potential concerns about supply chain for tissues/alcohol-based hand sanitizer.

Possible Benefits: Quick and easy to implement; effective at reducing illness due to droplet transmission.

Settings and Use

- Personal non-pharmaceutical interventions (NPIs) such as covering a cough are everyday preventive actions that can help keep persons from getting and spreading respiratory illnesses transmitted by droplets.
- Use at homes, child care facilities, schools, workplaces, houses of worship, public transit, and other settings where people regularly gather.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers

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Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Determine financial responsibility for providing tissues, handwashing stations, and/or hand sanitizer.
- Research/discuss resource procurement needs:
    - Local/state/national partners
    - Private/public partners
- Develop communication strategies and communication plan.
- Engage community partnerships to promote key messages.

Implementation Methods

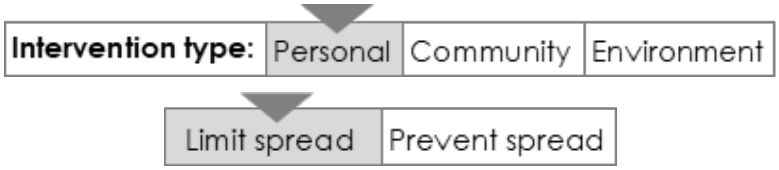
- **Create an inclusive public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.

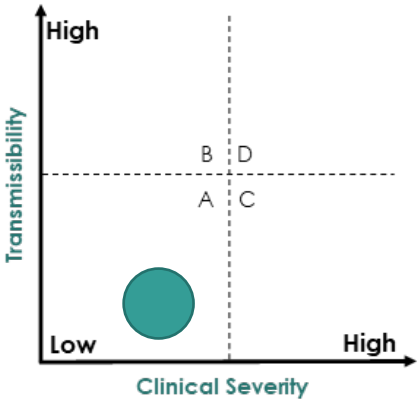
    - Communicate on multiple platforms appropriate to the affected communities
    - Connect with community leaders or representatives for advice and buy-in.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Provide consistent messaging throughout the state via media outreach.
- **Create and distribute accessible, public messaging**
    - Display culturally appropriate messaging in public places.
        - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
        - Flyers should be translated into locally appropriate languages.
- **Provide respiratory hygiene stations in accessible areas.**
    - Provide tissues and waste receptacle at every public hand sanitizer station in accessible areas.
    - Consider bus stations, transit centers, transportation hubs, health care facilities, schools, shopping centers, entertainment venues, etc.
        - Prioritize areas of known exposure or at increased risk of exposure.

Intervention 3: Keep distance from others (> 6 feet)

Reduce probability of direct and droplet transmission by reducing the number of interpersonal contacts.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Keeping distance from others is the most basic form of social distancing that reduce opportunities for person-to-person virus transmission and can help delay and slow the exponential growth of disease spread. It's a common-sense approach to limit disease spread by limiting contact and possible exposures. Droplets from those who do not cover their coughs or sneezes can travel up to six feet. Keeping distance from others if you are sick or from others who may be sick is limits possible spread.

Other more restrictive forms of social distancing are discussed in later interventions and include closure of buildings, isolation and quarantine. The optimal strategy may be to implement several social distancing measures simultaneously where groups of people gather.

Success Factors: Success depends on public education effectiveness and public compliance.

Possible Drawbacks: Certain cultural and religious groups may be unwilling or unable to comply due to conflict with cultural/religious norms or practices. Persons may feel anxious, worried, or fearsome due to being socially distant from others.

Possible Benefits: Quick and easy to implement; effective at reducing illness due to droplet transmission.

Settings and Use

- Personal NPIs such as keeping distance from others who may be sick are everyday preventive actions that can help keep persons from getting and spreading respiratory illnesses transmitted by droplets. Diseases are transmitted by direct contact, indirect contact, droplet, and/or airborne routes. Ill persons can spread illness everywhere they go and surfaces they touch.
- Use at homes, child care facilities, schools, workplaces, houses of worship, public transit, and other settings where people regularly gather.
- Examples that reduce in-person contact include: telecommuting instead of meeting in-person, staggering work hours, spacing workers further apart at the worksite, limiting non-essential travel, and avoiding close contact with people who are sick.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
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Key Decision Makers: The Secretary of Health also has the same authority as local health officers (LHO) to control and prevent the spread of disease (under RCW 43.70.130), and may exercise the authority in an emergency or when LHO(s) agree or fail or are unable to act, per RCW 43.70.130(7). This includes the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Implementation Methods

- **Create an inclusive public messaging campaign**
  - Work with communications team to create messages that:
    - Are culturally competent and at an appropriate reading level.
    - Are translated into the most spoken languages in the affected area.
    - Are relevant to the changing nature of the incident/outbreak.
  - Communicate on multiple platforms appropriate to the affected communities
  - Connect with community leaders or representatives for advice and buy-in.
  - Provide messages to LHJs and other partners to share with their constituents.
  - Provide consistent messaging throughout the state via media outreach.
- **Create and distribute accessible, public messaging**
  - Display culturally appropriate messaging in public places.
    - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
    - Connect with community leaders or representatives for advice.
    - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
    - Flyers should be translated into locally appropriate languages.

Decisional Objectives/Key Decision Points

- Communication strategies and communication plan
    - Outreach to major employers
    - Community and faith-based partners
    - Schools, child care facilities, and other settings where people regularly gather
- Social distancing on public transit
- Social distancing for ill persons or the public at large

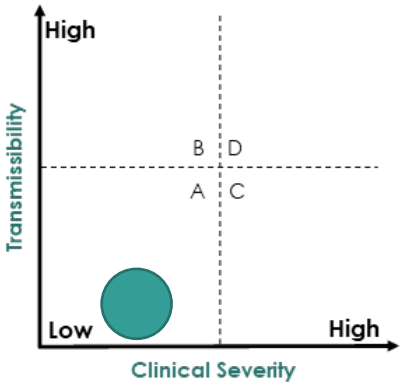
Intervention 4: Frequently Clean and Disinfect Personal Surfaces

Reduce probability of indirect transmission of the disease by disinfecting fomites, or objects that can carry infection. This includes doorknobs, phones, keyboards, etc.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D

Intervention type:	Personal	Community	Environment

Limit spread	Prevent spread



Rationale for Use as Public Health Strategy

Contact transmission (i.e., hand transfer of virus from contaminated objects to the eyes, nose, or mouth) is a recognized route of virus spread. The routine use of disinfection measures that eliminate viruses from contaminated surfaces might reduce the spread of viruses.

Success Factors: Success depends on public education effectiveness, public compliance, and access to appropriate disinfectants at home.

Possible Drawbacks: Lack of available cleaning supplies.

Possible Benefits: Environmental disinfection is effective at reducing illness due to indirect contacts (fomites).

Settings and Use

- Environmental NPIs include routine disinfection of surfaces that helps to eliminate viruses from frequently touched surfaces and objects, such as phones, toys, keyboards, desks, and doorknobs.
- Disinfect homes, child care facilities, schools, workplaces, houses of worship, other settings where people regularly gather, and all frequently touched surfaces with a disinfectant labeled to kill viruses and bacteria.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

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Applicable Law(s):

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Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Determine communication strategies and communication plan.
  - Outreach to major employers
  - Community and faith-based partners
- Research/discuss resource procurement needs, including fiscal responsibility:
  - Local/state/national partners
  - Private/public partners
- Engage business and community partnerships to implement and promote messages.

Implementation Methods

- **Create an inclusive public messaging campaign**
  - Work with communications team to create messages that:
    - Are culturally competent and at an appropriate reading level.
    - Are translated into the most spoken languages in the affected area.
    - Are relevant to the changing nature of the incident/outbreak.
  - Communicate on multiple platforms appropriate to the affected communities
  - Connect with community leaders or representatives for advice and buy-in.
  - Provide messages to LHJs and other partners to share with their constituents.
- **Create and distribute accessible, public messaging**
  - Display culturally appropriate messaging in public places.
    - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.

        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
- **Distribute disinfectant in accessible locations**
    - Deploy disinfectant stations in the following locations: Bus stations, transit centers, transportation hubs, health care facilities, schools, shopping centers, grocery stores, entertainment venues, and other areas where community members gather.
        - Prioritize areas of known exposure or increased risk of exposure.

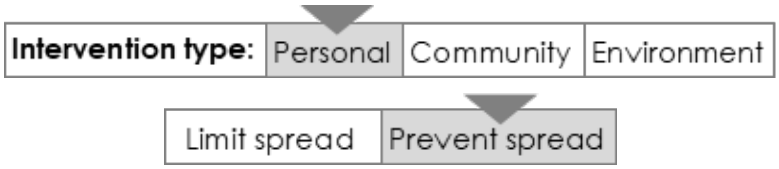
Decisional Objectives/Key Decision Points

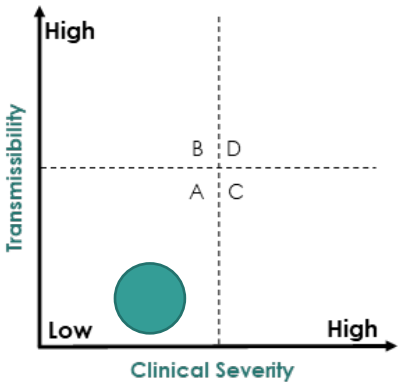
- Determine communication strategies and communication plan.
    - Outreach to major employers
    - Community and faith-based partners
- Research/discuss resource procurement needs, including fiscal responsibility:
    - Local/state/national partners
    - Private/public partners
- Engage business and community partnerships to implement and promote messages.

Intervention 5: Remain Home When Sick with Respiratory Illness

Reduce probability of transmission by preventing contacts between well and sick people.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Staying home while sick will prevent spreading illness to others in your community. You can also create social distance at home and prevent spreading the illness to others in your household by staying in a specific room and away from your household members as much as possible and using a separate bathroom (if available).

Success Factors: Success depends on the individual's willingness and ability to stay home from work/school/events including access to paid sick leave.

Possible Drawbacks: Many members of the public will be reluctant to stay home due to risk of lost wages and limited or no access to paid sick leave.

Possible Benefits: This is a form of voluntary isolation which is extremely effective in reducing the spread of illness if ill persons comply consistently.

Settings and Use

- Diseases are transmitted by direct contact, indirect contact, droplet, and/or airborne routes. Ill persons can spread illness everywhere they go and surfaces they touch.
- This NPI is used at home to stop spread of disease in public places. It can also be used by employers to request sick employees not come to work.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

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Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Communication strategies and communication plan.
    - Communicate with major employers.
    - Perform outreach to community and faith-based partners.
- Reference available guidance on duration of illness.
- Evaluate economic impact of ill persons without paid sick leave.

Implementation Methods

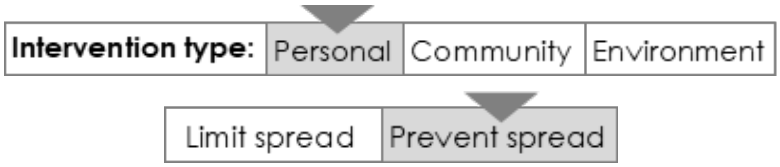
- **Create an inclusive public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.
    - Communicate on multiple platforms appropriate to the affected communities
    - Connect with community leaders or representatives for advice and buy-in.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Provide consistent messaging throughout the state via media outreach.
- **Create and distribute accessible, public messaging**
    - Display culturally appropriate messaging in public places.
        - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
    - Co-locate messaging or publications with sanitizer stations and tissues.
- **Work with employers**
    - Have employers review and communicate their sick leave policies, flexible leave policies, and alternate work schedules with employees to encourage sick employees to stay home and prevent the spread of illness at work.
    - Use current relationships with employers to ask employees to stay home if they are ill.

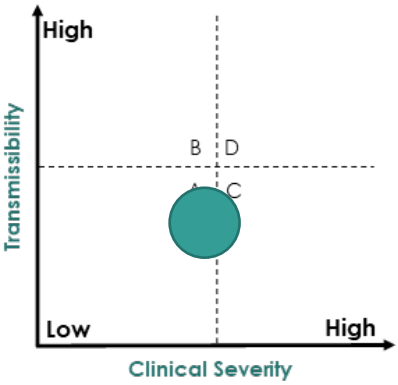
- Suggest allowing employees to work from home. If this is already an option, consider working with HR to be more flexible and inclusive.
- Consider an emergency/temporary change in sick leave policy; allowing an employee to use sick leave proactively and earn it back retroactively.
    - This can decrease the hesitancy on the employees' part to stay home and increase participation in voluntary quarantine.

Intervention 6: Voluntary Isolation of Sick Persons

Reduce probability of transmission by preventing contact between well and sick people.

Transmissibility (1-5)	2
Clinical severity (1-7)	2-5
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Personal non-pharmaceutical interventions are everyday preventive actions that can help keep persons from getting and spreading respiratory illnesses transmitted by droplets. Voluntary isolation is a form of social distancing and prevents a sick person from infecting other people outside of their isolation location. Historically, isolation measures can help prevent the spread of infectious diseases by stopping the person-to-person spread of virus via contaminated droplets generated by coughs and sneezes, and have been shown to delay the peak of an influenza pandemic.

Success Factors: Effective education and ability to comply with request. Material routine support and services (e.g. laundry, food) and working with the employer may help compliance.

Possible Drawbacks: Non-compliance with voluntary isolation increases risk of disease transmission; isolation is difficult to enforce.

Possible Benefits: Isolation is extremely effective in consistently reducing the spread of illness. Voluntary isolation is “less restrictive” and more acceptable to the public.

Settings and Use

- Voluntary isolation of a sick person involves remaining home, at a health care facility, or at another designated isolation facility.
- Isolation is used for persons infected with a contagious disease to separate them from people who are not sick.
- For isolation and quarantine measures, state law requires making reasonable efforts to obtain voluntary compliance unless doing so would create a risk of serious harm (WAC 246-100-040(1)(a)). It is good public health policy, and it's also legally required.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers:

Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Local health officers (and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7)) have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine

State

In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease and issue isolation and quarantine orders. The Secretary also has authority to investigate disease outbreaks and advise local health officers on measures to be taken in response.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)
- WAC 246-101-105 – Duties of the healthcare provider

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Decisional Objectives/Key Decision Points

- Create communication strategies and plan for:
  - Health care providers
  - Major employers
  - Community and faith-based partners
- Create guidance and/or education resources for patients and health care providers, including monitoring forms.
- Identify isolation facility for individual(s).
- Determine need for material support and services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing services.
- Movement plan for sick persons to a health care facility (if needed)
- Personal Protective Equipment (PPE) needed for persons providing support to sick persons in isolation.
- Determine type of monitoring:
  - Self-monitoring (what will be monitored, frequency, reporting)
  - Active monitoring (phone, video, or in-person; frequency; responsible staff)
  - Other type
- Plan the logistics for specimen collection and providing other medical services, if needed.
- Determine when to release from isolation and process for notification.

Implementation Methods

- **Health officer requests that a patient self-isolate**
  - Letter should be on official department letterhead, with a wet or electronic signature from the health officer. While a wet signature may be more impactful, it is not a legal requirement. It may be more efficient and avoid delay to use an e-signature under certain circumstances.
  - Letter should include additional information resources for providers, including phone numbers, websites, and other relevant resources.

- **Instruct health care providers to educate patients**
    - Work with communications teams to distribute a health alert to all providers in Washington.
        - Attach information or a publication to the alert that can be printed and displayed in waiting areas and treatment rooms.
        - Distribute a health alert to all relevant providers about the health officer's request.
- **Engage community organizations and faith-based organizations**
    - Work within already established relationships with community and faith-based partners.
        - If faith-based and community partners receive your health alerts, consider creating a separate alert for them with relevant information to the communities and individuals they serve.
        - Be willing to speak to their leadership/elders/members regarding the situation (within reason) and why we are making this ask.

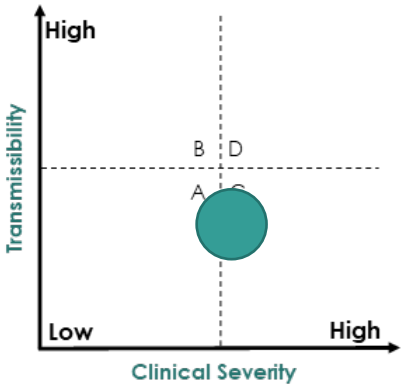
Intervention 7: Voluntary Quarantine of Contacts of Sick Persons

Reduce probability of transmission in the event that the contact becomes contagious before symptoms developed.

Transmissibility (1-5)	2
Clinical severity (1-7)	2-5
Recommend implementing at	A, B, C, D

Intervention type: Personal | Community | Environment

Limit spread | Prevent spread



Rationale for Use as Public Health Strategy

Quarantine refers to the separation and restriction of movement of persons who, while not yet ill, have been exposed to an infectious agent and therefore may become ill. Quarantine of exposed persons is a public health mitigation strategy intended to stop the spread of infectious disease. It is effective in protecting the public from disease.

Certain infected (but not yet symptomatic) individuals may spread illness and could unknowingly infect friends, neighbors, and others in the community before symptoms begin. Therefore, all contacts exposed to a sick person could be asked to voluntarily stay home for a specified period of time to assess for early signs of infection. If other household members of the contact become ill during this period, then the time for voluntary home quarantine may be extended for another incubation period. Quarantine at a designated facility (in lieu of home setting) also can be considered.

Success Factors: Effective contact tracing and individual ability to comply with request. Material support with material routine support and services (e.g. laundry, food) and working with the employer may help to encourage compliance.

Possible Drawbacks: Non-compliance increases risk of disease transmission.

Possible Benefits: Quarantine may allow quick identification of a suspect case and helps to prevent exposures early in the course of illness.

Settings and Use

- To avoid potential spread of the disease, consider use of voluntary quarantine for contacts who are exposed to a sick person but are not showing symptoms.
- Settings: At home or at a designated facility.
- For isolation and quarantine measures, state law requires making reasonable efforts to obtain voluntary compliance unless doing so would create a risk of serious harm (WAC 246-100-040(1)(a)). It is good public health policy, and it's also legally required.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Local health officers (and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7)) have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine
- WAC 246-101-105 – Duties of the healthcare provider

State

In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease and issue isolation and quarantine orders. The Secretary also has authority to investigate disease outbreaks and advise local health officers on measures to be taken in response.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)
- WAC 246-101-105 – Duties of the healthcare provider

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Decisional Objectives/Key Decision Points

- Definition of "close contact" (including length of exposure to ill person, travel history, etc.)
- Location(s) of quarantine facility (home, government facility, etc.)
- Length of quarantine
- Communication strategies and plan
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan for moving persons under quarantine to a health care facility if they develop symptoms
- Determine type of monitoring:
    - Self-monitoring (what will be monitored, frequency, reporting)
    - Active monitoring (phone, video, or in-person; frequency; responsible staff)
    - Other type
- Plan the logistics for specimen collection and providing other medical services, if needed.
- Determine when to release from quarantine and process for notification.

Implementation Methods

- **Health officer request for person to self-quarantine**
    - Letter should be on official department letterhead, with a wet or electronic signature from the health officer. While a wet signature may be more impactful, it is not a legal requirement. It may be more efficient and avoid delay to use an e-signature under certain circumstances.
    - The letter should include additional resources for providers, including phone numbers, websites, and other relevant resources.
- **Engage community-based and faith-based organizations to support**
    - Work within already established relationships with community-based and faith-based partners.
        - Consider creating and sending a custom health alert for them with relevant information to the communities and individuals they serve.
        - Be willing to speak to their leadership/elders/members regarding the situation (within reason) and why we are making this ask.
- **Work with employers**
    - Use current relationships with employers to support employees in voluntary quarantine due to exposure to sick contacts.

        - Suggest allowing employees to work from home. If this is already an option, consider working with human resources to be more flexible and inclusive.
        - Consider an emergency/temporary change in sick leave policy; allowing an employee to use sick leave proactively and earn it back retroactively.
            - This can decrease the hesitancy on the employees' part to stay home and increase participation in voluntary quarantine.
- **Create a public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.
    - Communicate on multiple platforms appropriate to the communities of affected persons.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Send a health alert to health care providers.

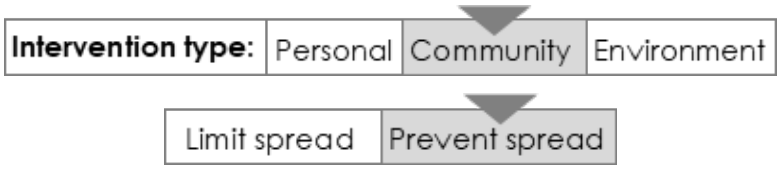
Special Considerations

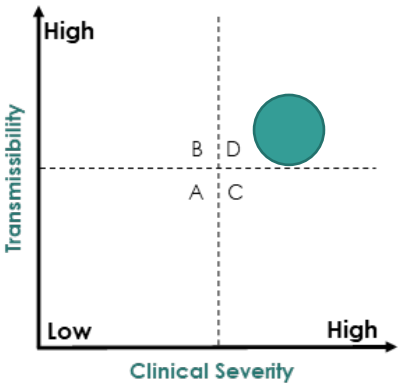
- Consider dedicating a phone line to answer questions that may follow the request for quarantine.
- Work with communications staff to translate materials as needed for community-based and faith-based organizations, community partners, and employers.
- Sovereign tribal nations may decide their own criteria for quarantine.
- Consider use of telemedicine options and home assessment teams for medical support and backup. The idea that medical health is available may help reduce anxiety.

Intervention 8: Involuntary Isolation of Sick Persons

Reduce probability of transmission by preventing contact between well and sick people.

Transmissibility (1-5)	3
Clinical severity (1-7)	5-6.5
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Isolation prevents a sick person from infecting others outside of their isolation location. Historically, isolation measures have helped to prevent the spread of infectious diseases, such as influenza, by stopping the person-to-person spread of virus via contaminated droplets from coughs and sneezes.

Success Factors: Success depends on health care facility and/or public health system ability to implement. Clearly communicate with affected communities about the rationale for use of isolation, and the responsibility for public officials to protect the safety and health of a community from communicable illnesses of high severity and high transmissibility.

Possible Drawbacks: Involuntary isolation is extremely restrictive and resource intensive. It limits personal liberties and can be controversial.

Possible Benefits: Isolation is effective in reducing the spread of illness. Use of involuntary isolation is a method to force compliance to the measure.

Settings and Use

- Isolation separates sick persons with a contagious disease from people who are not sick.
- Involuntary isolation is only recommended when an individual is not reliable or compliant with voluntary isolation for a disease that is highly severe and highly transmissible.
- For isolation and quarantine measures, state law requires making reasonable efforts to obtain voluntary compliance unless doing so would create a risk of serious harm (WAC 246-100-040(1)(a)). It is good public health policy, and it's also legally required.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: The local health officer and/or Secretary of Health may issue a detention order for involuntary isolation when they have reason to believe the person is infected with a communicable disease and poses a serious and imminent risk to the health and safety of others if not isolated. The local health officer must first make reasonable efforts to obtain voluntary

compliance, unless doing so would create a risk of serious harm. An order directly from a local health officer may last for up to 10 days. A court may order a longer period of isolation. Violation of an isolation order is a misdemeanor for which individuals may be arrested, fined, and imprisoned up to 90 days.

Local health officers, and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7), have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine
- WAC 246-100-070 – Enforcement of local health officer orders
- WAC 246-101-105 – Duties of the healthcare provider
- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- RCW 70.05.120(4) – Violations – Remedies - Penalties (misdemeanor for violation of an order)

Forms (find all instructions and forms on DOH's website):

- Emergency Involuntary Detention Order (Word)
  In addition to the form available at the link above, a COV-19 specific involuntary detention order is available. Please contact DOH for use.
- Confidential Schedule (Word)
  A local health officer may issue an isolation order immediately. Such an order is subject to court challenge. A court order is required to isolate an individual for longer than 10 days. Law enforcement may arrest an individual for violating a local health officer's or a court order. A court order is also enforceable through contempt proceedings.

  When no attempt is made to seek voluntary compliance due to the serious and imminent risk to the public, use the following forms:
- Summons (Word)
- Detention ex parte petition (Word)
- Confidential schedule (Word)
- Declaration supporting ex parte detention petition (Word)
- Order ex parte for involuntary detention (Word)

When voluntary compliance was sought, but the individual refused or otherwise indicated they would not comply, use the following forms:

- Summons (Word)
- Detention ex parte petition when voluntary detention refused (Word)
- Confidential schedule (Word)
- Declaration supporting ex parte detention petition when voluntary detention refused (Word)
- Order ex parte when voluntary detention refused (Word)

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. Tribal nations may decide their own criteria for isolation.

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Decisional Objectives/Key Decision Points

- Language for health officer order and involuntary detention court orders.
- Location(s) for isolation.
- Personal Protective Equipment (PPE) requirements for health care workers providing care for sick persons.
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan of moving sick persons under isolation to treatment facility, if isolated outside of a health care facility.
- Plans and logistics for specimen collection or providing other medical services, if needed.
- Communication strategies and plan to communicate decisions
    - Affected individuals and community members
    - Public, media, public officials
- Due process: understand and prepare for the rights of the affected patient if due process is initiated. Communicate steps for due process, such as administrative hearings, court review, or notification of right to object. Protect patient rights to privacy and restrictions on who can and cannot be notified (e.g., family member, employer)
- Plan to manage non-compliance with isolation. Identify progressively restrictive steps, up to court-ordered detention. Identify decision point for ordering person to a more restrictive location. Identify who will issue order and transport process.
- Determine when to release from isolation and process for notification.

Implementation Methods

- **Health officer order for emergency detention**
    - Once the person is ordered into isolation, the local health officer should seek a court order and must consider individual rights to due process. Seeking a court order quickly is a good idea if isolation sought is more than 10 days.
    - The needs of a person isolated or quarantined must be addressed to the greatest extent possible in a systematic and competent fashion, including, but not limited to, providing adequate food, clothing, shelter, means of communication with those in isolation or quarantine and outside these settings, medication, and competent medical care. Cultural and religious beliefs should be considered in addressing their needs.
- **Standing orders within a hospital**
    - Work with the hospital facility or designated health care provider and the health officer to create standing orders for the care of individuals in involuntary isolation.

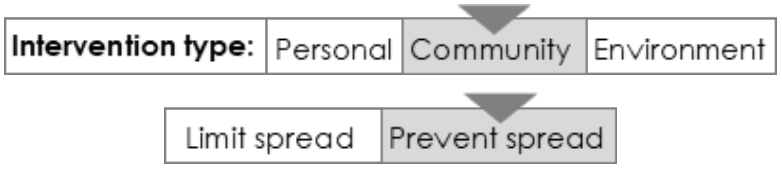
Special Considerations

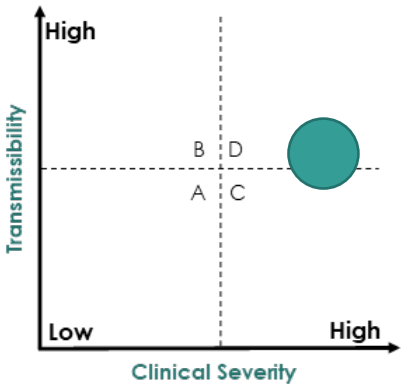
- Food, water, basic needs, and other support services for isolated patients.
- This intervention requires detailed coordination between state and local government officials.
- Court orders for involuntary isolation may be required.
- Tribal nations may decide their own criteria for isolation.
- When the individual is released, consider providing them with a letter that recognizes their release so they will not be mistakenly reported as not complying with the isolation order.

Intervention 9: Involuntary Quarantine of Contacts of Sick Persons

Reduce probability of transmission in the event that the contact becomes contagious before symptoms developed.

Transmissibility (1-5)	3
Clinical severity (1-7)	5-6.5
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Quarantine refers to the separation and restriction of movement of persons who, while not yet ill, have been exposed to an infectious agent and therefore may become infectious. Quarantine of exposed persons is a public health strategy intended to stop the spread of infectious disease. Quarantine is medically very effective in protecting the public from disease.

Certain infected but not yet symptomatic individuals may unknowingly infect friends, neighbors, and others in the community before becoming symptomatic.

In situations of highly transmissible and clinically severe infections where there are asymptomatic contacts who are not willing to quarantine, authorities may want to consider involuntary quarantine of contacts of sick persons to prevent possible disease spread, especially for novel pathogens of concern.

Success Factors: Success depends on health care facility and/or public health system ability to implement.

Possible Drawbacks: Involuntary quarantine is extremely restrictive and resource intensive.

Possible Benefits: Quarantine is extremely effective in reducing the spread of illness. Non-compliant persons can be prevented from spreading the disease.

Settings and Use

- Consider using involuntary quarantine for contacts who are not reliable or compliant and who were exposed to a sick person but are asymptomatic to avoid potential spread of disease.
- Involuntary quarantine at a designated facility is only recommended when an individual is not reliable or compliant.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: The local health officer and/or Secretary of Health may issue a detention order for involuntary quarantine when they have reason to believe the person is, or is suspected

to be, infected with or exposed to a communicable disease and poses a serious and imminent risk to the health and safety of others if not quarantined. The local health officer must first make reasonable efforts to obtain voluntary compliance, unless doing so would create a risk of serious harm. An order directly from a local health officer may last for up to 10 days. A court may order a longer period of quarantine. Violation of a quarantine order is a misdemeanor for which individuals may be arrested, fined, and imprisoned up to 90 days.

Local health officers, and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7), have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine
- WAC 246-100-070 – Enforcement of local health officer orders
- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
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- RCW 70.05.070 – Local health officer – powers and duties
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Forms (find all instructions and forms on DOH's website):

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- Confidential Schedule (Word)
- A local health officer may issue an isolation order immediately. Such an order is subject to court challenge. A court order is required to isolate an individual for longer than 10 days. Law enforcement may arrest an individual for violating a local health officer's or a court order. A court order is also enforceable through contempt proceedings.

When no attempt is made to seek voluntary compliance due to the serious and imminent risk to the public, use the following forms:

- Summons (Word)
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- Confidential schedule (Word)
- Declaration supporting ex parte detention petition (Word)

- Order ex parte for involuntary detention (Word)

When voluntary compliance was sought, but the individual refused or otherwise indicated that he or she would not comply, use the following forms:

- Summons (Word)
- Detention ex parte petition when voluntary detention refused (Word)
- Confidential schedule (Word)
- Declaration supporting ex parte detention petition when voluntary detention refused (Word)
- Order ex parte when voluntary detention refused (Word)

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Tribal

- Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. Tribal nations may decide their own criteria for isolation.

Decisional Objectives/Key Decision Points

- Language for health officer order and involuntary detention court orders.
- Definition of "close contact" (including length of exposure to ill person, travel history, etc.)
- Location(s) of quarantine facility (home, government facility, etc.)
- Length of quarantine
- Communication strategies and plan
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan to move persons under quarantine to a health care facility if they develop symptoms
- Plans and logistics for specimen collection or provision of other medical services, if needed.
- Active monitoring for persons under quarantine

Implementation Methods

- **Health officer order for emergency detention**
    - Once the person is ordered into quarantine, the local health officer should seek a court order and must consider individual rights to due process. Seeking a court order quickly is a good idea if isolation sought is more than 10 days.
    - The needs of a person isolated or quarantined must be addressed to the greatest extent possible in a systematic and competent fashion, including, but not limited to, providing adequate food, clothing, shelter, means of communication with those in isolation or

quarantine and outside these settings, medication, and competent medical care. Cultural and religious beliefs should be considered in addressing their needs.

- **Standing orders within a hospital**
    - Work with the hospital facility or designated health care provider and the health officer to create standing orders for the care of individuals in involuntary quarantine.

Special Considerations

- Food, water, basic needs, and other support services for quarantined individuals.
- This intervention will require detailed coordination between state and local government officials.
- Court orders for involuntary isolation may be required.
- Tribal nations may decide their own criteria for isolation.
- When the individual is released, consider providing them with a letter that recognizes their release so they will not be mistakenly reported as not complying with the quarantine order.

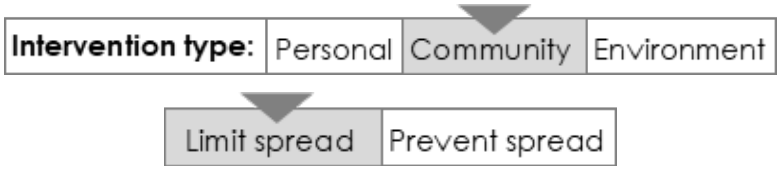
Decisional Objectives/Key Decision Points

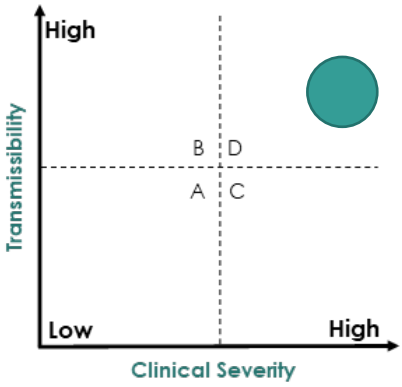
- Language for health officer order and involuntary detention court orders.
- Definition of “close contact” (including length of exposure to ill person, travel history, etc.)
- Location(s) of quarantine facility (home, government facility, etc.)
- Length of quarantine
- Communication strategies and plan
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan to move persons under quarantine to a health care facility if they develop symptoms
- Plans and logistics for specimen collection or provision of other medical services, if needed.
- Active monitoring for persons under quarantine

Intervention 10: Recommend or Order Cancellation of Major Public and Large Private Gatherings

Reduce probability of transmission by reducing the number of the interpersonal contacts.

Transmissibility (1-5)	4
Clinical severity (1-7)	5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Social distancing measures, such as cancellation or postponement of mass gatherings, reduce opportunities for person-to-person virus transmission and can help delay the spread and slow the exponential growth of disease spread. The optimal strategy is to implement these measures simultaneously in places where people gather.

Canceling mass gatherings, in combination with other social distancing measures (e.g., patient isolation, quarantine of exposed persons, and school closures), may help reduce virus transmission.

Success Factors: Success depends upon event sponsor compliance and authorities' ability to enforce effectively.

Possible Drawbacks: May result in revenue loss, public outrage, or political backlash, and may disproportionately affect certain cultural and community groups.

Possible Benefits: Reduces opportunities for widespread disease transmission by reducing interpersonal contacts and increasing social distance.

Settings and Use

- Social distancing measures can be implemented in a range of community settings, including public places where people gather (e.g., parks, houses of worship, theaters, sports arenas).
- Modifying, cancelling, or postponing events is an approach that might reduce face-to-face contact in community settings.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods. This includes issuing orders to cancel events.

Key Stakeholders: Decision should be made in coordination with local elected officials (such as mayor, city council, county council, and/or county executive), emergency managers, local law enforcement, impacted businesses, proprietors, cultural and religious leaders, event sponsors and event organizers.

Applicable Law(s) for Decision Makers:

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders

State

Key Decision Makers: In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease and issue orders to cancel events. The Secretary of Health also has the authority to promote public health activities and educational campaigns.

The Governor has broad authority to proclaim a state of emergency in order to preserve life, health, property, or the public peace (RCW 43.06.220). A governor declared emergency could trigger limitations such as curfews, prohibitions of people on streets and open areas, limit use of streets, highways or public ways; or other broad restrictions outlined by the law, such as prohibiting travel.

Washington's laws against discrimination are outlined in RCW 49.60. Public officials should consider how communities may be impacted and take action to remove stigma that may marginalize or discriminate against groups.

Applicable Law(s):

- RCW 43.06.220 – State of emergency – powers of governor pursuant to proclamation
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)
- RCW 49.60 – Discrimination – Human Rights Commission

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. They may decide their own criteria for canceling large gatherings.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders.

Applicable Law(s):

- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services

Decisional Objectives/Key Decision Points

- Establish guidance/requirements needed to request or order the cancellation of gatherings.
- Identify affected events and disproportionately impacted communities.
    - Research upcoming cultural and religious holidays, observances, and events.
    - Assess economic impact for both individuals and larger communities (loss of wages, tourism revenue)
- Plan community engagement efforts, methods, and approaches that are responsive to the needs, preferences, and values of the community.
- Develop strategies to gain buy-in from event organizers and leadership
- Plan for enforcement of cancellations
    - Partner with trusted community leaders
    - Assess need, benefit, and potential unintended consequences of working with law enforcement/security personnel.
    - Create mitigation strategies, as needed, to address any real, potential, or perceived issues or consequences of enforcement activities.
- Determine whether events should be pre-emptively canceled.
- Proactively address unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Healthcare Considerations

- Consider impact on the healthcare system and their current capacity and if the intervention would reduce or increase burden.
- Determine if implementation would mitigate burden on health care system to maintain essential medical services, especially for underserved populations.
- Identify if this would decrease or increase absenteeism among health care workers.
- Potential legal and ethical issues involving altered standards of care.

Implementation Methods

- **Health officer order or request that major government-sponsored events/gatherings be cancelled or postponed.**
    - Meet with event organizers, committees and employees.
        - Explain the situation
        - Offer alternatives, if any, including new location, rescheduling the event, or changing entrance rules.
    - Government-sponsored events or gatherings may be affected anyway due to the Continuity of Operations Plan.
    - Work with public information officers/communication teams to get the information out with relevant Q&As and FAQs
- **Create and distribute accessible, public messaging about closures**
    - General messaging about why these measures are being taken.

        - Work with communications team to create messages that:
            - Meet readability and accessibility guidelines.
            - Are culturally and linguistically relevant.
            - Are translated into the most spoken languages in the affected area.
            - Are relevant/adaptable to the changing nature of the incident/outbreak.
        - Communicate through multiple platforms and channels appropriate to the affected communities
        - Engage with community leaders or representatives for advice and buy-in.
        - Provide messages to LHJs and other partners to share with their constituents.
        - Provide consistent messaging throughout the state via media outreach.
        - Develop tailored messaging for disproportionately impacted communities.
    - Specific messaging about the cancellation of specific events.
        - Display appropriate messaging in places where attendees may see them.
        - Work with event organizers and to use their communication methods.

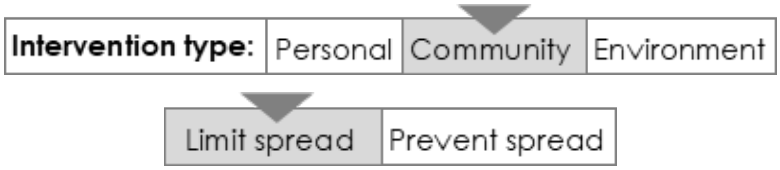
Special Considerations

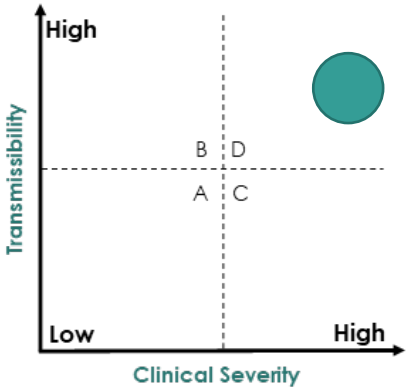
- Requires excellent and effective communication mechanisms to notify community of details and rationale. Communications must be culturally relevant and in a language and format that the audience can understand to be effective.
- Any attempts to implement social distancing in cultural & religious gatherings should be informed by cultural & religious leaders.
- Canceling events could affect civic participation and social cohesion. It could also create an opportunity for discrimination if only certain events are closed.
- Postponing the event may benefit or negatively impact employees as well as attendees or participants, depending on the event and the individual's role.
- This intervention will require detailed coordination between state, local government officials, and community organizations/leaders/groups.
- This intervention will require detailed coordination with the event organizers and planners.
- Cancellation of large events may affect individual income, revenue, employment, economic opportunity, and commerce.
- Coordination with the Office of the Governor and/or local government leadership may be needed.
- There should be consistency in which events are cancelled. Cancellation should not be based on the communities likely to attend or work at the event.
- Culturally and religiously diverse communities may be disproportionally impacted.
- Families on the brink of housing insecurity may be disproportionately impacted by loss of wages, potentially increasing risk of missing rent payments, potentially increasing risk of eviction and homelessness. Homeless individuals already experience barriers to health care, services, and information.
- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.

Intervention 11: Recommend or Order Closure of Public or Private Sites within impacted communities

Viruses quickly and easily spread in places where people gather in close contact, such as schools, child care facilities, workplaces, and public buildings. Dismissing or closing such facilities may be considered to limit disease spread by reducing the number of interpersonal contacts.

Transmissibility (1-5)	4
Clinical severity (1-7)	5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Social distancing measures, including closure of buildings, reduce opportunities for person-to-person virus transmission and can help delay the spread and slow the exponential growth of disease spread. If disease spread is occurring in a school, child care facility or public building, dismissing students, staff, or the public from these locations or closing the locations early can limit further spread. The optimal strategy may be to implement several social distancing steps simultaneously where large groups of people gather.

Success Factors: Early implementation of dismissals or closures to limit spread. Facility compliance and authorities' ability to enforce effectively.

Possible Drawbacks: May result in missed school days, revenue loss, public outrage, or political backlash. It may disproportionately affect certain cultural and community groups. Low income and other vulnerable communities may be put at risk for non-outbreak related harm if they are unsupervised, don't have access to an adult caretaker, or cannot communicate with the outside world if there is an emergency. It may cause disruption for families and communities. Adults may experience missed work and loss of income from their workplace closure or to stay home to care for children.

Possible Benefits: Reduces opportunities for widespread disease transmission by reducing interpersonal contacts and increasing social distance.

Settings and Use

Specific priority settings include schools, child cares, workplaces, meetings, and other places where people gather (e.g., parks, religious institutions, theaters, and sports arenas).

Early dismissal or closing facilities is a social distancing measure that may reduce face-to-face contact in community settings to reduce the spread of diseases transmitted by contact, droplets, or air. Choose social distancing measures depending on the severity of the disease.

School or child care: Examples of social distancing, closures and dismissals could include:

- Dismissing or cancelling classes and use web-based distance learning instead
- Pre-emptive, coordinated school closures or dismissals at child care facilities, K–12 schools, and institutions of higher education.
- Canceling school concerts, after-school programs, or sporting events.

Workplaces and public buildings: Many work settings involve shared work space, equipment, and face-to-face contact. Public buildings can bring many people into close contact. Examples of social distancing for these settings include telecommuting and remote-meeting options in workplaces.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

When there is a potential for an outbreak within a school or childcare center, local health officers have the authority to order school superintendents and childcare center administrators to close their facilities, cancel events, and/or exclude students, staff, and volunteers.

Key Stakeholders: Decision should be made in coordination with school superintendents, boards of education, local elected officials (such as mayor, city council, county council, and/or county executive), child care administrators, private sector, emergency managers, local law enforcement, impacted businesses, proprietors, event sponsors and event organizers.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders
- WAC 246-110-020 – Control of contagious disease (schools and childcare centers)

State

Key Decision Makers: In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease. The Secretary of Health also has the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department of Health created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)

- RCW 49.60 – Discrimination – Human Rights Commission

Tribal

- Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. They may decide their own criteria for canceling school, child care, and tribal facilities.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders.

Applicable Law(s):

- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services

Decisional Objectives/Key Decision Points

- Scale of closures (e.g. specific schools, districts, ages, geographic regions)
- Identify affected facilities
- Determine whether closure is limited to certain at-risk groups or applies to the general public.
- Length of closure
- Determine building cleaning protocols, if needed.
- Personal Protective Equipment (PPE), if any, for persons cleaning closed facilities
- Communication strategies and plan
- How to get employer engagement and buy-in

Healthcare Considerations

- Consider impact on the healthcare system and their current capacity and if the intervention would reduce or increase burden.
- Determine if implementation would mitigate burden on health care system to maintain essential medical services, especially for underserved populations.
- Increase in absenteeism among health care workers if schools and childcare are closed.
- Potential legal and ethical issues involving altered standards of care.

Implementation Methods

- **Local health officials and local school administrators work closely together in decision making to implement closures and dismissals**.
    - Include communication to parents and the public in case of school or child care closure.
    - Include communication to employees in case of a workplace closure.
- **Communicate to the media, partners, and the public about any facility or building closure.**
    - Create culturally relevant publications in all needed languages.
    - Work through the building or organization's communication channels.
    - Communicate on multiple platforms appropriate to the affected communities

- Provide consistent messaging throughout the state via media outreach.

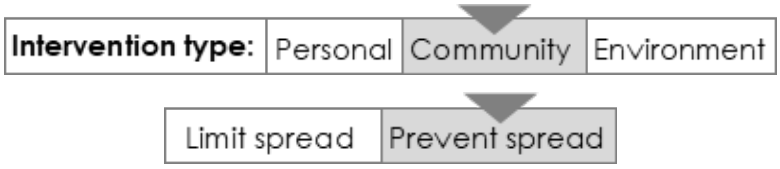
Special Considerations

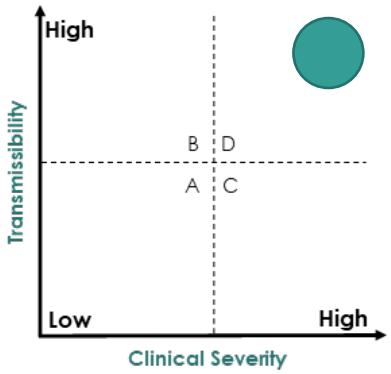
- Local health policies and risk communication strategies should take into account community attitudes and acceptance of preventive behaviors related to social distancing, which might differ across racial/ethnic, cultural, and economic groups.
- Strategies can be used in settings like schools (e.g., closure), workplaces (e.g., phone conferences instead of in-person meetings), and mass gatherings (e.g., postponement or cancellation) to reduce spread and infections. Multiple social distancing measures can be implemented simultaneously.
- Regarding school and child care closures, public officials should make decisions that balance local benefits and potential harms and consider timing, flexibility, and modifications to intervention based on the severity of local conditions.
- Requires advanced planning and preparation, as well as political leadership; collaboration between public health and emergency management agencies; coordination with schools, child care, businesses, nongovernmental organizations, and community- and faith-based organizations; and clear communication with the public.
- Cancelling school, child care facilities, workplaces, and public buildings would reduce income for staff working in those locations. Additionally, this could impact the income of working parents left without childcare and school and impact the ability for students to learn.
- Consider options for students who receive free or reduced-price student lunches to continue receiving meals during missed school days. Families experiencing housing insecurity or homelessness may need additional and proactive planning to ensure children are able to access alternative meals during closures.
- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Intervention 12: Prevent Non-Emergency Travel Outside the Home

Limiting travel outside of the home will reduce probability of the transmission by reducing the numbers of the interpersonal contacts. Travel should be restricted to emergency use only.

Transmissibility (1-5)	5
Clinical severity (1-7)	5.5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

This intervention is a more extreme measure of social distancing, which reduces occasions for person-to-person virus transmission to help delay the spread and slow the exponential growth of a pandemic.

Success Factors: Success depends upon compliance and authorities' ability to enforce effectively.

Possible Drawbacks: Will prevent the operation of public entities and private businesses; the effect will be felt economically by employees as loss of income, and the public as lack of commodity availability. Revenue loss; public outrage; and political backlash are possible. Travel restrictions may disproportionately affect certain cultural and community groups.

Possible Benefits: Reduces opportunities for direct or indirect disease spread, and may prevent a disease from entering new geographical region.

Settings and Use

- Travel restrictions are conditionally recommended during an early stage of a localized and extraordinarily severe pandemic for a limited period of time. Before implementing, consider cost, acceptability and feasibility, as well as ethical and legal considerations, in relation to this measure.
- This intervention should be considered when less-restrictive interventions have failed or to prevent disease introduction into new geographical areas.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: Local governments have police power to protect the public health under the U.S. Constitution's 10th Amendment, granting authority to implement restrictions on private rights for the sake of public welfare, order, and security. It also includes reasonable regulations to protect public health and safety. Under the 10th Amendment, police powers resides with state and local authorities unless specifically delegated to federal government. Local governments

may need to collaborate with state and federal partners as the complexity of the emergency increases. Local governments may request support from the state.

The Governor has broad authority to proclaim a state of emergency in order to preserve life, health, property, or the public peace (RCW 43.06.220). A governor declared emergency could trigger limitations such as curfews, prohibitions of people on streets and open areas, limit use of streets, highways or public ways; or other broad restrictions outlined by the law, such as prohibiting travel.

Washington's laws against discrimination are outlined in RCW 49.60. Public officials should consider how communities may be impacted and take action to remove stigma that may marginalize or discriminate against groups.

Key Stakeholders: Decision should be made in coordination with local elected officials (such as mayor, city council, county council, and/or county executive), private sector, emergency managers, local law enforcement, school superintendents, boards of education, health care, and transportation agencies.

Applicable Law(s):

- RCW 43.06.220 – State of emergency – powers of governor pursuant to proclamation
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- RCW 49.60 – Discrimination – Human Rights Commission
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders.

Applicable Law(s):

- 42 U.S.C. § 201 *et seq.* – Public Health Service Act
- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services
- Public Law No. 116-22 – 2019 Pandemic and All-Hazards Preparedness and Advancing Innovation Act (PAHPAIA)
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act

Decisional Objectives/Key Decision Points

- Define "essential travel"
- Define geographic location for ban on non-essential travel and length of ban.
- Communication strategies and communication plan
- Enforcement plan in coordination with law enforcement
    - Personal Protective Equipment (PPE) needed for enforcement officials
- Movement plan for individuals with essential travel needs
- Consider support of elected officials in issuing the order
- Consider how individual or community will access emergency services, if needed, during the restriction period
- Determine need for material support and services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing services.
- Plans and logistics for specimen collection or providing other medical services, if needed.

Healthcare Considerations

- Consider impact on the healthcare system and their current capacity and if the intervention would reduce or increase burden.
- Determine if implementation would mitigate burden on health care system to maintain essential medical services, especially for underserved populations.
- Increase in absenteeism among health care workers if schools and childcare are closed.
- Potential legal and ethical issues involving altered standards of care.

Implementation Methods

- Health officer order to the public to cease all non-essential travel.
- Work with law enforcement agencies to enforce.
    - Enforcement must be feasible and within the capabilities of the agency.
- Distribute messaging to help the public understand the reason for the measure and what to do.
    - Ensure messaging is culturally and linguistically appropriate for any groups disproportionately affected by the travel restriction. Ensure messaging is accessible for individuals with disabilities and available in alternative formats.

Special Considerations

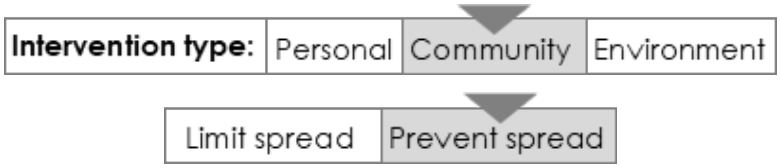
- Consider obtaining support of elected officials in issuing such a restrictive order.
- This intervention will require detailed coordination between state and local government officials.
- Law enforcement will be necessary to enforce the travel ban.
- Schools, transit services, and places of work will be affected.
- Sovereign tribal nations may decide their own criteria for non-emergency travel.
- Consider possible impacts to the health care system, such as an increase in people seeking care.
- Plan in advance any services needed to support the community during the restriction period.

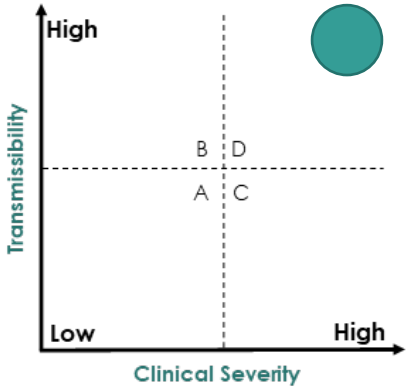
- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Intervention 13: Establish a Cordon Sanitaire

Contains a communicable disease within specific geographical boundaries. Legally enforceable order that restricts movement into or out of an area of quarantine to reduce spread in and to persons outside affected area.

Transmissibility (1-5)	5
Clinical severity (1-7)	5.5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

A cordon sanitaire is the restriction of movement of people in or out of the defined geographic area in order to contain disease within specific geographical boundaries. It is created around an area experiencing an outbreak or disease to prevent spread. This is a form of isolation and quarantine when applied to all inhabitants of an area as a sanitary barrier.

Success Factors: Success depends upon compliance and authorities' ability to enforce effectively. It also depends on engaging affected people to communicate the reason for the measure and gain their support for complying.

Possible Drawbacks: Controversial because it infringes on personal freedom of movement. May lead to feeling isolated or result in the isolation of an entire community. People could be stranded without support. Commerce will be heavily compromised. Revenue loss, public outrage, and political backlash are possible. It may disproportionately affect certain cultural and community groups, low-income families, rural and under-resourced communities, and individuals with un-related acute, chronic, or severe medical needs. May be difficult to solicit cooperation.

Possible Benefits: May contain a disease within the boundaries of the cordon. Reduces need for urgent evaluation of large numbers of potential contacts to determine indications for activity restrictions. May reduce transmission among groups without explicit activity restrictions.

Settings and Use

This strategy can be used when extensive transmission is occurring, a significant number of cases lack identifiable epidemiologic links at the time of evaluation, and/or restrictions placed on persons known to have been exposed are insufficient to prevent further spread.

Consider this intervention with highly transmissible and clinically severe disease that has requires geographic containment. This could apply to diseases that are easily transmitted

human-to-human via contact, droplet, and/or airborne routes when less-restrictive interventions have failed, or to prevent introduction into new geographical areas.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: Local governments have police power to protect the public health under the US Constitution's 10th Amendment, granting authority to implement restrictions on private rights for the sake of public welfare, order, and security. It also includes reasonable regulations to protect public health and safety. Under the 10th Amendment, police powers resides with state and local authorities unless specifically delegated to federal government. Local governments may need to collaborate with state and federal partners as the complexity of the emergency increases. Local governments may request support from the state.

The Governor has broad authority to proclaim a state of emergency in order to preserve life, health, property, or the public peace (RCW 43.06.220). A governor declared emergency could trigger limitations such as curfews, prohibitions of people on streets and open areas, limit use of streets, highways or public ways; or other broad restrictions outlined by the law, such as prohibiting travel.

Washington's laws against discrimination are outlined in RCW 49.60. Public officials should consider how communities may be impacted and take action to remove stigma that may marginalize or discriminate against groups.

Applicable Law(s):

- RCW 43.06.220 – State of emergency – powers of governor pursuant to proclamation
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- RCW 49.60 – Discrimination – Human Rights Commission
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders. HHS Secretary may declare a public health emergency under 42 USC sec. 247, which is a way to get Congress to fund a public health emergencies account, but declarations are often made receiving without associated Congressional funding.

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 201 *et seq.* – Public Health Service Act
- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law No. 116-22 – 2019 Pandemic and All-Hazards Preparedness and Advancing Innovation Act (PAHPAIA)
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act

Decisional Objectives/Key Decision Points

- Geographic location and timeframe of cordon sanitaire.
- Communication strategies and communication plan, including:
    - How affected community will receive updates
    - Whether to set up a call center
- Work with law enforcement to determine an enforcement strategy, including non-compliance.
    - Personal Protective Equipment (PPE) for officials enforcing the cordon sanitaire
- Movement of individuals and essential personnel into and out of the cordoned area for health and safety reasons
- Movement of materials (e.g. food, medical supplies/services, waste management) into and out of the cordoned area and providing essential services (e.g. utilities and water), and who will authorize providing services.
- Plan for health and emergency services in the cordoned area, such as mental health support, telehealth, and emergency medical transport
- Plans and logistics for specimen collection or providing other medical services, if needed.
- Identify communities that will be disproportionately impacted or burdened.
- Plan community engagement efforts, methods, and approaches that are responsive to the needs, preferences, and values of the community.
- Proactively address unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Implementation Methods

- **Health officer orders a cordon for a specific geographic area.**
    - Work with local health officer to determine best geographic area; work with the Washington State Department of Transportation and other transportation partners to transport cases and/or contacts to or from a geographic area.
- **Work with law enforcement agencies to enforce the cordon.**

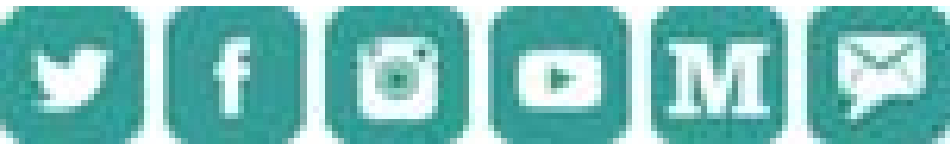
    - Determine law enforcement needs and whether the agencies need additional officers.
- **Create and distribute accessible, public messaging,**
    - General messaging about why these measures are being taken.
        - Work with communications team to create messages that:
            - Meet readability and accessibility guidelines.
            - Are culturally and linguistically relevant.
            - Are translated into the most spoken languages in the affected area.
            - Are relevant/adaptable to the changing nature of the incident/outbreak.
        - Communicate through multiple platforms and channels appropriate to the affected communities
        - Engage with community leaders or representatives for advice and buy-in.
        - Provide messages to LHJs and other partners to share with their constituents.
        - Provide consistent messaging throughout the state via media outreach.
        - Develop tailored messaging for disproportionately impacted communities.

Special Considerations

- Requires excellent communication mechanisms to notify community of details and rationale.
- Low-income families, immigrant/refugee communities, communities of color, and individuals with criminal records may be disproportionally impacted by enforcement activities.
- Requires plans/protocols for providing essential services. Plan movement of materials (e.g., food, medical supplies/services, and waste management) into and out of the cordoned area and essential services (e.g., utilities and water) to avoid additional public health issues.
- Requires detailed coordination between state, local government officials, and community organizations/leaders/groups.
- Requires law enforcement to enforce travel restrictions and maintain security at borders, but their involvement may create stress, trauma/re-traumatization, and fear for certain communities.
- Heavily affects individual income, revenue, employment, economic opportunity, and commerce.
- Limits transportation for persons requiring medical evaluation, with appropriate infection control precautions. Consider use of telehealth resources to support this need, but that telehealth may not be an accessible resource for all individuals and communities in need.
- May disproportionately impact individuals with other, non-related chronic, severe, and acute medical conditions that require ongoing/follow-up treatment or management.
- Requires plan to divert flow of critical infrastructure supplies and materials that normally move through the cordoned area.
- Requires plan to provide mental health support.
- Risk of noncompliance, particularly as length of time increases. May require enforcement for noncompliance.
- When an entire community is involved, requires cooperation with neighboring jurisdictions that may not be using a similar intervention, particularly in situations where persons live in one city and work in another and only one locale is affected by the intervention.
- Coordination with the Office of the Governor and/or local government leadership may be needed.
- Tribal nations may decide their own criteria for cordoning and any relevant security concerns.
- Families on the brink of housing insecurity may be disproportionately impacted by loss of wages, potentially increasing risk of missing rent payments, potentially increasing risk of eviction and

homelessness. Homeless individuals already experience barriers to health care, services, and information.

- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.



From:	Hayes, Patty
To:	Elsenboss, Carina; Worsham, Dennis; Karasz, Hilary
Cc:	Duchin, Jeff
Subject:	FW: Washington State Department of Health Non-Pharmaceutical Intervention (NPI) Guidance version 1.0
Date:	Thursday, February 27, 2020 2:14:00 PM
Attachments:	image001.png NPI Guidance - Intervention Overview and Implementation v1.0.pdf

fyi

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Subject: Washington State Department of Health Non-Pharmaceutical Intervention (NPI) Guidance version 1.0

Good afternoon all,

The Washington State Department of Health Non-Pharmaceutical Intervention (NPI) Guidance lists 13 Interventions to mitigate the spread of a contagious disease, such as a novel virus. It is part of the

state's Communicable Disease and Pandemic Response plan and includes personal, community, and environmental methods of control. Its purpose is to help public health officials, emergency management, and partners choose which mitigation strategies to implement to limit and prevent the spread of novel respiratory diseases of concern.

The interventions included are:

1. Increase handwashing and use of alcohol-based sanitizer
2. Respiratory hygiene and cough etiquette
3. Keep distance from others (> 6 feet)
4. Frequently clean and disinfect surfaces
5. Remain home during a respiratory illness
6. Voluntary isolation of sick persons
7. Voluntary quarantine of contacts of sick persons
8. Involuntary isolation of sick persons
9. Involuntary quarantine of contacts of sick persons
10. Order cancellation of major public and large private gatherings
11. Order closure of schools, child care facilities, workplaces, and public buildings
12. Prevent non-emergency travel outside of the home
13. Establish cordon sanitaire

You may download the full guidance document here: https://www.doh.wa.gov/Portals/1/Documents/1600/NPIGuidanceandImplementation.pdf. Please share with any pertinent partners that you feel would be appropriate. That said, please consider this document close hold.

We encourage you to take time to refresh yourself and your partners on your current mitigation and response plans related to pandemic planning or communicable disease efforts. The ultimate goal is to reduce health impacts on our communities and create a more resilient public health system.

Please consider the last four interventions, 10-13, and the steps necessary that your organization/jurisdiction would need to take to implement them. We want you to identify the partners who would be involved in carrying out of these interventions and start discussing your plans with them. DOH and other state agencies are working on more specific guidance and will be providing guidance as it becomes available.

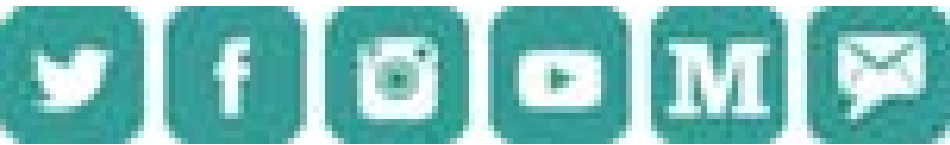
This guide was developed from the Communicable Disease and Pandemic Response Plan, Risk Matrix and Recommendations Table of Annex 4. (Document link — WA Emergency Management Division). Additionally, Center for Disease Control & Prevention (CDC) 2017 guidelines provide evidence-based recommendations on the use of NPIs in mitigating the effects of pandemic influenza. While pandemic influenza is NPI mitigation strategies are not identical to likely recommended strategies for COVID-19, these evidence-based recommendations may help in informing your agency's own strategies and implementations.

COVID-19 Webinar – February 28, 2020

Friday, February 28, 2020 at 10:00 AM DOH will provide an update on where the epidemic currently stands and what policy and planning considerations around non-pharmaceutical interventions local

elected officials, emergency managers, and public health jurisdictions should engage in.
Link **https://meet.lync.com/mil.wa.gov/chris.utzinger/1VRN9V41**. For audio, you can dial **1-877-820-7831 with access code 782831#.**

Troy Parks – 360-236-3610
Liaison Officer – Incident Management Team (IMT)
Washington State Department of Health (WSDOH)
https://www.doh.wa.gov/Emergencies/Coronavirus
Viruses don't discriminate and neither will we.

Washington State Department of Health

Non-Pharmaceutical Interventions (NPI) Implementation Guide

NPIs are mitigation strategies to limit and prevent exposure to disease. These include personal protective steps for everyday use, community containment, and environmental measures to control viral disease outbreaks and pandemics.

This guide will help you decide what NPIs to consider implementing in an outbreak. Public health officials will need to determine the appropriate set of interventions to implement in combination for a given incident.

This guide is intended for an Incident Management Team, the Department of Health, multi-agency coordination policy groups, and local health officers.

FEBRUARY 2020

Contents

NPIs

This guide lists 13 interventions to mitigate the spread of a contagious disease, such as a novel virus. It is part of the state's Communicable Disease and Pandemic Response plan and includes personal, community, and environmental methods of control.

Its purpose is to help public health officials and partners choose which mitigation strategies to implement to limit and prevent the spread of novel respiratory diseases of concern.

The interventions included are:

1. Increase handwashing and use of alcohol-based sanitizer
2. Respiratory hygiene and cough etiquette
3. Keep distance from others (> 6 feet)
4. Frequently clean and disinfect surfaces
5. Remain home during a respiratory illness
6. Voluntary isolation of sick persons
7. Voluntary quarantine of contacts of sick persons
8. Involuntary isolation of sick persons
9. Involuntary quarantine of contacts of sick persons
10. Recommend or order cancellation of major public and large private gatherings
11. Recommend or order closure of schools, child care facilities, workplaces, and public buildings
12. Prevent non-emergency travel outside of the home
13. Establish cordon sanitaire

Table 1 lists expected results on the spread of disease if each intervention were to be used, and gives examples of how each of the interventions can be done.

Transmissibility, Severity

Each intervention lists a scaled measure of transmissibility and a scaled measure of clinical severity as identified by the CDC.

- **Transmissibility** is a scale of 1 to 5, with 5 being the most contagious
- **Clinical severity** is a scale of 1 to 7, with 7 being the most severe in terms of number of cases, number of hospitalizations, and fatality ratio.

The complexity of the interventions increases as transmissibility and clinical severity increase. **Table 1** connects these scales to each intervention and **Table 2** defines them.

ESF-8 Supporting Agencies

These Emergency Support Function 8 (ESF-8) supporting agencies contribute to public health response efforts, including community mitigation strategies, in collaboration with the Department of Health as the lead agency for ESF-8.

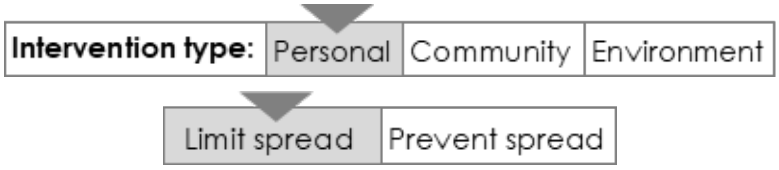
- Department of Agriculture
- Department of Ecology
- Department of Enterprise Services
- Department of Fish and Wildlife
- Department of Labor and Industries
- Department of Licensing
- Department of Social and Health Services
- Department of Transportation
- Washington Military Department
- Washington State Health Care Authority
- Washington State Patrol
- Washington State Pharmacy Association
- Washington State Office of the Attorney General
- Washington State Hospital Association
- Washington State Pharmacy Association
- Washington State Disaster Medical Advisory Committee
- Northwest Healthcare Response Network
- Local Health Officers
- Local Emergency Management Agencies
- Tribal Governments

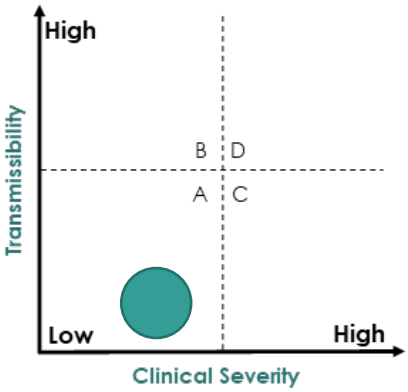
This guide was developed from the Communicable Disease and Pandemic Response Plan, Risk Matrix and Recommendations Table of Annex 4. (Document link — WA Emergency Management Division)

Intervention 1: Increase Handwashing and Use of Alcohol-Based Hand Sanitizer

Reduce probability of direct and indirect transmission of the disease by handwashing regularly with soap and water or using hand sanitizer.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Hand hygiene reduces the transmission of viruses that occurs when one person touches another with a contaminated hand, or when a person touches an object or surface that's been contaminated and then touches their own nose or face with that hand before washing it.

Success Factors: Success depends on public education effectiveness, public compliance, and access to handwashing facilities and sanitizing stations.

Possible Drawbacks: None anticipated, although there is a potential concern about the supply chain for hand sanitizer and soap.

Possible Benefits: Quick and easy to implement; effective at reducing illness due to direct/indirect contact.

Settings and Use

- Personal non-pharmaceutical interventions (NPIs) are everyday preventive actions that can help keep someone from getting and spreading respiratory illnesses transmitted by droplet routes.
- Use at homes, child care facilities, schools, workplaces, houses of worship, public transit, and other settings where people regularly gather.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers

State

Key Decision Makers: The Secretary of Health has the same authority as a local health officer (LHO) to control and prevent the spread of disease (under RCW 43.70.130), and may exercise the authority in an emergency, when LHOs agree, or when LHOs fail or are unable to act, per RCW 43.70.130(7). This includes the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Determine financial responsibility for providing handwashing stations and/or hand sanitizer.
- Research/discuss resource procurement needs:
    - Local/state/national partners
    - Private/public partners
- Develop communication strategies and communication plans.
- Engage community partnerships to promote message.

Implementation Methods

- **Create an inclusive public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.
    - Communicate on multiple platforms appropriate to the affected communities.
    - Connect with community leaders or representatives for advice and buy-in.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Provide consistent messaging throughout the state via media outreach.
    - Encourage workplaces to make handwashing a priority among employees.

- **Create and distribute accessible, public messaging**
    - Display culturally appropriate messaging in public places.
        - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.

- **Place hand-washing or hand sanitizer stations in accessible areas**
    - Deploy disinfectant stations in the following or similar locations: Bus stations, transit centers, transportation hubs, health care facilities, schools, shopping centers, entertainment venues, workplaces
        - Prioritize areas of known exposure or at increased risk of exposure.

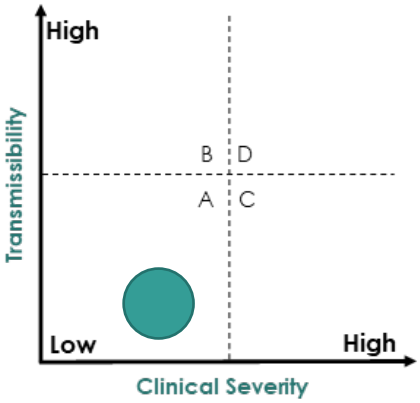
Intervention 2: Respiratory Hygiene/Cough Etiquette

Reduce probability of droplet transmission of the disease by reducing the range of respiratory droplets and aerosols from coughs, sneezes, and other sources.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D

Intervention type:	Personal	Community	Environment

Limit spread	Prevent spread



Rationale for Use as Public Health Strategy

Respiratory etiquette is widely supported in literature and by studies, and is recommended by experts as a way to control the spread of disease. Droplets from those who do not cover their coughs or sneezes can travel up to six feet. Studies of influenza transmission and practical experience in controlling influenza outbreaks reinforce that respiratory hygiene is an important factor in infection control.

Success Factors: Success depends on public education effectiveness and public compliance.

Possible Drawbacks: None anticipated. There could be potential concerns about supply chain for tissues/alcohol-based hand sanitizer.

Possible Benefits: Quick and easy to implement; effective at reducing illness due to droplet transmission.

Settings and Use

- Personal non-pharmaceutical interventions (NPIs) such as covering a cough are everyday preventive actions that can help keep persons from getting and spreading respiratory illnesses transmitted by droplets.
- Use at homes, child care facilities, schools, workplaces, houses of worship, public transit, and other settings where people regularly gather.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
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Applicable Law(s):

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- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Determine financial responsibility for providing tissues, handwashing stations, and/or hand sanitizer.
- Research/discuss resource procurement needs:
    - Local/state/national partners
    - Private/public partners
- Develop communication strategies and communication plan.
- Engage community partnerships to promote key messages.

Implementation Methods

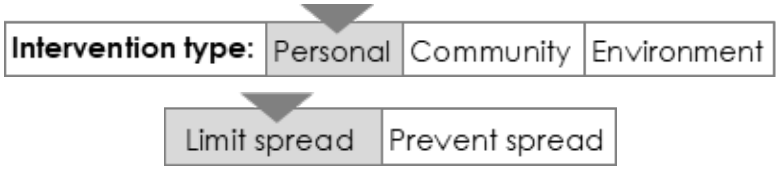
- **Create an inclusive public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.

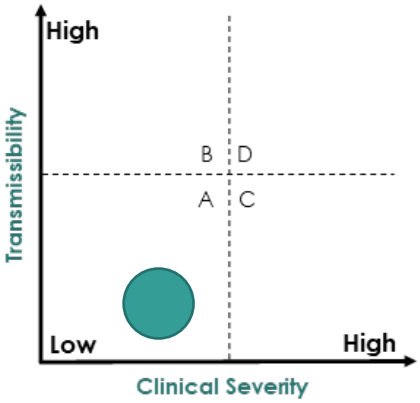
    - Communicate on multiple platforms appropriate to the affected communities
    - Connect with community leaders or representatives for advice and buy-in.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Provide consistent messaging throughout the state via media outreach.
- **Create and distribute accessible, public messaging**
    - Display culturally appropriate messaging in public places.
        - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
        - Flyers should be translated into locally appropriate languages.
- **Provide respiratory hygiene stations in accessible areas.**
    - Provide tissues and waste receptacle at every public hand sanitizer station in accessible areas.
    - Consider bus stations, transit centers, transportation hubs, health care facilities, schools, shopping centers, entertainment venues, etc.
        - Prioritize areas of known exposure or at increased risk of exposure.

Intervention 3: Keep distance from others (> 6 feet)

Reduce probability of direct and droplet transmission by reducing the number of interpersonal contacts.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Keeping distance from others is the most basic form of social distancing that reduce opportunities for person-to-person virus transmission and can help delay and slow the exponential growth of disease spread. It's a common-sense approach to limit disease spread by limiting contact and possible exposures. Droplets from those who do not cover their coughs or sneezes can travel up to six feet. Keeping distance from others if you are sick or from others who may be sick is limits possible spread.

Other more restrictive forms of social distancing are discussed in later interventions and include closure of buildings, isolation and quarantine. The optimal strategy may be to implement several social distancing measures simultaneously where groups of people gather.

Success Factors: Success depends on public education effectiveness and public compliance.

Possible Drawbacks: Certain cultural and religious groups may be unwilling or unable to comply due to conflict with cultural/religious norms or practices. Persons may feel anxious, worried, or fearsome due to being socially distant from others.

Possible Benefits: Quick and easy to implement; effective at reducing illness due to droplet transmission.

Settings and Use

- Personal NPIs such as keeping distance from others who may be sick are everyday preventive actions that can help keep persons from getting and spreading respiratory illnesses transmitted by droplets. Diseases are transmitted by direct contact, indirect contact, droplet, and/or airborne routes. Ill persons can spread illness everywhere they go and surfaces they touch.
- Use at homes, child care facilities, schools, workplaces, houses of worship, public transit, and other settings where people regularly gather.
- Examples that reduce in-person contact include: telecommuting instead of meeting in-person, staggering work hours, spacing workers further apart at the worksite, limiting non-essential travel, and avoiding close contact with people who are sick.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers

State

Key Decision Makers: The Secretary of Health also has the same authority as local health officers (LHO) to control and prevent the spread of disease (under RCW 43.70.130), and may exercise the authority in an emergency or when LHO(s) agree or fail or are unable to act, per RCW 43.70.130(7). This includes the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Implementation Methods

- **Create an inclusive public messaging campaign**
  - Work with communications team to create messages that:
    - Are culturally competent and at an appropriate reading level.
    - Are translated into the most spoken languages in the affected area.
    - Are relevant to the changing nature of the incident/outbreak.
  - Communicate on multiple platforms appropriate to the affected communities
  - Connect with community leaders or representatives for advice and buy-in.
  - Provide messages to LHJs and other partners to share with their constituents.
  - Provide consistent messaging throughout the state via media outreach.
- **Create and distribute accessible, public messaging**
  - Display culturally appropriate messaging in public places.
    - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
    - Connect with community leaders or representatives for advice.
    - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
    - Flyers should be translated into locally appropriate languages.

Decisional Objectives/Key Decision Points

- Communication strategies and communication plan
    - Outreach to major employers
    - Community and faith-based partners
    - Schools, child care facilities, and other settings where people regularly gather
- Social distancing on public transit
- Social distancing for ill persons or the public at large

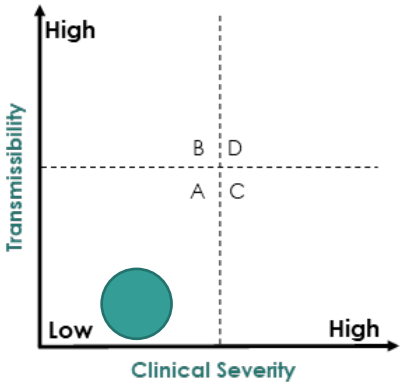
Intervention 4: Frequently Clean and Disinfect Personal Surfaces

Reduce probability of indirect transmission of the disease by disinfecting fomites, or objects that can carry infection. This includes doorknobs, phones, keyboards, etc.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D

Intervention type:	Personal	Community	Environment

Limit spread	Prevent spread



Rationale for Use as Public Health Strategy

Contact transmission (i.e., hand transfer of virus from contaminated objects to the eyes, nose, or mouth) is a recognized route of virus spread. The routine use of disinfection measures that eliminate viruses from contaminated surfaces might reduce the spread of viruses.

Success Factors: Success depends on public education effectiveness, public compliance, and access to appropriate disinfectants at home.

Possible Drawbacks: Lack of available cleaning supplies.

Possible Benefits: Environmental disinfection is effective at reducing illness due to indirect contacts (fomites).

Settings and Use

- Environmental NPIs include routine disinfection of surfaces that helps to eliminate viruses from frequently touched surfaces and objects, such as phones, toys, keyboards, desks, and doorknobs.
- Disinfect homes, child care facilities, schools, workplaces, houses of worship, other settings where people regularly gather, and all frequently touched surfaces with a disinfectant labeled to kill viruses and bacteria.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

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Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Determine communication strategies and communication plan.
  - Outreach to major employers
  - Community and faith-based partners
- Research/discuss resource procurement needs, including fiscal responsibility:
  - Local/state/national partners
  - Private/public partners
- Engage business and community partnerships to implement and promote messages.

Implementation Methods

- **Create an inclusive public messaging campaign**
  - Work with communications team to create messages that:
    - Are culturally competent and at an appropriate reading level.
    - Are translated into the most spoken languages in the affected area.
    - Are relevant to the changing nature of the incident/outbreak.
  - Communicate on multiple platforms appropriate to the affected communities
  - Connect with community leaders or representatives for advice and buy-in.
  - Provide messages to LHJs and other partners to share with their constituents.
- **Create and distribute accessible, public messaging**
  - Display culturally appropriate messaging in public places.
    - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.

        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
- **Distribute disinfectant in accessible locations**
    - Deploy disinfectant stations in the following locations: Bus stations, transit centers, transportation hubs, health care facilities, schools, shopping centers, grocery stores, entertainment venues, and other areas where community members gather.
        - Prioritize areas of known exposure or increased risk of exposure.

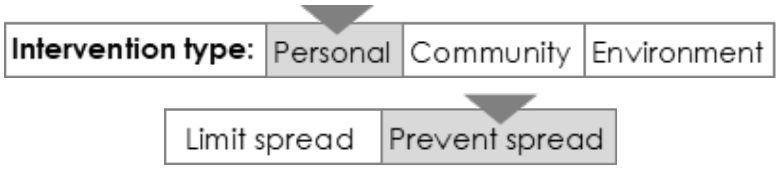
Decisional Objectives/Key Decision Points

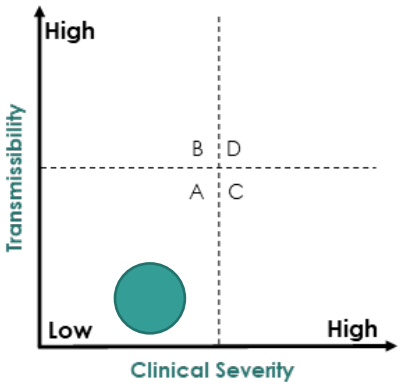
- Determine communication strategies and communication plan.
    - Outreach to major employers
    - Community and faith-based partners
- Research/discuss resource procurement needs, including fiscal responsibility:
    - Local/state/national partners
    - Private/public partners
- Engage business and community partnerships to implement and promote messages.

Intervention 5: Remain Home When Sick with Respiratory Illness

Reduce probability of transmission by preventing contacts between well and sick people.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Staying home while sick will prevent spreading illness to others in your community. You can also create social distance at home and prevent spreading the illness to others in your household by staying in a specific room and away from your household members as much as possible and using a separate bathroom (if available).

Success Factors: Success depends on the individual's willingness and ability to stay home from work/school/events including access to paid sick leave.

Possible Drawbacks: Many members of the public will be reluctant to stay home due to risk of lost wages and limited or no access to paid sick leave.

Possible Benefits: This is a form of voluntary isolation which is extremely effective in reducing the spread of illness if ill persons comply consistently.

Settings and Use

- Diseases are transmitted by direct contact, indirect contact, droplet, and/or airborne routes. Ill persons can spread illness everywhere they go and surfaces they touch.
- This NPI is used at home to stop spread of disease in public places. It can also be used by employers to request sick employees not come to work.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
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Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Communication strategies and communication plan.
    - Communicate with major employers.
    - Perform outreach to community and faith-based partners.
- Reference available guidance on duration of illness.
- Evaluate economic impact of ill persons without paid sick leave.

Implementation Methods

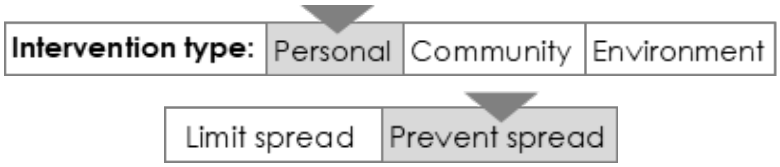
- **Create an inclusive public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.
    - Communicate on multiple platforms appropriate to the affected communities
    - Connect with community leaders or representatives for advice and buy-in.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Provide consistent messaging throughout the state via media outreach.
- **Create and distribute accessible, public messaging**
    - Display culturally appropriate messaging in public places.
        - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
    - Co-locate messaging or publications with sanitizer stations and tissues.
- **Work with employers**
    - Have employers review and communicate their sick leave policies, flexible leave policies, and alternate work schedules with employees to encourage sick employees to stay home and prevent the spread of illness at work.
    - Use current relationships with employers to ask employees to stay home if they are ill.

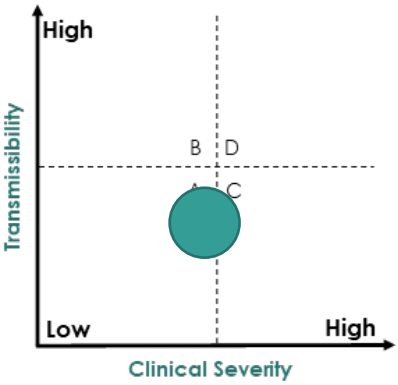
- Suggest allowing employees to work from home. If this is already an option, consider working with HR to be more flexible and inclusive.
- Consider an emergency/temporary change in sick leave policy; allowing an employee to use sick leave proactively and earn it back retroactively.
    - This can decrease the hesitancy on the employees' part to stay home and increase participation in voluntary quarantine.

Intervention 6: Voluntary Isolation of Sick Persons

Reduce probability of transmission by preventing contact between well and sick people.

Transmissibility (1-5)	2
Clinical severity (1-7)	2-5
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Personal non-pharmaceutical interventions are everyday preventive actions that can help keep persons from getting and spreading respiratory illnesses transmitted by droplets. Voluntary isolation is a form of social distancing and prevents a sick person from infecting other people outside of their isolation location. Historically, isolation measures can help prevent the spread of infectious diseases by stopping the person-to-person spread of virus via contaminated droplets generated by coughs and sneezes, and have been shown to delay the peak of an influenza pandemic.

Success Factors: Effective education and ability to comply with request. Material routine support and services (e.g. laundry, food) and working with the employer may help compliance.

Possible Drawbacks: Non-compliance with voluntary isolation increases risk of disease transmission; isolation is difficult to enforce.

Possible Benefits: Isolation is extremely effective in consistently reducing the spread of illness. Voluntary isolation is “less restrictive” and more acceptable to the public.

Settings and Use

- Voluntary isolation of a sick person involves remaining home, at a health care facility, or at another designated isolation facility.
- Isolation is used for persons infected with a contagious disease to separate them from people who are not sick.
- For isolation and quarantine measures, state law requires making reasonable efforts to obtain voluntary compliance unless doing so would create a risk of serious harm (WAC 246-100-040(1)(a)). It is good public health policy, and it's also legally required.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers:

Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Local health officers (and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7)) have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine

State

In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease and issue isolation and quarantine orders. The Secretary also has authority to investigate disease outbreaks and advise local health officers on measures to be taken in response.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)
- WAC 246-101-105 – Duties of the healthcare provider

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Decisional Objectives/Key Decision Points

- Create communication strategies and plan for:
  - Health care providers
  - Major employers
  - Community and faith-based partners
- Create guidance and/or education resources for patients and health care providers, including monitoring forms.
- Identify isolation facility for individual(s).
- Determine need for material support and services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing services.
- Movement plan for sick persons to a health care facility (if needed)
- Personal Protective Equipment (PPE) needed for persons providing support to sick persons in isolation.
- Determine type of monitoring:
  - Self-monitoring (what will be monitored, frequency, reporting)
  - Active monitoring (phone, video, or in-person; frequency; responsible staff)
  - Other type
- Plan the logistics for specimen collection and providing other medical services, if needed.
- Determine when to release from isolation and process for notification.

Implementation Methods

- **Health officer requests that a patient self-isolate**
  - Letter should be on official department letterhead, with a wet or electronic signature from the health officer. While a wet signature may be more impactful, it is not a legal requirement. It may be more efficient and avoid delay to use an e-signature under certain circumstances.
  - Letter should include additional information resources for providers, including phone numbers, websites, and other relevant resources.

- **Instruct health care providers to educate patients**
    - Work with communications teams to distribute a health alert to all providers in Washington.
        - Attach information or a publication to the alert that can be printed and displayed in waiting areas and treatment rooms.
        - Distribute a health alert to all relevant providers about the health officer's request.
- **Engage community organizations and faith-based organizations**
    - Work within already established relationships with community and faith-based partners.
        - If faith-based and community partners receive your health alerts, consider creating a separate alert for them with relevant information to the communities and individuals they serve.
        - Be willing to speak to their leadership/elders/members regarding the situation (within reason) and why we are making this ask.

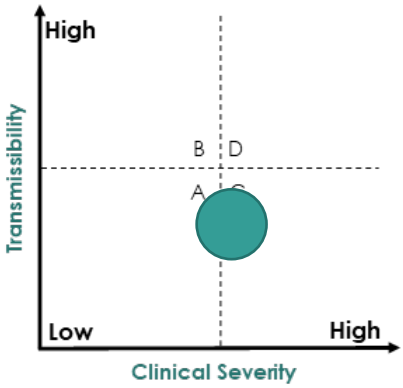
Intervention 7: Voluntary Quarantine of Contacts of Sick Persons

Reduce probability of transmission in the event that the contact becomes contagious before symptoms developed.

Transmissibility (1-5)	2
Clinical severity (1-7)	2-5
Recommend implementing at	A, B, C, D

Intervention type: Personal | Community | Environment

Limit spread | Prevent spread



Rationale for Use as Public Health Strategy

Quarantine refers to the separation and restriction of movement of persons who, while not yet ill, have been exposed to an infectious agent and therefore may become ill. Quarantine of exposed persons is a public health mitigation strategy intended to stop the spread of infectious disease. It is effective in protecting the public from disease.

Certain infected (but not yet symptomatic) individuals may spread illness and could unknowingly infect friends, neighbors, and others in the community before symptoms begin. Therefore, all contacts exposed to a sick person could be asked to voluntarily stay home for a specified period of time to assess for early signs of infection. If other household members of the contact become ill during this period, then the time for voluntary home quarantine may be extended for another incubation period. Quarantine at a designated facility (in lieu of home setting) also can be considered.

Success Factors: Effective contact tracing and individual ability to comply with request. Material support with material routine support and services (e.g. laundry, food) and working with the employer may help to encourage compliance.

Possible Drawbacks: Non-compliance increases risk of disease transmission.

Possible Benefits: Quarantine may allow quick identification of a suspect case and helps to prevent exposures early in the course of illness.

Settings and Use

- To avoid potential spread of the disease, consider use of voluntary quarantine for contacts who are exposed to a sick person but are not showing symptoms.
- Settings: At home or at a designated facility.
- For isolation and quarantine measures, state law requires making reasonable efforts to obtain voluntary compliance unless doing so would create a risk of serious harm (WAC 246-100-040(1)(a)). It is good public health policy, and it's also legally required.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Local health officers (and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7)) have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine
- WAC 246-101-105 – Duties of the healthcare provider

State

In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease and issue isolation and quarantine orders. The Secretary also has authority to investigate disease outbreaks and advise local health officers on measures to be taken in response.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)
- WAC 246-101-105 – Duties of the healthcare provider

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Decisional Objectives/Key Decision Points

- Definition of "close contact" (including length of exposure to ill person, travel history, etc.)
- Location(s) of quarantine facility (home, government facility, etc.)
- Length of quarantine
- Communication strategies and plan
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan for moving persons under quarantine to a health care facility if they develop symptoms
- Determine type of monitoring:
    - Self-monitoring (what will be monitored, frequency, reporting)
    - Active monitoring (phone, video, or in-person; frequency; responsible staff)
    - Other type
- Plan the logistics for specimen collection and providing other medical services, if needed.
- Determine when to release from quarantine and process for notification.

Implementation Methods

- **Health officer request for person to self-quarantine**
    - Letter should be on official department letterhead, with a wet or electronic signature from the health officer. While a wet signature may be more impactful, it is not a legal requirement. It may be more efficient and avoid delay to use an e-signature under certain circumstances.
    - The letter should include additional resources for providers, including phone numbers, websites, and other relevant resources.
- **Engage community-based and faith-based organizations to support**
    - Work within already established relationships with community-based and faith-based partners.
        - Consider creating and sending a custom health alert for them with relevant information to the communities and individuals they serve.
        - Be willing to speak to their leadership/elders/members regarding the situation (within reason) and why we are making this ask.
- **Work with employers**
    - Use current relationships with employers to support employees in voluntary quarantine due to exposure to sick contacts.

        - Suggest allowing employees to work from home. If this is already an option, consider working with human resources to be more flexible and inclusive.
        - Consider an emergency/temporary change in sick leave policy; allowing an employee to use sick leave proactively and earn it back retroactively.
            - This can decrease the hesitancy on the employees' part to stay home and increase participation in voluntary quarantine.
- **Create a public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.
    - Communicate on multiple platforms appropriate to the communities of affected persons.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Send a health alert to health care providers.

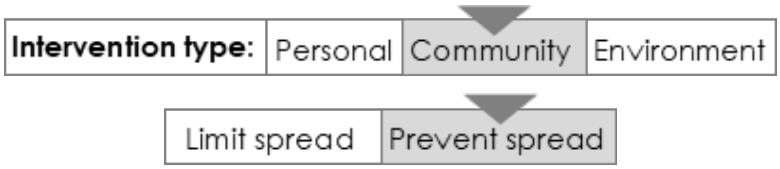
Special Considerations

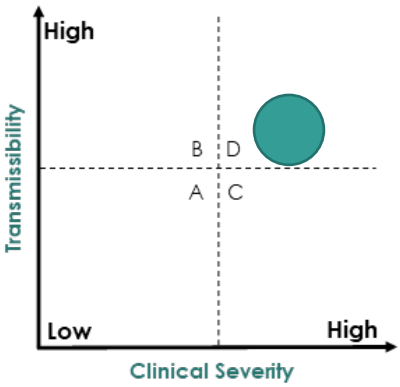
- Consider dedicating a phone line to answer questions that may follow the request for quarantine.
- Work with communications staff to translate materials as needed for community-based and faith-based organizations, community partners, and employers.
- Sovereign tribal nations may decide their own criteria for quarantine.
- Consider use of telemedicine options and home assessment teams for medical support and backup. The idea that medical health is available may help reduce anxiety.

Intervention 8: Involuntary Isolation of Sick Persons

Reduce probability of transmission by preventing contact between well and sick people.

Transmissibility (1-5)	3
Clinical severity (1-7)	5-6.5
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Isolation prevents a sick person from infecting others outside of their isolation location. Historically, isolation measures have helped to prevent the spread of infectious diseases, such as influenza, by stopping the person-to-person spread of virus via contaminated droplets from coughs and sneezes.

Success Factors: Success depends on health care facility and/or public health system ability to implement. Clearly communicate with affected communities about the rationale for use of isolation, and the responsibility for public officials to protect the safety and health of a community from communicable illnesses of high severity and high transmissibility.

Possible Drawbacks: Involuntary isolation is extremely restrictive and resource intensive. It limits personal liberties and can be controversial.

Possible Benefits: Isolation is effective in reducing the spread of illness. Use of involuntary isolation is a method to force compliance to the measure.

Settings and Use

- Isolation separates sick persons with a contagious disease from people who are not sick.
- Involuntary isolation is only recommended when an individual is not reliable or compliant with voluntary isolation for a disease that is highly severe and highly transmissible.
- For isolation and quarantine measures, state law requires making reasonable efforts to obtain voluntary compliance unless doing so would create a risk of serious harm (WAC 246-100-040(1)(a)). It is good public health policy, and it's also legally required.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: The local health officer and/or Secretary of Health may issue a detention order for involuntary isolation when they have reason to believe the person is infected with a communicable disease and poses a serious and imminent risk to the health and safety of others if not isolated. The local health officer must first make reasonable efforts to obtain voluntary

compliance, unless doing so would create a risk of serious harm. An order directly from a local health officer may last for up to 10 days. A court may order a longer period of isolation. Violation of an isolation order is a misdemeanor for which individuals may be arrested, fined, and imprisoned up to 90 days.

Local health officers, and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7), have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine
- WAC 246-100-070 – Enforcement of local health officer orders
- WAC 246-101-105 – Duties of the healthcare provider
- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- RCW 70.05.120(4) – Violations – Remedies - Penalties (misdemeanor for violation of an order)

Forms (find all instructions and forms on DOH's website):

- Emergency Involuntary Detention Order (Word)
  In addition to the form available at the link above, a COV-19 specific involuntary detention order is available. Please contact DOH for use.
- Confidential Schedule (Word)
  A local health officer may issue an isolation order immediately. Such an order is subject to court challenge. A court order is required to isolate an individual for longer than 10 days. Law enforcement may arrest an individual for violating a local health officer's or a court order. A court order is also enforceable through contempt proceedings.

  When no attempt is made to seek voluntary compliance due to the serious and imminent risk to the public, use the following forms:
- Summons (Word)
- Detention ex parte petition (Word)
- Confidential schedule (Word)
- Declaration supporting ex parte detention petition (Word)
- Order ex parte for involuntary detention (Word)

When voluntary compliance was sought, but the individual refused or otherwise indicated they would not comply, use the following forms:

- Summons (Word)
- Detention ex parte petition when voluntary detention refused (Word)
- Confidential schedule (Word)
- Declaration supporting ex parte detention petition when voluntary detention refused (Word)
- Order ex parte when voluntary detention refused (Word)

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. Tribal nations may decide their own criteria for isolation.

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Decisional Objectives/Key Decision Points

- Language for health officer order and involuntary detention court orders.
- Location(s) for isolation.
- Personal Protective Equipment (PPE) requirements for health care workers providing care for sick persons.
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan of moving sick persons under isolation to treatment facility, if isolated outside of a health care facility.
- Plans and logistics for specimen collection or providing other medical services, if needed.
- Communication strategies and plan to communicate decisions
    - Affected individuals and community members
    - Public, media, public officials
- Due process: understand and prepare for the rights of the affected patient if due process is initiated. Communicate steps for due process, such as administrative hearings, court review, or notification of right to object. Protect patient rights to privacy and restrictions on who can and cannot be notified (e.g., family member, employer)
- Plan to manage non-compliance with isolation. Identify progressively restrictive steps, up to court-ordered detention. Identify decision point for ordering person to a more restrictive location. Identify who will issue order and transport process.
- Determine when to release from isolation and process for notification.

Implementation Methods

- **Health officer order for emergency detention**
    - Once the person is ordered into isolation, the local health officer should seek a court order and must consider individual rights to due process. Seeking a court order quickly is a good idea if isolation sought is more than 10 days.
    - The needs of a person isolated or quarantined must be addressed to the greatest extent possible in a systematic and competent fashion, including, but not limited to, providing adequate food, clothing, shelter, means of communication with those in isolation or quarantine and outside these settings, medication, and competent medical care. Cultural and religious beliefs should be considered in addressing their needs.
- **Standing orders within a hospital**
    - Work with the hospital facility or designated health care provider and the health officer to create standing orders for the care of individuals in involuntary isolation.

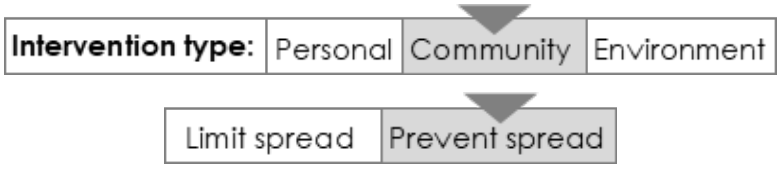
Special Considerations

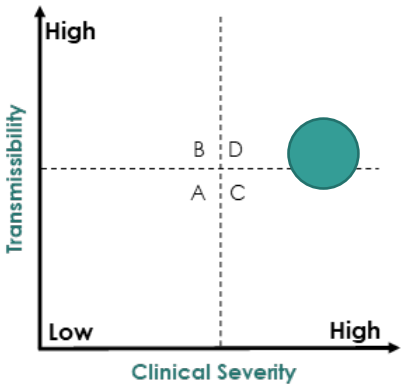
- Food, water, basic needs, and other support services for isolated patients.
- This intervention requires detailed coordination between state and local government officials.
- Court orders for involuntary isolation may be required.
- Tribal nations may decide their own criteria for isolation.
- When the individual is released, consider providing them with a letter that recognizes their release so they will not be mistakenly reported as not complying with the isolation order.

Intervention 9: Involuntary Quarantine of Contacts of Sick Persons

Reduce probability of transmission in the event that the contact becomes contagious before symptoms developed.

Transmissibility (1-5)	3
Clinical severity (1-7)	5-6.5
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Quarantine refers to the separation and restriction of movement of persons who, while not yet ill, have been exposed to an infectious agent and therefore may become infectious. Quarantine of exposed persons is a public health strategy intended to stop the spread of infectious disease. Quarantine is medically very effective in protecting the public from disease.

Certain infected but not yet symptomatic individuals may unknowingly infect friends, neighbors, and others in the community before becoming symptomatic.

In situations of highly transmissible and clinically severe infections where there are asymptomatic contacts who are not willing to quarantine, authorities may want to consider involuntary quarantine of contacts of sick persons to prevent possible disease spread, especially for novel pathogens of concern.

Success Factors: Success depends on health care facility and/or public health system ability to implement.

Possible Drawbacks: Involuntary quarantine is extremely restrictive and resource intensive.

Possible Benefits: Quarantine is extremely effective in reducing the spread of illness. Non-compliant persons can be prevented from spreading the disease.

Settings and Use

- Consider using involuntary quarantine for contacts who are not reliable or compliant and who were exposed to a sick person but are asymptomatic to avoid potential spread of disease.
- Involuntary quarantine at a designated facility is only recommended when an individual is not reliable or compliant.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: The local health officer and/or Secretary of Health may issue a detention order for involuntary quarantine when they have reason to believe the person is, or is suspected

to be, infected with or exposed to a communicable disease and poses a serious and imminent risk to the health and safety of others if not quarantined. The local health officer must first make reasonable efforts to obtain voluntary compliance, unless doing so would create a risk of serious harm. An order directly from a local health officer may last for up to 10 days. A court may order a longer period of quarantine. Violation of a quarantine order is a misdemeanor for which individuals may be arrested, fined, and imprisoned up to 90 days.

Local health officers, and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7), have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine
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- RCW 43.20.050 - Powers and Duties of the State Board of Health
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- RCW 70.05.070 – Local health officer – powers and duties
- RCW 70.05.120(4) – Violations – Remedies - Penalties (misdemeanor for violation of an order)

Forms (find all instructions and forms on DOH's website):

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- Confidential Schedule (Word)
- A local health officer may issue an isolation order immediately. Such an order is subject to court challenge. A court order is required to isolate an individual for longer than 10 days. Law enforcement may arrest an individual for violating a local health officer's or a court order. A court order is also enforceable through contempt proceedings.

When no attempt is made to seek voluntary compliance due to the serious and imminent risk to the public, use the following forms:

- Summons (Word)
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- Confidential schedule (Word)
- Declaration supporting ex parte detention petition (Word)

- Order ex parte for involuntary detention (Word)

When voluntary compliance was sought, but the individual refused or otherwise indicated that he or she would not comply, use the following forms:

- Summons (Word)
- Detention ex parte petition when voluntary detention refused (Word)
- Confidential schedule (Word)
- Declaration supporting ex parte detention petition when voluntary detention refused (Word)
- Order ex parte when voluntary detention refused (Word)

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
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- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Tribal

- Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. Tribal nations may decide their own criteria for isolation.

Decisional Objectives/Key Decision Points

- Language for health officer order and involuntary detention court orders.
- Definition of "close contact" (including length of exposure to ill person, travel history, etc.)
- Location(s) of quarantine facility (home, government facility, etc.)
- Length of quarantine
- Communication strategies and plan
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan to move persons under quarantine to a health care facility if they develop symptoms
- Plans and logistics for specimen collection or provision of other medical services, if needed.
- Active monitoring for persons under quarantine

Implementation Methods

- **Health officer order for emergency detention**
    - Once the person is ordered into quarantine, the local health officer should seek a court order and must consider individual rights to due process. Seeking a court order quickly is a good idea if isolation sought is more than 10 days.
    - The needs of a person isolated or quarantined must be addressed to the greatest extent possible in a systematic and competent fashion, including, but not limited to, providing adequate food, clothing, shelter, means of communication with those in isolation or

quarantine and outside these settings, medication, and competent medical care. Cultural and religious beliefs should be considered in addressing their needs.

- **Standing orders within a hospital**
    - Work with the hospital facility or designated health care provider and the health officer to create standing orders for the care of individuals in involuntary quarantine.

Special Considerations

- Food, water, basic needs, and other support services for quarantined individuals.
- This intervention will require detailed coordination between state and local government officials.
- Court orders for involuntary isolation may be required.
- Tribal nations may decide their own criteria for isolation.
- When the individual is released, consider providing them with a letter that recognizes their release so they will not be mistakenly reported as not complying with the quarantine order.

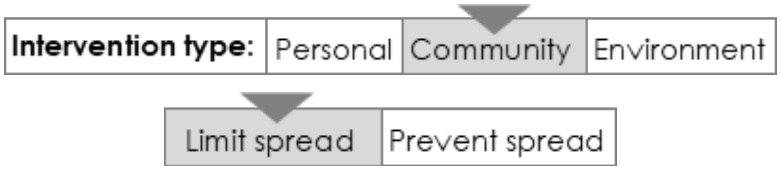
Decisional Objectives/Key Decision Points

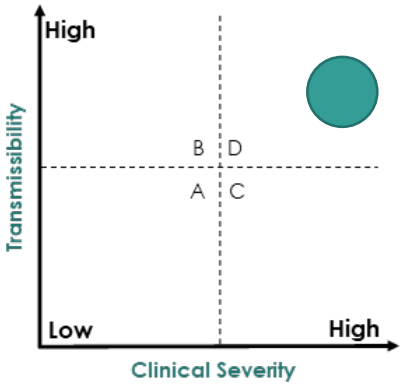
- Language for health officer order and involuntary detention court orders.
- Definition of “close contact” (including length of exposure to ill person, travel history, etc.)
- Location(s) of quarantine facility (home, government facility, etc.)
- Length of quarantine
- Communication strategies and plan
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan to move persons under quarantine to a health care facility if they develop symptoms
- Plans and logistics for specimen collection or provision of other medical services, if needed.
- Active monitoring for persons under quarantine

Intervention 10: Recommend or Order Cancellation of Major Public and Large Private Gatherings

Reduce probability of transmission by reducing the number of the interpersonal contacts.

Transmissibility (1-5)	4
Clinical severity (1-7)	5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Social distancing measures, such as cancellation or postponement of mass gatherings, reduce opportunities for person-to-person virus transmission and can help delay the spread and slow the exponential growth of disease spread. The optimal strategy is to implement these measures simultaneously in places where people gather.

Canceling mass gatherings, in combination with other social distancing measures (e.g., patient isolation, quarantine of exposed persons, and school closures), may help reduce virus transmission.

Success Factors: Success depends upon event sponsor compliance and authorities' ability to enforce effectively.

Possible Drawbacks: May result in revenue loss, public outrage, or political backlash, and may disproportionately affect certain cultural and community groups.

Possible Benefits: Reduces opportunities for widespread disease transmission by reducing interpersonal contacts and increasing social distance.

Settings and Use

- Social distancing measures can be implemented in a range of community settings, including public places where people gather (e.g., parks, houses of worship, theaters, sports arenas).
- Modifying, cancelling, or postponing events is an approach that might reduce face-to-face contact in community settings.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods. This includes issuing orders to cancel events.

Key Stakeholders: Decision should be made in coordination with local elected officials (such as mayor, city council, county council, and/or county executive), emergency managers, local law enforcement, impacted businesses, proprietors, cultural and religious leaders, event sponsors and event organizers.

Applicable Law(s) for Decision Makers:

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders

State

Key Decision Makers: In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease and issue orders to cancel events. The Secretary of Health also has the authority to promote public health activities and educational campaigns.

The Governor has broad authority to proclaim a state of emergency in order to preserve life, health, property, or the public peace (RCW 43.06.220). A governor declared emergency could trigger limitations such as curfews, prohibitions of people on streets and open areas, limit use of streets, highways or public ways; or other broad restrictions outlined by the law, such as prohibiting travel.

Washington's laws against discrimination are outlined in RCW 49.60. Public officials should consider how communities may be impacted and take action to remove stigma that may marginalize or discriminate against groups.

Applicable Law(s):

- RCW 43.06.220 – State of emergency – powers of governor pursuant to proclamation
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)
- RCW 49.60 – Discrimination – Human Rights Commission

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. They may decide their own criteria for canceling large gatherings.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders.

Applicable Law(s):

- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services

Decisional Objectives/Key Decision Points

- Establish guidance/requirements needed to request or order the cancellation of gatherings.
- Identify affected events and disproportionately impacted communities.
    - Research upcoming cultural and religious holidays, observances, and events.
    - Assess economic impact for both individuals and larger communities (loss of wages, tourism revenue)
- Plan community engagement efforts, methods, and approaches that are responsive to the needs, preferences, and values of the community.
- Develop strategies to gain buy-in from event organizers and leadership
- Plan for enforcement of cancellations
    - Partner with trusted community leaders
    - Assess need, benefit, and potential unintended consequences of working with law enforcement/security personnel.
    - Create mitigation strategies, as needed, to address any real, potential, or perceived issues or consequences of enforcement activities.
- Determine whether events should be pre-emptively canceled.
- Proactively address unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Healthcare Considerations

- Consider impact on the healthcare system and their current capacity and if the intervention would reduce or increase burden.
- Determine if implementation would mitigate burden on health care system to maintain essential medical services, especially for underserved populations.
- Identify if this would decrease or increase absenteeism among health care workers.
- Potential legal and ethical issues involving altered standards of care.

Implementation Methods

- **Health officer order or request that major government-sponsored events/gatherings be cancelled or postponed.**
    - Meet with event organizers, committees and employees.
        - Explain the situation
        - Offer alternatives, if any, including new location, rescheduling the event, or changing entrance rules.
    - Government-sponsored events or gatherings may be affected anyway due to the Continuity of Operations Plan.
    - Work with public information officers/communication teams to get the information out with relevant Q&As and FAQs
- **Create and distribute accessible, public messaging about closures**
    - General messaging about why these measures are being taken.

        - Work with communications team to create messages that:
            - Meet readability and accessibility guidelines.
            - Are culturally and linguistically relevant.
            - Are translated into the most spoken languages in the affected area.
            - Are relevant/adaptable to the changing nature of the incident/outbreak.
        - Communicate through multiple platforms and channels appropriate to the affected communities
        - Engage with community leaders or representatives for advice and buy-in.
        - Provide messages to LHJs and other partners to share with their constituents.
        - Provide consistent messaging throughout the state via media outreach.
        - Develop tailored messaging for disproportionately impacted communities.
    - Specific messaging about the cancellation of specific events.
        - Display appropriate messaging in places where attendees may see them.
        - Work with event organizers and to use their communication methods.

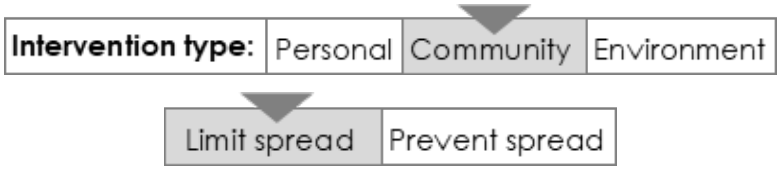
Special Considerations

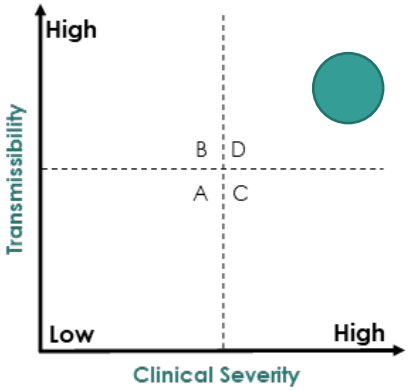
- Requires excellent and effective communication mechanisms to notify community of details and rationale. Communications must be culturally relevant and in a language and format that the audience can understand to be effective.
- Any attempts to implement social distancing in cultural & religious gatherings should be informed by cultural & religious leaders.
- Canceling events could affect civic participation and social cohesion. It could also create an opportunity for discrimination if only certain events are closed.
- Postponing the event may benefit or negatively impact employees as well as attendees or participants, depending on the event and the individual's role.
- This intervention will require detailed coordination between state, local government officials, and community organizations/leaders/groups.
- This intervention will require detailed coordination with the event organizers and planners.
- Cancellation of large events may affect individual income, revenue, employment, economic opportunity, and commerce.
- Coordination with the Office of the Governor and/or local government leadership may be needed.
- There should be consistency in which events are cancelled. Cancellation should not be based on the communities likely to attend or work at the event.
- Culturally and religiously diverse communities may be disproportionally impacted.
- Families on the brink of housing insecurity may be disproportionately impacted by loss of wages, potentially increasing risk of missing rent payments, potentially increasing risk of eviction and homelessness. Homeless individuals already experience barriers to health care, services, and information.
- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.

Intervention 11: Recommend or Order Closure of Public or Private Sites within impacted communities

Viruses quickly and easily spread in places where people gather in close contact, such as schools, child care facilities, workplaces, and public buildings. Dismissing or closing such facilities may be considered to limit disease spread by reducing the number of interpersonal contacts.

Transmissibility (1-5)	4
Clinical severity (1-7)	5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Social distancing measures, including closure of buildings, reduce opportunities for person-to-person virus transmission and can help delay the spread and slow the exponential growth of disease spread. If disease spread is occurring in a school, child care facility or public building, dismissing students, staff, or the public from these locations or closing the locations early can limit further spread. The optimal strategy may be to implement several social distancing steps simultaneously where large groups of people gather.

Success Factors: Early implementation of dismissals or closures to limit spread. Facility compliance and authorities' ability to enforce effectively.

Possible Drawbacks: May result in missed school days, revenue loss, public outrage, or political backlash. It may disproportionately affect certain cultural and community groups. Low income and other vulnerable communities may be put at risk for non-outbreak related harm if they are unsupervised, don't have access to an adult caretaker, or cannot communicate with the outside world if there is an emergency. It may cause disruption for families and communities. Adults may experience missed work and loss of income from their workplace closure or to stay home to care for children.

Possible Benefits: Reduces opportunities for widespread disease transmission by reducing interpersonal contacts and increasing social distance.

Settings and Use

Specific priority settings include schools, child cares, workplaces, meetings, and other places where people gather (e.g., parks, religious institutions, theaters, and sports arenas).

Early dismissal or closing facilities is a social distancing measure that may reduce face-to-face contact in community settings to reduce the spread of diseases transmitted by contact, droplets, or air. Choose social distancing measures depending on the severity of the disease.

School or child care: Examples of social distancing, closures and dismissals could include:

- Dismissing or cancelling classes and use web-based distance learning instead
- Pre-emptive, coordinated school closures or dismissals at child care facilities, K–12 schools, and institutions of higher education.
- Canceling school concerts, after-school programs, or sporting events.

Workplaces and public buildings: Many work settings involve shared work space, equipment, and face-to-face contact. Public buildings can bring many people into close contact. Examples of social distancing for these settings include telecommuting and remote-meeting options in workplaces.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

When there is a potential for an outbreak within a school or childcare center, local health officers have the authority to order school superintendents and childcare center administrators to close their facilities, cancel events, and/or exclude students, staff, and volunteers.

Key Stakeholders: Decision should be made in coordination with school superintendents, boards of education, local elected officials (such as mayor, city council, county council, and/or county executive), child care administrators, private sector, emergency managers, local law enforcement, impacted businesses, proprietors, event sponsors and event organizers.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders
- WAC 246-110-020 – Control of contagious disease (schools and childcare centers)

State

Key Decision Makers: In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease. The Secretary of Health also has the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department of Health created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)

- RCW 49.60 – Discrimination – Human Rights Commission

Tribal

- Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. They may decide their own criteria for canceling school, child care, and tribal facilities.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders.

Applicable Law(s):

- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services

Decisional Objectives/Key Decision Points

- Scale of closures (e.g. specific schools, districts, ages, geographic regions)
- Identify affected facilities
- Determine whether closure is limited to certain at-risk groups or applies to the general public.
- Length of closure
- Determine building cleaning protocols, if needed.
- Personal Protective Equipment (PPE), if any, for persons cleaning closed facilities
- Communication strategies and plan
- How to get employer engagement and buy-in

Healthcare Considerations

- Consider impact on the healthcare system and their current capacity and if the intervention would reduce or increase burden.
- Determine if implementation would mitigate burden on health care system to maintain essential medical services, especially for underserved populations.
- Increase in absenteeism among health care workers if schools and childcare are closed.
- Potential legal and ethical issues involving altered standards of care.

Implementation Methods

- **Local health officials and local school administrators work closely together in decision making to implement closures and dismissals**.
    - Include communication to parents and the public in case of school or child care closure.
    - Include communication to employees in case of a workplace closure.
- **Communicate to the media, partners, and the public about any facility or building closure.**
    - Create culturally relevant publications in all needed languages.
    - Work through the building or organization's communication channels.
    - Communicate on multiple platforms appropriate to the affected communities

- Provide consistent messaging throughout the state via media outreach.

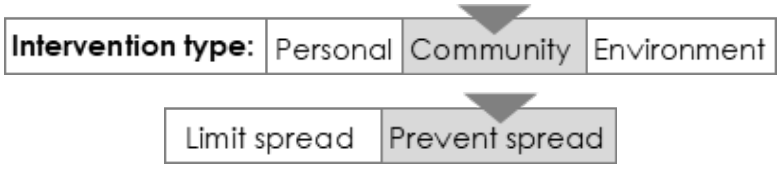
Special Considerations

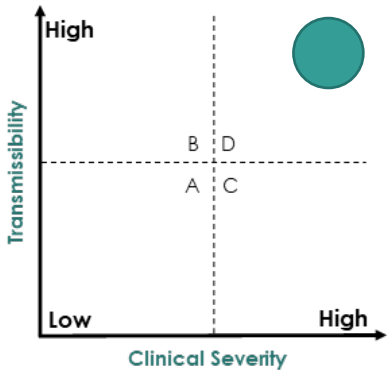
- Local health policies and risk communication strategies should take into account community attitudes and acceptance of preventive behaviors related to social distancing, which might differ across racial/ethnic, cultural, and economic groups.
- Strategies can be used in settings like schools (e.g., closure), workplaces (e.g., phone conferences instead of in-person meetings), and mass gatherings (e.g., postponement or cancellation) to reduce spread and infections. Multiple social distancing measures can be implemented simultaneously.
- Regarding school and child care closures, public officials should make decisions that balance local benefits and potential harms and consider timing, flexibility, and modifications to intervention based on the severity of local conditions.
- Requires advanced planning and preparation, as well as political leadership; collaboration between public health and emergency management agencies; coordination with schools, child care, businesses, nongovernmental organizations, and community- and faith-based organizations; and clear communication with the public.
- Cancelling school, child care facilities, workplaces, and public buildings would reduce income for staff working in those locations. Additionally, this could impact the income of working parents left without childcare and school and impact the ability for students to learn.
- Consider options for students who receive free or reduced-price student lunches to continue receiving meals during missed school days. Families experiencing housing insecurity or homelessness may need additional and proactive planning to ensure children are able to access alternative meals during closures.
- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Intervention 12: Prevent Non-Emergency Travel Outside the Home

Limiting travel outside of the home will reduce probability of the transmission by reducing the numbers of the interpersonal contacts. Travel should be restricted to emergency use only.

Transmissibility (1-5)	5
Clinical severity (1-7)	5.5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

This intervention is a more extreme measure of social distancing, which reduces occasions for person-to-person virus transmission to help delay the spread and slow the exponential growth of a pandemic.

Success Factors: Success depends upon compliance and authorities' ability to enforce effectively.

Possible Drawbacks: Will prevent the operation of public entities and private businesses; the effect will be felt economically by employees as loss of income, and the public as lack of commodity availability. Revenue loss; public outrage; and political backlash are possible. Travel restrictions may disproportionately affect certain cultural and community groups.

Possible Benefits: Reduces opportunities for direct or indirect disease spread, and may prevent a disease from entering new geographical region.

Settings and Use

- Travel restrictions are conditionally recommended during an early stage of a localized and extraordinarily severe pandemic for a limited period of time. Before implementing, consider cost, acceptability and feasibility, as well as ethical and legal considerations, in relation to this measure.
- This intervention should be considered when less-restrictive interventions have failed or to prevent disease introduction into new geographical areas.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: Local governments have police power to protect the public health under the U.S. Constitution's 10th Amendment, granting authority to implement restrictions on private rights for the sake of public welfare, order, and security. It also includes reasonable regulations to protect public health and safety. Under the 10th Amendment, police powers resides with state and local authorities unless specifically delegated to federal government. Local governments

may need to collaborate with state and federal partners as the complexity of the emergency increases. Local governments may request support from the state.

The Governor has broad authority to proclaim a state of emergency in order to preserve life, health, property, or the public peace (RCW 43.06.220). A governor declared emergency could trigger limitations such as curfews, prohibitions of people on streets and open areas, limit use of streets, highways or public ways; or other broad restrictions outlined by the law, such as prohibiting travel.

Washington's laws against discrimination are outlined in RCW 49.60. Public officials should consider how communities may be impacted and take action to remove stigma that may marginalize or discriminate against groups.

Key Stakeholders: Decision should be made in coordination with local elected officials (such as mayor, city council, county council, and/or county executive), private sector, emergency managers, local law enforcement, school superintendents, boards of education, health care, and transportation agencies.

Applicable Law(s):

- RCW 43.06.220 – State of emergency – powers of governor pursuant to proclamation
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- RCW 49.60 – Discrimination – Human Rights Commission
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders.

Applicable Law(s):

- 42 U.S.C. § 201 *et seq.* – Public Health Service Act
- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services
- Public Law No. 116-22 – 2019 Pandemic and All-Hazards Preparedness and Advancing Innovation Act (PAHPAIA)
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act

Decisional Objectives/Key Decision Points

- Define "essential travel"
- Define geographic location for ban on non-essential travel and length of ban.
- Communication strategies and communication plan
- Enforcement plan in coordination with law enforcement
    - Personal Protective Equipment (PPE) needed for enforcement officials
- Movement plan for individuals with essential travel needs
- Consider support of elected officials in issuing the order
- Consider how individual or community will access emergency services, if needed, during the restriction period
- Determine need for material support and services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing services.
- Plans and logistics for specimen collection or providing other medical services, if needed.

Healthcare Considerations

- Consider impact on the healthcare system and their current capacity and if the intervention would reduce or increase burden.
- Determine if implementation would mitigate burden on health care system to maintain essential medical services, especially for underserved populations.
- Increase in absenteeism among health care workers if schools and childcare are closed.
- Potential legal and ethical issues involving altered standards of care.

Implementation Methods

- Health officer order to the public to cease all non-essential travel.
- Work with law enforcement agencies to enforce.
    - Enforcement must be feasible and within the capabilities of the agency.
- Distribute messaging to help the public understand the reason for the measure and what to do.
    - Ensure messaging is culturally and linguistically appropriate for any groups disproportionately affected by the travel restriction. Ensure messaging is accessible for individuals with disabilities and available in alternative formats.

Special Considerations

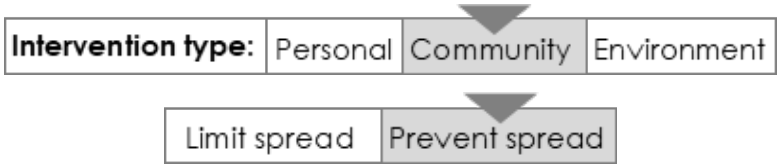
- Consider obtaining support of elected officials in issuing such a restrictive order.
- This intervention will require detailed coordination between state and local government officials.
- Law enforcement will be necessary to enforce the travel ban.
- Schools, transit services, and places of work will be affected.
- Sovereign tribal nations may decide their own criteria for non-emergency travel.
- Consider possible impacts to the health care system, such as an increase in people seeking care.
- Plan in advance any services needed to support the community during the restriction period.

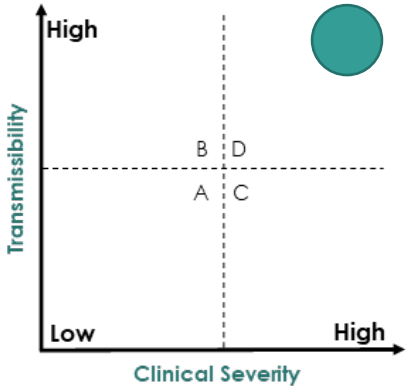
- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Intervention 13: Establish a Cordon Sanitaire

Contains a communicable disease within specific geographical boundaries. Legally enforceable order that restricts movement into or out of an area of quarantine to reduce spread in and to persons outside affected area.

Transmissibility (1-5)	5
Clinical severity (1-7)	5.5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

A cordon sanitaire is the restriction of movement of people in or out of the defined geographic area in order to contain disease within specific geographical boundaries. It is created around an area experiencing an outbreak or disease to prevent spread. This is a form of isolation and quarantine when applied to all inhabitants of an area as a sanitary barrier.

Success Factors: Success depends upon compliance and authorities' ability to enforce effectively. It also depends on engaging affected people to communicate the reason for the measure and gain their support for complying.

Possible Drawbacks: Controversial because it infringes on personal freedom of movement. May lead to feeling isolated or result in the isolation of an entire community. People could be stranded without support. Commerce will be heavily compromised. Revenue loss, public outrage, and political backlash are possible. It may disproportionately affect certain cultural and community groups, low-income families, rural and under-resourced communities, and individuals with un-related acute, chronic, or severe medical needs. May be difficult to solicit cooperation.

Possible Benefits: May contain a disease within the boundaries of the cordon. Reduces need for urgent evaluation of large numbers of potential contacts to determine indications for activity restrictions. May reduce transmission among groups without explicit activity restrictions.

Settings and Use

This strategy can be used when extensive transmission is occurring, a significant number of cases lack identifiable epidemiologic links at the time of evaluation, and/or restrictions placed on persons known to have been exposed are insufficient to prevent further spread.

Consider this intervention with highly transmissible and clinically severe disease that has requires geographic containment. This could apply to diseases that are easily transmitted

human-to-human via contact, droplet, and/or airborne routes when less-restrictive interventions have failed, or to prevent introduction into new geographical areas.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: Local governments have police power to protect the public health under the US Constitution's 10th Amendment, granting authority to implement restrictions on private rights for the sake of public welfare, order, and security. It also includes reasonable regulations to protect public health and safety. Under the 10th Amendment, police powers resides with state and local authorities unless specifically delegated to federal government. Local governments may need to collaborate with state and federal partners as the complexity of the emergency increases. Local governments may request support from the state.

The Governor has broad authority to proclaim a state of emergency in order to preserve life, health, property, or the public peace (RCW 43.06.220). A governor declared emergency could trigger limitations such as curfews, prohibitions of people on streets and open areas, limit use of streets, highways or public ways; or other broad restrictions outlined by the law, such as prohibiting travel.

Washington's laws against discrimination are outlined in RCW 49.60. Public officials should consider how communities may be impacted and take action to remove stigma that may marginalize or discriminate against groups.

Applicable Law(s):

- RCW 43.06.220 – State of emergency – powers of governor pursuant to proclamation
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- RCW 49.60 – Discrimination – Human Rights Commission
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders. HHS Secretary may declare a public health emergency under 42 USC sec. 247, which is a way to get Congress to fund a public health emergencies account, but declarations are often made receiving without associated Congressional funding.

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 201 *et seq.* – Public Health Service Act
- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law No. 116-22 – 2019 Pandemic and All-Hazards Preparedness and Advancing Innovation Act (PAHPAIA)
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act

Decisional Objectives/Key Decision Points

- Geographic location and timeframe of cordon sanitaire.
- Communication strategies and communication plan, including:
    - How affected community will receive updates
    - Whether to set up a call center
- Work with law enforcement to determine an enforcement strategy, including non-compliance.
    - Personal Protective Equipment (PPE) for officials enforcing the cordon sanitaire
- Movement of individuals and essential personnel into and out of the cordoned area for health and safety reasons
- Movement of materials (e.g. food, medical supplies/services, waste management) into and out of the cordoned area and providing essential services (e.g. utilities and water), and who will authorize providing services.
- Plan for health and emergency services in the cordoned area, such as mental health support, telehealth, and emergency medical transport
- Plans and logistics for specimen collection or providing other medical services, if needed.
- Identify communities that will be disproportionately impacted or burdened.
- Plan community engagement efforts, methods, and approaches that are responsive to the needs, preferences, and values of the community.
- Proactively address unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Implementation Methods

- **Health officer orders a cordon for a specific geographic area.**
    - Work with local health officer to determine best geographic area; work with the Washington State Department of Transportation and other transportation partners to transport cases and/or contacts to or from a geographic area.
- **Work with law enforcement agencies to enforce the cordon.**

    - Determine law enforcement needs and whether the agencies need additional officers.
- **Create and distribute accessible, public messaging,**
    - General messaging about why these measures are being taken.
        - Work with communications team to create messages that:
            - Meet readability and accessibility guidelines.
            - Are culturally and linguistically relevant.
            - Are translated into the most spoken languages in the affected area.
            - Are relevant/adaptable to the changing nature of the incident/outbreak.
        - Communicate through multiple platforms and channels appropriate to the affected communities
        - Engage with community leaders or representatives for advice and buy-in.
        - Provide messages to LHJs and other partners to share with their constituents.
        - Provide consistent messaging throughout the state via media outreach.
        - Develop tailored messaging for disproportionately impacted communities.

Special Considerations

- Requires excellent communication mechanisms to notify community of details and rationale.
- Low-income families, immigrant/refugee communities, communities of color, and individuals with criminal records may be disproportionally impacted by enforcement activities.
- Requires plans/protocols for providing essential services. Plan movement of materials (e.g., food, medical supplies/services, and waste management) into and out of the cordoned area and essential services (e.g., utilities and water) to avoid additional public health issues.
- Requires detailed coordination between state, local government officials, and community organizations/leaders/groups.
- Requires law enforcement to enforce travel restrictions and maintain security at borders, but their involvement may create stress, trauma/re-traumatization, and fear for certain communities.
- Heavily affects individual income, revenue, employment, economic opportunity, and commerce.
- Limits transportation for persons requiring medical evaluation, with appropriate infection control precautions. Consider use of telehealth resources to support this need, but that telehealth may not be an accessible resource for all individuals and communities in need.
- May disproportionately impact individuals with other, non-related chronic, severe, and acute medical conditions that require ongoing/follow-up treatment or management.
- Requires plan to divert flow of critical infrastructure supplies and materials that normally move through the cordoned area.
- Requires plan to provide mental health support.
- Risk of noncompliance, particularly as length of time increases. May require enforcement for noncompliance.
- When an entire community is involved, requires cooperation with neighboring jurisdictions that may not be using a similar intervention, particularly in situations where persons live in one city and work in another and only one locale is affected by the intervention.
- Coordination with the Office of the Governor and/or local government leadership may be needed.
- Tribal nations may decide their own criteria for cordoning and any relevant security concerns.
- Families on the brink of housing insecurity may be disproportionately impacted by loss of wages, potentially increasing risk of missing rent payments, potentially increasing risk of eviction and

homelessness. Homeless individuals already experience barriers to health care, services, and information.

- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

From: Gonzales, Elysia
To: zzgrp, CD Investigation Team; data, cdimms
Subject: Fw: Important: ~*~ Special Epi-X Media Tracking Report - COVID-19, February 27, 2020 ~*~
Date: Thursday, February 27, 2020 8:36:04 PM
Attachments: EpiX_02272020.pdf

I will try to remember to forward these to the group since I know most don't have access to Epi-X posts. See the attachment for new stories...including one noting a new case in CA with no travel or any known exposures which I hadn't hear about yet.

From: EPIXUpdate@cdc.gov <EPIXUpdate@cdc.gov>
Sent: Thursday, February 27, 2020 6:56 PM
To: Gonzales, Elysia <Elysia.Gonzales@kingcounty.gov>
Subject: Important: ~*~ Special Epi-X Media Tracking Report - COVID-19, February 27, 2020 ~*~

Check Epi-X for an Important Report

~*~ Special Epi-X Media Tracking Report - COVID-19, February 27, 2020 ~*~

This report provides special media coverage of the 2019 novel coronavirus outbreak (COVID-19).

https://epix2.cdc.gov/v2/Reports/Display.aspx?id=81269

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***Epi-X* Special Media Report – COVID-19, February 27, 2020**

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 This report is intended to provide *Epi-X* users with a summary of relevant **novel coronavirus** coverage from CDC and other media sources.

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  - AUSTRIA: EXTRA Coronavirus reaches Vienna with three confirmed cases
  - CANADA: Latest COVID-19 case in Toronto is Ontario's 1st instance of human-to-human transmission
  - CHINA/SOUTH KOREA: China reports 433 new confirmed COVID-19 cases, South Korea reports 334
  - CHINA/TAIWAN: Coronavirus threat shows 'unacceptability' of Beijing isolating Taiwan, US official says
  - CHINA: 404 Hubei cops infected, four dead so far
  - GREECE: Greece reports two new coronavirus cases - health ministry
  - HONG KONG: Coronavirus: 59 Hong Kong cops in quarantine after one officer becomes infected
  - IRAN/CHINA: China to provide Iran with 20k coronavirus test kits, says MFA Spox China to provide Iran with 20k coronavirus test kits, says MFA Spox
  - IRAN/SAUDI ARABIA: Iran's vice-president diagnosed with coronavirus; Saudi Arabia halts pilgrimage
  - IRAN: Iran vice president is one of 7 officials to contract coronavirus
  - JAPAN: Woman confirmed as coronavirus case for 2nd time, weeks after initial recovery
  - MEXICO: 6,000 people held on cruise ship as Mexico conducts coronavirus tests
  - MULTIPLE COUNTRIES: Rest of world overtakes China in new coronavirus cases
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  - NIGERIA: Nigeria reported the first ill with the novel coronavirus
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  - SOUTH KOREA: (2nd LD) Two more Air Force officers, two military workers test positive for coronavirus
  - SOUTH KOREA: Coronavirus cases reach 1,596 on tests of religious sect members
  - SOUTH KOREA: South Korea coronavirus cases surpass 2,000
  - SPAIN: Spain probes first local coronavirus transmissions
  - UNITED KINGDOM: Derbyshire primary school shut over 'confirmed coronavirus case' as numbers rise to 15 in UK
  - UNITED KINGDOM: Fears of coronavirus pandemic hitting UK grow as two new cases confirmed

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National

Infectious Disease

CALIFORNIA: 3 Los Rios Community College District Students Exposed To Person Who Later Tested Positive For Coronavirus

SACRAMENTO (CBS13) – The Los Rios Community College District says three of its students were exposed to a person who later tested positive for the novel coronavirus.

In a statement, the district says three total students from American River College, Sacramento City College and Cosumnes River College were exposed while working off-campus last week. All three students work as medical professionals.

The person the students were exposed to is now being treated in Sacramento County.

The district says both students from ARC and CRC returned to campus after the exposure and have shown no symptoms, but have since been instructed by county health officials to self-quarantine for 14 days. The SCC student did not return to campus after the exposure, district officials said, and has also been instructed to self-quarantine for 14 days.

Sacramento County Public Health experts have told the district that classes and work schedules can continue as scheduled.

The original article can be found at
https://sacramento.cbslocal.com/2020/02/27/los-rios-cosumnes-river-american-river-coronavirus-student-exposures/

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CALIFORNIA: CDC detects first case of coronavirus in someone who didn't travel recently

Los Angeles, Feb 26 (EFE News).- The United States detected the first case of coronavirus in a person who has not recently traveled, an indication that the virus may be spreading locally, local media reported on Wednesday.

The patient in question, who has not recently traveled abroad or had contact with a confirmed coronavirus case, is located in Northern California, according to The Washington Post on Wednesday with information from the Centers for Disease Control and Prevention (CDC).

According to the capital rotarian, CDC officials have begun tracing the affected person's contacts to find out how he or she may have been infected and who else may have been exposed, but the motives are not yet known.

With confirmation of this new coronavirus case, the total number in the United States has risen to 60.

That information was made public shortly after Orange County, Southern California, near Los Angeles, declared a health emergency to address coronavirus infections, becoming the state's second-largest facility to take action urgent after San Francisco.

US President Donald Trump addressed the issue on Wednesday at a press conference at the White House, where he presented his action plan, and promised that they will find a vaccine against the coronavirus.

It also asked the US Congress for a $1.5 billion package to address the health situation.

"All sectors of society must prepare, although the situation is improving. Schools should prepare just in case," Trump said.

Asked whether they are considering closing borders on citizens from countries where the virus is already present, Trump commented that "it is not yet the time," though he did not rule it out in the future based on the outbreak."

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CALIFORNIA: Coronavirus: California monitoring more than 8,000 people as number of cases soar

California governor Gavin Newsom says more than 8,000 people in the state are being monitored for coronavirus infections.

There are have been 33 confirmed cases of the flu-like respiratory illness in the state, including what is likely the first confirmed infection in a patient who was infected through "community spread" and didn't come into direct contact with another patient, according to the Centers for Disease Control and Prevention.

The governor confirmed that 8,400 California residents are being medically monitored for novel coronavirus COVID-19 in 49 local jurisdictions.

While more than 800 people have flown into the state via government-sanctioned evacuations following the outbreak in China, thousands of other passengers landed in California through traditional travel.

Officials also have told several school districts to prepare for potential outbreaks.

The governor said his administration is in "constant contact" with federal agencies as it responds to the virus.

"We're meeting this moment", he said. "We're not overreacting nor are we under-reacting. At the same time, [there is] no better resourced state in America to address this issue head-on."

More follows…

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CALIFORNIA: San Diego health lab can now test for coronavirus

Having that capability means that HHSA will no longer have to send all specimens to the Centers for Disease Control and Prevention.

SAN DIEGO COUNTY, Calif. — The County Public Health Laboratory is now able to test for the novel coronavirus, the cause of the respiratory disease COVID-19, the Health and Human Services Agency announced Thursday.

Having that capability means that HHSA will no longer have to send all specimens to the Centers for Disease Control and Prevention, substantially reducing the time it takes for results.

“This is great news for San Diego County and will help with our ongoing efforts to contain COVID-19,” said Wilma Wooten, M.D., M.P.H., County public health officer. “Being able to test locally means that when we have patients under investigation, we can more rapidly remove unneeded restrictions from those without infection. Should someone test positive, we will continue to keep them isolated.”

The County Public Health Lab now has the capability to do up to 40 tests in one run. The lab is one of dozens across the nation certified by the CDC to test for the new coronavirus.

“The number of specimens we’ve been getting for testing is currently low, but we expect the need to increase,” said Brett Austin, director of HHSA’s Public Health Lab. “We are ready to increase capacity as required.”

Prior to getting the testing kit, the County Public Health Lab had to send specimens to CDC and results took several days to return. Now, those tested for potential cases of COVID-19 will know their results in 24 to 48 hours. Positive tests will still need to be confirmed by the CDC.

CDC currently recommends testing patients with symptoms — fever, cough or difficulty breathing — after returning from China or other areas with community transmission of coronavirus disease or who have had known contact with a

confirmed COVID-19 case.

The risk of COVID-19 is still very low, especially if you have not travelled to an area where the virus has been detected or had close contact with a patient who tested positive for this new coronavirus.

“We want to assure the public that we are prepared and are conducting surveillance just like we do for any communicable disease,” Wooten said.

The original article can be found at https://www.cbs8.com/article/news/health/coronavirus/san-diego-health-lab-can-now-test-for-coronavirus/509-8ba2651c-c50d-41ac-aaf0-1d3d9a3fe9d7

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CALIFORNIA: Solano County Schools Wiped Down, Disinfected Amid New Coronavirus Case

Custodial staff at schools in Solano County wiped down and disinfected classrooms Thursday, one day after officials announced that there was a new coronavirus case in the county.

The Fairfield-Suisun Unified School District advised over 21,000 parents that the district's custodial staff is doing everything possible to stop the spread of the coronavirus in the county.

"We understand that novel coronavirus is causing concern for many of our parents," the district said in a voicemail to parents.

Marcela Sanchez of Fairfield said she has been reminding her 6-year-old and her 3-year-old to "wash their hands, sanitize their hands when they cough and sneeze."

"We just got to be careful," Sanchez said.

A district spokesperson said there's no known direct connection that links the Solano County coronavirus patient with any of the district's schools.

The NorthBay Healthcare Group confirmed the patient was lying in a hospital bed at VacaValley Hospital in Vacaville for three days before anyone knew she was infected with the virus.

"During the course of the three-day stay, the patient's condition worsened, prompting our physicians to seek transfer to UC Davis," a statement from NorthBay Healthcare read.

A hospital spokesperson said the patient may have exposed dozens of hospital staffers. Those who had the highest risk of exposure are staying at home and monitoring themselves for any coronavirus symptoms.

The school district is reminding parents that the coronavirus is not specific to any race or ethnicity and it's urging parents to speak to their children about cultural sensitivity.

The original article can be found at https://www.nbcbayarea.com/news/local/solano-county-schools-wiped-down-disinfected-amid-new-coronavirus-case/2243583/

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INDIANA: State Department of Health says 26 Hoosiers being monitored for exposure to coronavirus

INDIANAPOLIS - The Indiana State Department of Health announced Thursday that 26 individuals are being monitored in Indiana for exposure to the coronavirus based on their history of travel or contact with an individual who has traveled to an affected country.

In a press conference, health officials said Indiana has no confirmed cases of coronavirus (COVID-19), and no one in the state is suspected of being infected at this time. To date, ISDH has worked with local health departments to monitor nearly 60 travelers in accordance with guidelines established by the Centers for Disease Control and Prevention (CDC). The number of people being monitored fluctuates as individuals complete the 14-day monitoring period.

The CDC says the immediate risk at this time is low for Americans who do not have risk factors, such as travel to an impacted area or contact with a person who has had recent travel to China or other affected countries. However, the CDC has urged Americans to begin thinking about steps they would take if their daily lives are disrupted.

“This is a time to plan, not to panic,” said State Health Commissioner Kris Box, M.D., FACOG. “The situation with this novel coronavirus is changing rapidly, and I know that can cause concern because we don’t have all the answers yet. What we do have, however, is a plan for how to respond if and when COVID-19 comes to Indiana.”

For more on this story, see Friday’s Republic.

The original article can be found at http://www.therepublic.com/2020/02/27/state-department-of-health-says-26-hoosiers-being-monitored-for-exposure-to-coronavirus/

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MULTIPLE COUNTRIES: Coronavirus: COVID-19 outbreak worsens with 45 countries confirming virus infections - NEWS.com.au

A person in the US has coronavirus despite having no link to foreign travel or coming into contact with a patient known to be infected.

A person in California is believed to be the first person to contract coronavirus despite not having travelled outside the United States or coming into contact with a known patient.

The chilling development, reported Centers for Disease Control and Prevention, is the first sign the disease may be spreading within a community in the US.

The Solano County patient had “no known exposure to the virus through travel or close contact with a known infected individual,” the California Department of Public Health said.

The case was picked in the public health system by “astute clinicians,” the CDC said.

Health officials are now urgently tracking the patient’s prior movements.

“At this time, the patient’s exposure is unknown,” the CDC said. “It’s possible this could be an instance of community spread of COVID-19, which would be the first time this has happened in the United States.”

The CDC told KCRA that “unprecedented, aggressive efforts” had been undertaken to contain the spread and mitigate the impact of the virus in the US.

President Donald Trump earlier gave a press conference in which he downplayed the threat of the virus to the US.

He also appointed Vice President Mike Pence to lead the country’s response to the virus.

GROWING GLOBAL PROBLEM

South Korea has confirmed almost 300 new coronavirus infections as the country struggles to deal with the growing crisis.

The South Korean military announced additional infections among its troops, with 20 cases on its bases and some 9570 people in isolation.

The US military, which has 28,500 troops in South Korea, confirmed the first infection of an American soldier, a 23-year-old man based at Camp Carroll near Daegu.

With Brazil confirming the arrival of Latin America's first case, the virus has a toehold on every continent but Antarctica.

The latest countries to confirm infections include North Macedonia, Pakistan, Finland, Kuwait, Lebanon, Sweden and Georgia.

The disease has now spread to at least 45 countries, with many implementing emergency plans and travel restrictions on the worst-affected places.

Australia activated its emergency response plan yesterday amid rising concerns of a potential coronavirus pandemic.

Stock markets around the world have been savaged, with more than $US1.7 trillion ($A2.5 trillion) wiped off US exchanges in two days alone.

Meanwhile. the World Health Organisation (WHO) reported that the number of new cases reported outside China exceeded the number of new cases in China for the first time.

On Tuesday, 411 new cases of the COVID-19 disease were reported in China, while 427 were reported outside the country, WHO said.

"The sudden increases of cases in Italy, the Islamic Republic of Iran and the Republic of Korea are deeply concerning," WHO director-general Tedros Adhanom Ghebreyesus said on Wednesday.

Countries across the world are now scrambling to prevent the spread of the virus, which was first detected at a seafood market in Wuhan, China in December.

More than 81,000 people have been infected while at least 2770 have died.

South Korea announced more than 1000 people had been infected – by far the largest outside China – and 12 deaths.

Italy, the hardest hit country in Europe, reported 400 people have now been infected, a rise of 80.

Iran officially announced a total of 19 deaths and 139 infections, including the country's deputy health minister. The actual number is thought to be higher.

The CDC warned the American public to prepare for an outbreak of the disease.

But before he flew home from India on Tuesday, Mr Trump said the coronavirus situation was “very well under control in our country”.

The administration has asked Congress for an additional $2.5 billion to speed development of a vaccine, support preparedness and response activities, and to gather needed equipment and supplies.

IS IT A PANDEMIC YET?

Around the world cleaning crews scrubbed down everything from money to buses and military bases and hotels were on high alert for the disease.

Worries about the economic impact are growing with factories idle and tourism crippled.

The dramatic surge of infections in Italy, Iran and South Korea has prompted calls for the virus to be declared a pandemic.

WHO defines a pandemic as a situation where “the whole world’s population” is likely to be exposed to an infection and potentially “fall sick”.

The declaration would prompt countries to step up their preparedness plans, but the WHO said it could also cause unnecessary panic.

“We should not be too eager to declare a pandemic,” Dr Tedros said on Wednesday, stressing that such a declaration could “signal that we can no longer contain the virus, which is not true”.

“We are in a fight that can be won if we do the right things.”

But Dr Tedros insisted WHO would not hesitate to declare a pandemic if it was “an accurate description of the situation”.

“I am not downplaying the seriousness of the situation, or the potential for this to become a pandemic, because it has that potential,” he said.

“All countries, whether they have cases or not, must prepare for a potential.”

VIRUS COULD STICK AROUND FOR MONTHS

The coronavirus epidemic is believed to have peaked in China between January 23 and February 2.

But Bruce Aylward, the leader of a joint WHO-China mission of experts, said it could be a threat “for months”.

He warned countries they needed to do more to get ready.

“Think the virus is going to show up tomorrow. If you don’t think that way, you’re not going to be ready,” he said.

“This a rapidly escalating epidemic in different places that we have got to tackle super fast to prevent a pandemic.”

In the US, the CDC warned the American public to prepare for an outbreak.

“It’s not so much a question of if this will happen anymore, but rather more a question of exactly when this will happen, and how many people in this country will have severe illness,” senior official Nancy Messonnier said.

She said schools could help contain the spread by closing down or using “internet-based teleschooling” while businesses could “replace in-person meetings with video and telephone conferences”.

On a larger scale, cities may need to cancel mass gatherings, she said.

The original article can be found at https://www.news.com.au/lifestyle/health/health-problems/numbers-show-key-shift-in-coronavirus-outbreak-as-who-warns-against-pandemic-panic/news-story/6b3bf772cd427c3f0ed29bdd10640688

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MULTIPLE STATES: What Would a Coronavirus Outbreak in the U.S. Mean for Schools?

Districts have infectious disease protocols. But few have detailed plans to teach online if schools were closed for long periods.

Schools in the United States prepare for all manner of disasters and threats, whether hurricanes, mass shooters, tornadoes, influenza or head lice.

But this week, a stark new order came from the Centers for Disease Control and Prevention: Get ready for the coronavirus.

Around the nation, school officials and parents were flummoxed by the sudden warning that if a coronavirus epidemic hit the United States, school buildings could be shut down for long periods of time, leaving children sequestered at home and schools scrambling to provide remote instruction.

In warning that the coronavirus will almost certainly spread in the United States, Dr. Nancy Messonnier, director of the National Center for Immunization and

Respiratory Diseases, said she had contacted her own local school superintendent this week and asked if the district was prepared. She advised parents to do the same. And she suggested that a temporary system of "internet-based teleschooling" could replace traditional schools.

It was not clear how such a system would work.

The obstacles to teaching remotely were evident: American children have uneven access to home computers and broadband internet. Schools have limited expertise in providing instruction online on a large scale. And parents would be forced to juggle their own work responsibilities with what could amount to "a vast unplanned experiment in mass home-schooling," said Kevin Carey, vice president for education policy at New America, a think tank.

Across the country, as federal authorities announced that 60 people in the United States had been infected with the virus, mainly from travel abroad, families were grappling with the new alarm raised over the virus and how a possible outbreak could play out in their own communities.

In Denver, Meg Conley's 11-year-old daughter, Margaret, interrupted breakfast on Wednesday morning with a worried question. She told her mother that her elementary school classmates were gripped by fears about the coronavirus, and she asked when it was coming and how many people it would kill.

"I had no idea," Ms. Conley, 35, a freelance writer, said of the children's anxieties. "Apparently it's all the kids are talking about on the playground."

Schools are hastily making their own plans, or updating those drafted during previous scares over viruses like H1N1 and Ebola. The Washington State health department held a webinar for about 250 school superintendents on Tuesday to discuss coronavirus preparations, including plans to close schools and allow students to continue to do schoolwork at home.

Dennis Kosuth, a nurse for Chicago Public Schools, said his district's ability to handle an outbreak could be compromised by circumstances like families who could not afford child care costs to keep sick children at home. Nursing shortages are a concern, too, he said. Mr. Kosuth said he was responsible for nursing care at four schools.

Some Chicago schools also lack rooms dedicated to health needs, Mr. Kosuth said. In one school where many students and staff members became ill with an ordinary infection last semester, "Patient Zero was sitting in the main office coughing and sneezing all over the place" as the sick child waited to be picked up, he said.

On a more positive note, Mr. Kosuth said that evidence from China suggested that

children were more resilient to the coronavirus than adults were.

In Miami-Dade County, Fla., Alberto M. Carvalho, superintendent of one of the nation's largest school districts, said his system's preparation for hurricanes put it at an advantage in preparing for the coronavirus. The district has provided laptops, tablets and smartphones for some students to take home, as well as internet connectivity for some low-income students. Teachers would be asked to assign work remotely and could even teach some high school courses live online.

"I was a bit surprised that it took this long to offer national guidance specifically to school districts," Mr. Carvalho said of the C.D.C. statement this week.

Many districts have already sent home letters about the coronavirus, asking parents to keep sick children away from school and to remember basic prevention measures such as hand washing, cough covering and vaccination against the flu. They have highlighted C.D.C. advice issued early this month, calling for all travelers returning from China to "self-quarantine" for 14 days.

School officials have often tried to ratchet down panic among parents, reminding families that face masks are not broadly recommended and that the overall risk of infection is low.

But few districts have publicly addressed what would happen to classes in the case of widespread infection and school closings like those that have taken place in China, Italy and Bahrain.

The vast majority of districts have access to broadband internet, but they do not necessarily have expertise in how to effectively organize and teach classes online when schools are shuttered. Further complicating matters, not all families have home computers and high-speed internet. While 90 percent of households with children under 18 had broadband access in 2016, according to federal data, gaps remained along the lines of income, race and education level.

Less affluent families were more likely to depend on smartphones but to lack computers or tablets, which are often needed to fully participate in online learning.

While school districts may not be ready for widespread remote learning, many of the larger districts have had plans for the possibility of pandemics for years, according to Chris Dorn, a school safety consultant with the nonprofit Safe Havens International.

Districts without such plans will need to work with local health agencies to come up with protocols, he said. Among the questions to tackle: Should students at risk for coronavirus who show symptoms at school be transported immediately to hospitals or should they be kept on school grounds until a parent or caretaker can

pick them up?

In the San José Unified School District in California, Melinda Landau, who manages school nursing, said the district's response to flu season would also help in the case of a coronavirus outbreak.

It has ordered additional thermometers and hand-washing lesson kits, which allow nurses to sprinkle powder that glows when exposed to ultraviolet light, demonstrating how thoroughly students have washed their hands and how important simple personal-hygiene measures can be.

The district also asks parents who call their children in sick to describe symptoms. Schools with clusters of sick students are cleaned more deeply with disinfecting products.

There have been no confirmed cases of the coronavirus in the district, Ms. Landau said. Two students returned from trips to China in late January. Their parents voluntarily kept them home from school for a time to monitor their health.

Going forward, the district is waiting to see how the coronavirus progresses, Ms. Landau said.

She added, "We don't quite know where to move yet."

Closing schools may not be the best option, especially since children appear to be at lower risk of infection, said Amy Acton, the director of Ohio's health department. Beyond contingency plans for closing, she said, schools need to consider lining up substitute teachers and planning for absences of other staff members, like cafeteria workers. And Dr. Acton said schools can also play another, more traditional, role: science and health education.

"Schools can be telling families what they can be doing to stay healthy, and we can teach about viruses, and what is a zoonotic disease? Why is it important to get a flu vaccine?" Dr. Acton said. "This is a teachable moment."

Jack Healy, Amy Harmon and Sarah Mervosh contributed reporting.

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NEW MEXICO: With no confirmed cases of virus, testing limited in New Mexico

Unless you're showing flu-like symptoms and have traveled to China or South Korea recently, you won't be approved for a coronavirus test in New Mexico.New

Mexico so far has zero cases of coronavirus, also known as COVID-19, making the state Health Department guidelines for approving the tests fairly strict at the moment.

If a person goes to the hospital complaining of coronavirus symptoms - fever, coughing, headache, difficulty breathing - and has just returned from a trip to China, the doctor will call the Health Department to discuss whether testing is called for.

If the health official gives the OK, the medical provider will conduct a test - such as swabbing the nose and throat or drawing blood - and then send samples to the Centers for Disease Control and Prevention.

"They [patients] would have to be sick. They would have to be in a higher-risk category," state epidemiologist Dr. Michael Landen said.

Landen expects New Mexico to begin testing soon for the virus at an Albuquerque laboratory, which means doctors will be able to send samples there instead of a federal lab.

If a serious outbreak occurs in the state, testing will expand greatly, allowing health care providers to order tests at commercial labs, Landen said. That was the progression of testing - federal, state, commercial - that happened during the H1N1 flu pandemic in 2009, he said.

All states should receive federal money that Congress funnels toward combating the virus, just as they did with the Ebola, Zika and swine flu epidemics, he said.

More than three dozen countries have at least one reported coronavirus case, making world health officials fear the disease is on the verge of becoming a pandemic.

Alex Yee, a former Santa Fe Care Center employee, said his bosses gave him four days to get test results proving he didn't have coronavirus. They claimed they were concerned about his wife recently traveling to Italy, where the disease has swiftly spread in the country's north.

"It was extremely unrealistic," Yee said of the deadline.

An area hospital he contacted told him he has to show symptoms to be tested, which he did not, he said. And even if they did test him, it could take a couple weeks before he would receive the results, so he would miss his tight deadline, he said.

When he told his supervisor that he couldn't meet her demand, he was fired, Yee said. The care center, which had a recent change of management, probably came

up with the testing requirement to get rid of him, he said.

The center's administrator declined to discuss the case, other than to say she has to protect the 96 residents from this growing threat.

"The employer had set him up for an impossible task," Landen said. "The employer put an unreasonable condition on the employee."

Yee clearly would not qualify for a test, Landen said. He's not displaying symptoms, Italy is not on the list of high-risk countries and he didn't travel outside the U.S.

Even if his spouse had visited a high-risk country, it would not be enough for a test, Landen said. A person must be in contact with someone who is confirmed as infected, and there are only 60 of those cases in the U.S., he said.

The worst outbreaks are in China, which has more than 78,000 reported cases, and South Korea, where more than 1,500 cases have been reported, according to the World Health Organization.

Italy is a distant third with 470 cases, with almost all cases reported in the country's northern region. The still relatively low number is why someone who has traveled to Italy doesn't qualify for a test, at least for now, Landen said.

"That's obviously evolving or changing," Landen said.

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WASHINGTON: Seattle-area high school shuttered over coronavirus fears

BOTHELL, Wash. — A suburban Seattle high school was closed Thursday after a staffer’s family member was placed in quarantine for showing symptoms of possibly contracting the new virus that started in China - an action health officials say is unnecessary.

Bothell High School, about 20 miles (32 kilometers) northeast of Seattle, will be cleaned and disinfected on Thursday while students stay home, Northshore School District superintendent Michelle Reid said in an email to families Wednesday night.

“These steps are being taken out of an abundance of caution,” Reid said.

The risk to the school’s students and other staff members is minimal, the Washington Department of Health said in a letter. And the local health

department, Public Health Seattle & King County, said in a statement that the closure wasn't needed.

"Closing schools when there has not been a confirmed case in a student or staff member is not currently recommended by Public Health - Seattle & King County or the Centers for Disease Control and Prevention," the health department said. 'We know that school districts act out of extra special caution when they are protecting children."

The Bothell High School staff member had returned to work Monday after a week of international travel. The staffer told school officials that a family member also on the trip became sick Tuesday and was taken to the hospital.

The family member is quarantined and undergoing treatment at a hospital after showing possible signs of contracting coronavirus. The test results for the sicked family member may take up to a week. No other information about the person, or where the travel took place, was disclosed.

The original article can be found at
https://www.washingtontimes.com/news/2020/feb/27/bothell-high-school-closed-over-coronavirus-fears/

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Studies

Coronavirus Mortality Rate: How COVID-19 Fatalities Compare to Ebola, SARS and MERS

As the outbreak of the new coronavirus continues to grow, experts around the world are working tirelessly to understand the characteristics of the mysterious new disease named COVID-19. That includes calculating its death rate, and seeing how it compares to that of other deadly diseases like Ebola, SARS and MERS.

What is known among experts as the case fatality rate—but commonly referred to as the mortality or fatality rate—is calculated by dividing the number of deaths by the total number of people infected. For instance, if 100 people die out of 1,000 people infected by any given disease, the mortality rate would be 10 percent.

As such, the mortality rate of a disease is changeable, and depends on a range of factors including the location of an outbreak, the health status of the infected person, and how much data has been accurately collected on the cases and deaths caused by the disease.

For the new coronavirus, which causes a disease called COVID-19, the average

mortality rate is estimated to be in the range of 1 to 3 percent, Mike Tildesley, associate professor in the department of Life Sciences at the University of Warwick told Newsweek.

A summary of a report on over 72,000 COVID-19 cases by the Chinese Center for Disease Control and Prevention in the journal JAMA on Monday showed the case fatality rate was 2.3 percent of average, spiking to 80 percent in patients aged between 70 to 79-years-old, and dropping to 14.8 percent in those aged 80 and above.

On Wednesday, NBC News reported the mortality rate in Iran—which has seen a spike in cases since it reported its first case last week—was around 14 percent. At the same time, as only 60 COVID-19 cases have been reported in the U.S. and no one has died, it isn't currently appropriate to estimate a mortality rate for that country, Tildesley explained.

Differences in reporting and healthcare systems in individual countries and their ability to manage outbreaks also affect the figure, Tildesley said. For example, officials in China changed how they count cases at least twice.

What's more, we still don't know how many people are infected but haven't shown symptoms and are therefore missing from the available data on cases, Tildesley said. "If this figure is high, then the true mortality rate will be significantly lower than the current estimates."

At present, COVID-19's fatality rate is relatively low compared to other deadly virus outbreaks in recent memory. Ebola, which in 2014 killed over 11,000 people in West Africa, has had a fatality rate between 25 percent to 90 percent depending on the outbreak.

SARS and MERS—fellow members of the large coronavirus family of viruses which now includes COVID-19—have mortality rates of around 10 percent and 35 percent, respectively, Tildesley said. Since it emerged in 2012, MERS has killed 858 people, while 8,098 people died of SARS during the 2003 outbreak.

As reflected in the map by Statista below, fresh cases of COVID-19 have popped up in new countries almost daily in the past couple of days, with concerning clusters appearing in Italy, South Korea, and Iran. On Wednesday, the U.S. Centers for Disease Control reported what is suspected to be the first example of what is known as "community spread." So, with all this going on, should the general public worry about figures like mortality rates or instead simply focus on preventing the spread of infection?

"It is completely understandable to be worried about mortality rates and evidence suggests that those most at risk are the elderly and those with underlying health conditions," said Tildesley.

"The best course of action is for us to try to minimise further spread of disease. It is important for us to follow good hygiene practices such as regular handwashing, covering coughs and sneezes with tissues, avoiding contact with people who are sick and in those cases, avoiding contact with the eyes, nose and mouth," he said.

Addressing fears that the virus could soon be declared a pandemic (where a pathogen has spread widely within two or more countries other than the first one to report it) Tildesley said: "The virus is concerning as we are now seeing spread in several countries in the world, so it is important to remain vigilant and to maintain the intervention protocols that are currently being put in place.

However, he cautioned: "The use of the term 'pandemic' can sometimes be distracting to the general public as it may give the impression that we are dealing with a virus that is 'uncontrollable' and spreading throughout the world.

"What should be stated is that health services around the world should be prepared for the possibility that COVID-19 cases may start to spread in their country and to ensure that contingency plans are in place to reduce the risk of large scale transmission," Tildesley argued.

The original article can be found at https://www.newsweek.com/coronavirus-mortality-rate-covid-19-fatalities-ebola-sars-mers-1489466

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The No. 1 way to prevent coronavirus isn't wearing a face mask

As fears over the coronavirus outbreak spread, thousands of Americans are clamoring to buy face masks in an effort to protect themselves, sending prices soaring and leading manufacturers like 3M to ramp up production. However, experts say stocking up on face masks is actually misguided — and there's a much simpler thing you could be doing right now to protect yourself.

There's a lot the general public likely doesn't realize about these masks — namely, that they are not the best way to prevent the spread of coronavirus.

Wearing a mask is more for people already showing symptoms of coronavirus and their caregivers than for people trying to prevent it

The Centers for Disease Control and Prevention said it "does not recommend that people who are well wear a facemask to protect themselves from respiratory diseases, including COVID-19," referring to the disease caused by the new coronavirus. Rather, experts caution that putting on a face mask without proper fitting and training could actually increase your risk.

"If it's not fitted right, you're going to fumble with it," explained Health and Human Services Secretary Alex Azar before a House Appropriations subcommittee on Wednesday. "You're going to be touching your face, which is the No. 1 way you're going to get disease, is unclean hands touching your face."

On the other hand, if you are already coughing and showing symptoms of possible coronavirus illness, that's when wearing a mask could be helpful for protecting those around you.

"The data on the effectiveness of masks for preventing respiratory virus infections is not very clear, " explains Dr. Andrew Stanley Pekosz of Johns Hopkins' Bloomberg School of Public Health. "The best data suggests that if you are ill and showing symptoms, wearing a mask can reduce the chances that you spread the virus to others."

Cloth surgical masks are not helpful at all

The common surgical mask you might be picturing in your head will not help you at all, Pekosz said.

A type called an N95 respirator mask, if properly fitted, can block large-particle droplets that may contain germs, but the FDA warns they cannot filter out "very small particles in the air that may be transmitted by coughs [or] sneezes."

"An N95 mask is the one that is most practical," Pekosz tells CBS News. "It stops 95% of particles of a certain size. ... There is a N99 mask, which blocks 99% of particles, but that mask is difficult to wear for long periods of time because it is hard to breathe through it."

Respirator masks are more expensive. The FDA also notes they are not designed to fit children or people with facial hair.

Even a good face mask isn't enough

"Masks shouldn't be considered to be the sole item that can protect you from infection, but it can be one of several things that can help you stay uninfected," said Pekosz.

"Wash your hands frequently. Practice social distancing — stay 5 feet away from people to avoid being close enough to be exposed to respiratory droplets from that person. More specific guidance will be given by the CDC soon, but those two things should be practiced by people on a daily basis to reduce the spread of respiratory viruses."

And he adds, "Get a flu shot — influenza has killed over 16,000 Americans this year and is still causing disease across the U.S."

You have to change masks every few hours

If you do go the mask route in spite of expert advice, it's important to note that face masks have a very specific lifespan. While there are some with longer lifespans or that have replaceable filters, the most common face masks on the market are disposable and single use. Each one of those is only good for a few hours.

"You want to change masks every few hours to make sure that they are functioning properly and aren't getting contaminated with virus particles on the outside," Pekosz tells CBS News. "It's not like putting one on protects you. One has to follow specific procedures to ensure you are using them effectively."

Buying face masks for personal use could cause a shortage at hospitals

"There is a limited supply of masks and while companies are increasing their production, demand is increasing at a very high rate," cautions Pekosz. "There will most likely be shortages of personal protective equipment at medical institutions and this may in part be driven by supplies being purchased by the general public. Emergency preparedness efforts will address supply chains, but there really is no reason for the general public to purchase large numbers of N95 masks."

America's largest face mask manufacturer, Prestige Ameritech, is a small business based in Texas with only 100 employees. And while they have no problem fulfilling America's normal demand for face masks and respirators, they are now struggling to keep up.

Mike Bowen, the company's executive vice president, told CBS News that they now field orders of up to 100 million face masks and respirators a day. He also noted that while the company does not ship its products internationally, in the last 30 days it has sold between 1 million and 2 million masks to buyers who then sent them to others in China and Hong Kong.

This huge spike in personal orders is precisely what experts fear will cause a dangerous inventory shortage in American hospitals — a shortage that is entirely avoidable, given that there are no proven benefits to the general public wearing masks.

The best way to prevent coronavirus: Wash your hands

Experts say washing your hands is the best way to prevent the spread of infectious illnesses like coronavirus. That's because one of the most common ways infections spread is when people touch a contaminated surface and then touch their mouth or nose.

Wash your hands frequently and thoroughly. CBS News chief medical correspondent Dr. Jon LaPook points out that it's especially important to make sure that you scrub the soap into your fingertips because they are simultaneously the part of the hand most often neglected and the part of the hand most likely to touch your face and spread disease.

Soap and water is far more effective than hand sanitizer. If you're using an alcohol-based hand sanitizer, you should make sure that it contains at least 60% alcohol.

Beyond that, the CDC advises that, whenever possible, you should also avoid touching your eyes, nose and mouth with unwashed hands, avoid contact with sick people, cover your mouth when you cough and sneeze, and disinfect objects and surfaces frequently.

The original article can be found at https://www.cbsnews.com/news/coronavirus-prevention-face-mask-not-helpful-wash-hands/

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International

Infectious Disease

AUSTRIA: EXTRA Coronavirus reaches Vienna with three confirmed cases

Vienna (dpa) - The coronavirus has reached Vienna as three cases were confirmed in the Austrian capital, according to the city's health authorities.

The first confirmed patient is a 72-year-old man who has been in hospital for 10 days with flu-like symptoms and who had repeatedly been tested for the virus.

The man's condition is serious and he is breathing on a respirator, according to Vienna's hospital association (KAV).

He had not travelled abroad.

On Thursday evening, tests confirmed that a couple had been infected. They had returned from a holiday in northern Italy with their children.

The children also display symptoms of the disease but the results of their tests are still outstanding, KAV told Austrian news agency APA. All four members of the family showed symptoms of the virus.

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CANADA: Latest COVID-19 case in Toronto is Ontario's 1st instance of human-to-human transmission

Ontario now has a sixth confirmed case of the novel coronavirus, and while it is the first instance in the province of human-to-human transmission, health officials say the risk is still low.

Officials said Thursday the husband of a woman who had travelled to Iran and recently tested positive for the new coronavirus in Toronto is now infected. The husband had not travelled with her to Iran.

The woman, who is in her 60s, was diagnosed with COVID-19 on Feb. 24. She had presented herself at Sunnybrook Health Sciences Centre's emergency department with a travel history to Iran.

Her husband, also in his 60s, now has a presumptive case of the virus and is currently in self-isolation, health officials said in a statement.

"We are working alongside Toronto Public Health, who is now and will continue to be in regular contact with this individual during their self-isolation period," said Dr. David Williams, Ontario's chief medical officer of health.

The man is Toronto's fifth case of the coronavirus and the sixth case in the province.

Five people in Ontario had previously been diagnosed with COVID-19, including a married couple in Toronto, a Western University student in London, Ont., another Toronto woman who had all recently returned from travelling in China, and a woman in her 60s who had recently travelled to Iran.

While China has been the epicentre of the outbreak of the virus known as COVID-19, Iran is now experiencing one of the worst outbreaks outside of China, with 254 people infected and 26 dead.

Globally, the coronavirus has infected about 81,000 people since it emerged in China.

Dr. Williams said health authorities remain vigilant, but there is no cause for fear in the general public. The data from China shows that most of the spread has been to close contacts, most infected people have fairly mild and short-lived symptoms particularly younger people – and the deaths have been in older people with

underlying health conditions, he said.

“Before there’s widespread panic and that kind of stuff, look at the evidence,” Williams said, noting the mortality rate is less than that of the flu.

“I think you have to – instead of (acting) on speculation and fear – go back to the data, look at the information, ask your authorities on what the risk is. It’s still low. But does that mean we’re going to sit back and not do more surveillance? We’re going to do more surveillance.”

The original article can be found at https://globalnews.ca/news/6602786/coronavirus-toronto-covid19-ontario-6th-case/

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CHINA/SOUTH KOREA: China reports 433 new confirmed COVID-19 cases, South Korea reports 334

By NewsDesk @infectiousdiseasenews

Official numbers coming out of China have seen a significant drop in recent days with the latest information from Chinese authorities showing 433 new confirmed cases (409 in Hubei and 383 in Wuhan) and 29 new deaths (26 in Hubei and 1 in Beijing, Heilongjiang, and Henan) Wednesday.

In South Korea the situation appears to be going in the opposite direction. In the past 24 hours, the Korean CDC reported 334 additional confirmed cases, bringing the total to 1,595, including 13 fatalities.

Globally, more than 82,000 COVID-19 cases have been reported from 50 countries, including 2,804 deaths.

The original article can be found at http://outbreaknewstoday.com/china-reports-433-new-confirmed-covid-19-cases-south-korea-reports-334/

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CHINA/TAIWAN: Coronavirus threat shows ‘unacceptability’ of Beijing isolating Taiwan, US official says

The global spread of coronavirus has prompted the US government to push back against Beijing’s isolation of Taiwan, a state department official said on Thursday.

“This Covid-19 outbreak only further underlines the unacceptability of Taiwan being excluded from the World Health Organisation (WHO) and the World Health Assembly because the People's Republic of China blocks every attempt to do so,” said Jonathan Fritz, deputy assistant secretary at the US State Department’s bureau of East Asian and Pacific affairs.

“We continue to push back very, very hard against that with as many of our like-minded partners as possible, and I think our argument is only bolstered now by the outbreak,” Fritz said, speaking in a House Foreign Affairs Committee hearing on the US response to the contagion’s spread.

“And I would point out that, you know, this push by the [US government] is fully consistent with our US one-China policy and, of course, with the Taiwan Relations Act,” he said.

Taiwan has 31 cases of Covid-19 and one recorded death from the illness caused by the virus, which is also known as Sars-CoV-2.

On Wednesday, Taiwan's Central Epidemic Command Centre banned all of the self-governed island’s doctors and nurses from visiting countries declared to be unfit destinations because of the outbreak, to ensure there would be adequate manpower to tackle the disease at home. The ban is meant to stay in place until the end of June.

Washington has supported calls for Taiwan to be granted observer status at the World Health Organisation’s annual gathering, US Health and Human Services Secretary Alex Azar said in May, at the start of the WHO’s annual assembly, which China has prevented Taiwan from attending.

Beijing claims sovereignty over Taiwan under its one-China policy, which the US acknowledged in 1972.

For years, Beijing allowed Taiwan to send observers to the annual conference, but has blocked its representatives in recent years amid tensions between the mainland’s government and the island’s administration of President Tsai Ing-wen, whose party has a more fractious relationship with Beijing than the opposition.

US backs calls for Taiwan to be observer at World Health Assembly

In Thursday’s hearing, Fritz asserted that Beijing’s insistence on isolating Taiwan in the WHO framework hinders efforts to halt the Covid-19 spread.

“To the to the extent that they are unable to get timely information from the WHO that impacts public health on Taiwan,” he said.

“On the other hand, Taiwan has a lot of expertise ... and they have their own

epidemiological track record now dealing with Covid-19, and to the extent that that is not being shared in a complete and timely fashion with other WTO members, clearly, that doesn't do anything for the public health of the rest of the international community," Fritz added.

Tsai won a second term last month with a comfortable victory over Han Kuo-yu in an election that had been cast as a referendum on the island's approach to Beijing. Tsai, from the independence-leaning Democratic Progressive Party (DPP), captured more than 8 million votes, trumping her major challenger, Han Kuo-yu, from the mainland-friendly Kuomintang by close to 3 million votes.

China's embassy in Washington did not immediately respond to queries about Fritz's comments.

The original article can be found at
https://www.scmp.com/news/china/politics/article/3052783/coronavirus-virus-threat-shows-unacceptability-beijing

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CHINA: 404 Hubei cops infected, four dead so far

A total of 293 police officers and 111 auxiliary police officers in central China's Hubei province were infected with the new coronavirus, as of 5:00 p.m. on Tuesday.

Four among them sacrificed their lives while on duty, the provincial public security department told Chinanews.com on Wednesday.

So far, 88 police officers and 23 auxiliary officers have been cured, said the department.

Statistics from the bureau indicated that there are 63,000 police officers and 56,000 auxiliary police officers working on the frontline batting against the new coronavirus disease.

To date, a total of 49 police officers and auxiliary police officers across China have sacrificed their lives while on duty during the epidemic outbreak, according to the Ministry of Public Security.

https://www.thestandard.com.hk/breaking-news/section/3/142728/404-Hubei-cops-infected,-four-dead-so-far

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GREECE: Greece reports two new coronavirus cases - health ministry

ATHENS, Feb 27 (Reuters) - Greece has reported two new cases of coronavirus in the past 24 hours, bringing the total number of confirmed cases to three.

The health ministry said one of the cases concerned a relative of a 38 year old woman in the northern town of Thessaloniki, the first confirmed case reported in Greece. The woman had recently returned from Milan in northern Italy.

(Reporting By Renee Maltezou)

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HONG KONG: Coronavirus: 59 Hong Kong cops in quarantine after one officer becomes infected

Fifty-nine police officers have been quarantined after a 48-year-old male cop became the 69th person in Hong Kong to be infected with the coronavirus on Thursday night.

The officer, who lives in Yun Mei House, Yau Mei Court in Yau Tong, belongs to the North Point Division and is part of the Eastern District riot police team.

According to the Department of Health, the officer developed a fever and cough on Tuesday and sought treatment at Kwun Tong Community Health Centre. His deep throat saliva specimen tested positive for the coronavirus. He was sent to United Christian Hospital for isolation and treatment on Friday and is in a stable condition.

“The force is highly concerned about the incident, and will cooperate with the Department of Health to conduct the pathological tracking, including providing the officer’s work record and duty sheet,” the police said in a statement.

The force said the officer had no travel history during in the past 14 days and had mainly worked in Chai Wan, North Point and Aberdeen during the incubation period.

His home contacts, namely his wife and mother-in-law, both developed symptoms and were sent to United Christian Hospital for treatment.

On Tuesday, the infected officer attended a dinner party with his colleagues at the Star Seafood Restaurant in Sai Ying Pun. All the 59 officers at the banquet were listed as close contacts with the patient, and had to be put under quarantine.

Among them, 36 people were on duty in the Aberdeen District on Thursday night, while the remaining 23 officers belong to different divisions under the Hong Kong Island Regional Headquarters and the Commercial Crime Bureau.

The police force had suspended their work to minimise their contact with the general public while the officers concerned wait for quarantine arrangements.

The force added they would sterilise related police facilities, vehicles and the disciplined services quarters.

https://www.hongkongfp.com/2020/02/21/coronavirus-59-hong-kong-cops-quarantine-one-officer-becomes-infected/

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IRAN/CHINA: China to provide Iran with 20k coronavirus test kits, says MFA Spox China to provide Iran with 20k coronavirus test kits, says MFA Spox

Tehran, Feb 27, IRNA – Foreign Ministry spokesman Abbas Mousavi said on Thursday that the Chinese government and its Red Cross society are to deliver an aid package to Iran on Friday comprising 20 thousand COVID-19 test kits.

Mousavi who was speaking in a press conference on Thursday added that Iran's Ministry of Foreign Affairs, concurrent with the hardworking Health Ministry's endeavors, established a coronavirus fighting headquarters to pursue international dimensions of the outbreak, including supplying of medical needs.

The official underlined that the ministry has followed up delivery of voluntary aid provided by friendly countries. The first package of such aid offered by Chinese government and its Red Cross society which includes 20,000 coronavirus test kits, will be handed over tomorrow, Mousavi said.

The diplomat expressed Iran's gratitude to the generous aid by Chinese government and people adding that Iran welcomes any assistant and rendering timely services which might be offered by other countries.

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The original article can be found at https://en.irna.ir/news/83693632/China-to-provide-Iran-with-20k-coronavirus-test-kits-says-MFA

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IRAN/SAUDI ARABIA: Iran's vice-president diagnosed with coronavirus; Saudi Arabia halts pilgrimage

DUBAI, United Arab Emirates — Saudi Arabia on Thursday banned foreign pilgrims from entering the kingdom to visit Islam's holiest sites over the new coronavirus , potentially disrupting the plans of millions of faithful ahead of the Muslim fasting month of Ramadan and as the annual hajj pilgrimage looms.

The decision showed the growing worry across the Mideast about the virus as Iran confirmed that infected cases in the country spiked by over 100, to 254 now. Those with the virus in the Islamic Republic now include Iranian vice-president Masoumeh Ebtekar, better known as the English-language spokeswoman "Mary" for the 1979 hostage-takers who seized the U.S. Embassy in Tehran and sparked the 444-day diplomatic crisis, state media reported.

A total of 26 people have died so far in Iran, the world's highest death toll outside of China, where the outbreak began.

Saudi Arabia's barring of pilgrims from Mecca, home to the cube-shaped Kaaba that the world's 1.8 billion Muslims pray toward five times a day, and also the holy city of Medina, appeared unprecedented in modern history. The kingdom's Al Saud ruling family stakes their legitimacy in overseeing and protecting the sites. Authorities also suspended entry to travellers from nations affected by the new virus who hold tourist visas for the kingdom.

It appeared Saudi officials worried about the risk of pilgrims spreading the virus as they had in Iran. The virus' epicenter in the Islamic Republic is the holy Shiite city of Qom, where the faithful in reverence reach out to kiss and touch a famous shrine. That shrine and others have remained open, despite Iran's civilian government calling for them to be closed.

There have been no confirmed cases of the new coronavirus in Saudi Arabia amid the outbreak.

"Saudi Arabia renews its support for all international measures to limit the spread of this virus, and urges its citizens to exercise caution before travelling to countries experiencing coronavirus outbreaks," the Saudi Foreign Ministry said in a statement announcing the decision. "We ask God Almighty to spare all humanity from all harm."

News of the cancellation shocked the Muslim world, as many save their entire lives for a chance to see the Kaaba and walk along the path of the Prophet Muhammad and visit his tomb in Medina.

Hundreds of faithful deplaned in Pakistan as the ban came into effect, while

Indonesia and Turkey had to turn away thousands of pilgrims set to fly. Authorities at Cairo's international airport said the Saudi decision created "intense confusion" and "extreme anger" among thousands of passengers waiting for flights. Security officials needed to call in reinforcements to control the crowd as news of the ban broke, said the officials, who spoke on condition of anonymity as they weren't allowed to speak to reporters.

Disease outbreaks always have been a concern surrounding the hajj, which is required of all able-bodied Muslims once in their life, especially as pilgrims come from all over the world. The earliest recorded outbreak came in 632 as pilgrims fought off malaria. A cholera outbreak in 1821 killed an estimated 20,000 pilgrims. Another cholera outbreak in 1865 killed 15,000 pilgrims and then spread worldwide.

More recently, Saudi Arabia faced the danger from another coronavirus, one that causes the Middle East respiratory syndrome, or MERS, which jumped from ill camels to humans. The kingdom increased its public health measures during the hajj in 2012 and 2013 and urged the ill and the elderly not to take part in the pilgrimage.

Since September 2012, there have been nearly 2,500 cases of MERS reported, with 858 deaths attributed to the virus, according to the World Health Organization. However, the hajj itself saw no MERS outbreak. Saudi officials also instituted bans on pilgrims coming from countries affected by the Ebola virus in recent years as well.

Since the new coronavirus emerged in December in central China, it has sickened 82,000 people globally, with more than 2,700 deaths. The illness it causes was named COVID-19, a reference to its origin late last year.

While millions attend the hajj, which is this year set for late July into early August, millions more come during the rest of the year to the holy sites in the kingdom. Those other pilgrimages are referred to as the umrah, which drew 7.5 million people in 2019 alone. One of the biggest times for the umrah is the Muslim holy fasting month of Ramadan, which is set to begin at the end of April.

Those pilgrims spend upward of 10 days at holy sites, mingling in tight quarters. Of those coming, many are older, have pre-existing chronic diseases and come from countries "with suboptimal disease surveillance," according to a letter Thursday to The Lancet medical journal.

"Respiratory infections are the most common illness among pilgrims … and the lack of social distancing among pilgrims as they engage in religious rituals amplifies their risk of acquiring and transmitting respiratory diseases," the letter read.

The letter added: “We do not need to wait for the first case to emerge in Saudi Arabia’s holy sites. The time for preparedness is now.”

Dr. Ziad A Memish, a Saudi professor who studies infectious diseases and co-signed the letter, said he welcomed the kingdom’s decision.

“This is a very tough decision,” he told The Associated Press. “But with the rapid spread of COVID-19 and a lack of good diagnostics, preventative vaccines and therapeutics, this is the best decision that could be taken at such difficult times.”

Kristian Ulrichsen, a research fellow at the James A. Baker III Institute for Public Policy at Rice University, called the Saudi decision “unprecedented.”

“Given the worldwide spread of the virus and the global nature of the umrah, it makes sense from a public health and safety point of view,” said “Especially since the Iranian example illustrates how a religious crossroads can so quickly amplify the spread and reach of the virus.”

By leaving the suspension of travel to the holy sites open-ended, Saudi Arabia has opened the possibility of this year’s hajj potentially being disrupted as well.

The hardest-hit nation in the Mideast is Iran, where Health Ministry spokesman Kianoush Jahanpour on Thursday reported 26 deaths out of 245 confirmed cases of the illness. Experts are concerned Iran may be underreporting cases and deaths, given the illness’ rapid spread from Iran across the Persian Gulf.

Jahanpour seemed to address that, saying new labs in Iran were conducting tests and the number of confirmed cases could continue to spike in coming days. Thursday’s number represented a jump in over 100 new cases from the previous day. Authorities said Friday prayers in Tehran and other cities would be cancelled, according to semiofficial Iranian news agencies.

Supreme Leader Ayatollah Ali Khamenei on Thursday praised medical staffers, calling their work “very invaluable.” But the virus has struck the official in charge of Iran’s response to the outbreak, as well as at least two lawmaker. On Thursday, the state-run IRNA news agency reported that Ebtekar, the Iranian vice-president and hostage-taker spokeswoman, had the virus. It reported she had quarantined herself at home.

The original article can be found at https://globalnews.ca/news/6603204/iran-saudi-arabia-coronavirus/

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IRAN: Iran vice president is one of 7 officials to contract coronavirus

Via The New York Times: Iran Vice President Is One of 7 Officials to Contract Coronavirus. Excerpt:

A senior figure in Iran's government, who sits just a few seats away from President Hassan Rouhani at cabinet meetings, has fallen ill with coronavirus, making her Iran's seventh official to test positive, including one prominent cleric who has died.

Vice President Masoumeh Ebtekar, Mr. Rouhani's deputy for women's affairs and the highest-ranking woman in the government, has a confirmed coronavirus infection and is quarantined at home, her deputy said Thursday.

The disclosure came a day after a cabinet meeting in which she was in close contact with other government leaders, including Mr. Rouhani. A photo posted by a BBC Persia reporter on Twitter showed she had been sitting a few yards from the president.

Ms. Ebtekar, one of four vice presidents, was known to Americans as "Mary" during the Tehran hostage crisis four decades ago, when, as a young revolutionary, she was a spokeswoman for the captors of the 52 Americans held at the United States Embassy.

Iran now appears to have the highest number of government officials infected by the coronavirus, which was first officially reported in the holy Iranian city of Qom on Feb. 19. The disease is believed to have spread to the country from China, which has maintained close economic relations with the Tehran government despite American sanctions.

A regional crossroads, Iran also appears to be a primary source of the infections that have spread to neighbors.

At least 245 people have been infected in Iran, with 26 deaths, Health Ministry officials said Thursday, most of them in Qom, a destination for Shiite pilgrims.

But health experts estimate the number of infections is far higher, possibly over a thousand, because the country's fatality rate of about 20 percent seems so high. The World Health Organization has said the fatality rate is about 2 percent.

The original article can be found at
https://crofsblogs.typepad.com/h5n1/2020/02/iran-vice-president-is-one-of-7-officials-to-contract-coronavirus.html

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JAPAN: Woman confirmed as coronavirus case for 2nd time, weeks after initial recovery

A woman working as a tour bus guide in Japan tested positive for the coronavirus for a second time, Osaka's prefectural government said Thursday, the first person in the country to do so amid growing concerns about the spread of the infection.

The second positive test comes as the number of confirmed cases in Japan rose to 186 Thursday from around 170 the day before. Tokyo has urged big gatherings and sports events be scrapped or curtailed for two weeks to contain the virus while pledging the 2020 Olympic Games will still go ahead in the city.

The 186 cases reported by Japan's health ministry are separate from 704 reported from an outbreak on a cruise liner that was quarantined off Tokyo earlier this month. A total of seven people have died, including four from the ship.

The woman, a resident of Osaka, tested positive on Wednesday after developing a sore throat and chest pains, the prefectural government said in a statement, describing her as being in her 40s. She first tested positive in late January and was discharged from the hospital after recovering on Feb 1, according to the statement.

The health ministry confirmed the case was the first in Japan where a patient tested positive for coronavirus for a second time after being discharged from hospital, the Nikkei newspaper said.

Though a first in Japan, cases of second positive tests have been reported in China, where the disease originated late last year. The outbreak has spread rapidly and widely, infecting about 80,000 people globally and killing nearly 2,800, the vast majority in mainland China.

"Once you have the infection, it could remain dormant and with minimal symptoms, and then you can get an exacerbation if it finds its way into the lungs," said Philip Tierno Jr, Professor of Microbiology and Pathology at NYU School of Medicine.

He said much remains unknown about the virus. "I'm not certain that this is not bi-phasic, like anthrax," he said, meaning the disease appears to go away before recurring.

Asked to comment on prospects for the Olympic Games going ahead in Tokyo this summer, Prof Tierno said, "The Olympics should be postponed if this continues ... There are many people who don't understand how easy it is to spread this infection from one person to another."

Japan has changed its strategy in combating the contagion, seeking to slow its

spread and minimize the number of deaths.

As part of the attempt to contain the outbreak, Tokyo Olympics officials are considering scaling down the torch relay, Tokyo 2020 CEO Toshiro Muto said on Wednesday.

The government is also considering scaling back this year's March 11 memorial ceremony for victims of 2011's massive earthquake and tsunami, Chief Cabinet Secretary Yoshihide Suga told reporters on Thursday.

Meanwhile a major Japanese bank reported an employee had tested positive for coronavirus. MUFG Bank, part of Mitsubishi UFJ Financial Group Inc, the country's largest lender by assets, said a member of staff at a branch in Aichi Prefecture, had been confirmed to have the virus on Wednesday.

The original article can be found at
https://japantoday.com/category/national/japanese-woman-confirmed-as-coronavirus-case-for-2nd-time-weeks-after-initial-recovery

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MEXICO: 6,000 people held on cruise ship as Mexico conducts coronavirus tests

Mexico City (dpa) - Some 6,000 people are being held on a cruise ship at the Mexican port of Cozumel while medical experts conduct tests to rule out the presence of the novel coronavirus, officials said Thursday.

The MSC Meraviglia has docked on Cozumel island off the coast of Mexico's eastern state of Quintana Roo after being turned away at two previous destinations - Jamaica and Grand Cayman - because a crew member had been diagnosed with a common flu.

Quintana Roo state governor Carlos Joaquin said entry into the port had been granted "due to weather conditions," but that permission to disembark would only be given once medical officials had given the all-clear that no one on board had contracted the deadly virus.

Mexican President Andres Manuel Lopez Obrador said although it was important to uphold medical standards, the country would not succumb to hysteria surrounding the virus.

"We cannot close our ports, our airports," Lopez Obrador said in his daily press conference.

Latin America's first case of the coronavirus, which originated in December in China's Wuhan region and has since spread to more than 40 countries, was confirmed in Brazil on Wednesday.

Notebook

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MULTIPLE COUNTRIES: Rest of world overtakes China in new coronavirus cases

India, Feb. 27 -- The World Health Organization on Wednesday said that for the first time the number of new coronavirus cases reported daily outside mainland China exceeded those within the country, marking a shift in the outbreak that has killed more than 2,700 and infected over 80,000.

The agency had previously warned that the contagion, which is believed to have originated from a meat market in the central Chinese city of Wuhan last December, would spread across the world while the outbreak in China appears to have peaked on February 2.

The UN health agency put the number of new cases in China on Tuesday at 411 (down from 508 a day before) while those registered outside the country stood at 427. China's death toll rose by 52 to 2,715.

"Yesterday, the number of new cases reported outside China exceeded the number of new cases in China for the first time," WHO chief Tedros Adhanom Ghebreyesus told diplomats in Geneva.

The number of recorded infections by the pathogen, which is officially called the SARS-Cov-2 and the disease it causes is Covid-19, rose to 80,988 across 33 countries. The contagion spread beyond the European hotspot of Italy, while Brazil confirmed Latin America's first infection.

Greece too confirmed its first case, a woman who had recently travelled to northern Italy. Croatia, Austria and Algeria reported cases linked to Italy - the hardest-hit European country -- while a hotel in Spain remained under lockdown after an infected Italian tourist was hospitalised with the virus.

Italy has confirmed 374 cases of the disease and 12 deaths, and says the virus has spread to some southern regions as well.

On Wednesday, a 60-year-old man became the second French victim of the virus

in the country, the health ministry announced. France reported four new cases in the past 24 hours, including two returning from Italy, bringing the total number of infections in the country to 17.

With cases being reported in more countries, traders are growing increasingly fearful about the impact on the global economy that has already been hit by its dependence on China.

World stocks tumbled for the fifth day on fears of prolonged disruption to supply chains across the world. Stock markets globally have wiped out $3.3 trillion of value in the past four trading sessions, as measured by the MSCI all-country index.

Indian equities fell for a fourth consecutive day following sustained global sell-off over coronavirus fears. Wall Street stocks, however, opened higher on Wednesday after suffering a second straight rout a day before despite officials warning that the outbreak was inevitable.

However, WHO's Europe director Hans Kluge said at a press conference in Rome on Wednesday that there was no need to panic as the mortality rate for the disease was 2% and had fallen to 1% in China, which accounts for over 96% of all coronavirus infections. "Bear in mind that four out of five patients have mild symptoms and recover," Kluge said.

In the Middle East, Iran has been hit the hardest, with a total of 139 cases and 19 deaths. Even the country's deputy health minister Iraj Harirchi said he has contracted the virus.

In Asia, South Korea remains the worst-affected country after China, reporting 284 new infections on Wednesday. It was the country's largest daily increase in the number of cases to date, taking the overall national tally to 1,261, and the death toll rising to 12.

Pakistan on Wednesday confirmed its first two cases of coronavirus, but both patients were in a "stable" condition, the health minister said, adding that "things are under control".

In the United States, which has 57 cases, health authorities urged local governments, businesses, and schools to take precautions. "It's not a question of if. It's a question of when and how many people will be infected," the US's Centers for Disease Control and Prevention principal deputy director Anne Schuchat said on Tuesday.

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NETHERLANDS: Patient with coronavirus in the Netherlands

Publication date 27-02-2020 | 21:19

Google translation

The new corona virus (COVID-19) was found in a patient in the Netherlands. This has been determined today with lab tests. The patient, who recently visited the Lombardy region (Italy), is in isolation. The GGD Municipal Health Service maps contacts of this patient through contact research.

The new coronavirus can spread through drops. For example if someone coughs or sneezes in the face of another. To prevent the disease from spreading further in the Netherlands, the Municipal HealthService (GGD) and the RIVM National Institute for Public Health and the Environmentmap out who has been in close contact with the infected patient. These people (referred to as contacts) are monitored and must record their temperature twice a day and report this to the GGD. They must also report other complaints that they have. These measures reduce the chance that the disease can spread in the Netherlands.

RIVM remains alert to possible new infections and applies the same protocol when new infections are found: isolation, contact investigation and continuous monitoring of the patient.

Symptoms of the disease are fever and respiratory symptoms such as shortness of breath or cough. Someone who has spent the last 14 days in an area where COVID-19 is widespread (such as China, South Korea, but also in some municipalities in Italy) with a fever and one of the aforementioned airway complaints can be tested for COVID-19 , the disease caused by the virus called SARS severe acute respiratory syndrome - CoV coronavirus -2. A doctor can also request this test for someone with these complaints if he or she has been in contact with a patient with the new corona virus.

The original article can be found at https://www.rivm.nl/nieuws/patient-met-nieuw-coronavirus-in-nederland

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NIGERIA: Nigeria reported the first ill with the novel coronavirus

the Federal Ministry of health of Nigeria announced the first in the country the

case of infection with the novel coronavirus. The corresponding message was published on Friday in the Twitter Department.

As specified, the disease is a coronavirus recorded in Lagos state.

Recall that outside of China coronavirus has spread in 45 countries, including in Russia. Chinese authorities confirmed the country 2788 deaths, more than 36.1 thousand people were recovered, the number of infected has reached more than 78.8 thousand

The original article can be found at http://www.kxan36news.com/nigeria-reported-the-first-ill-with-the-novel-coronavirus

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PAKISTAN: Pakistan confirms first two COVID-19 cases

Two cases of coronavirus have been confirmed in Karachi, Special Assistant to the Prime Minister on Health Dr Zafar Mirza confirmed on Wednesday, minutes after the first case was reported in the port city.'I can confirm first two cases of coronavirus in Pakistan. Both cases are being taken care of according to clinical standard protocols and both of them are stable,' Dr Mirza wrote on Twitter.

He also noted that there was 'no need to panic [as] things are under control'.

The second case was reported in Islamabad and was shifted to a quarantine in the capital's Pakistan Institute of Medical Sciences (PIMS).

Earlier, a spokesperson for the Sindh health department confirmed that the 22-year-old patient - Pakistan's first case - had arrived in aeroplane from Iran and has a history of travel to Tehran from where he reportedly acquired the virus. He was suffering from coronavirus symptoms while he was in Iran, it mentioned.Meanwhile, Director General Health Department Dr Tahir Nadeem Wednesday said the provincial government has released Rs 100 million grant to cope with any emergency related to coronavirus in the region.Talking to media here, he said that effective measures have been put in place to curb outbreak of Coronavirus, adding that thermal screening is being performed at Pak-Afghan border to check the disease.

He said teams have also being deployed at Bacha Khan Airport to screen each and every passenger coming from affected countries.The DG said that Police Services Hospital has been specified to deal with coronavirus patients. Until now not a single case of coronavirus has been reported from any part of the province, he said and added that out of 16 suspected cases none was found positive.

In the wake of reports of Coronavirus cases in Iran and Afghanistan, a 13-member

medical team including doctors has scanned 143956 people at Torkham Border.Deputy Commissioner Khyber, Mehmood Aslam Wazir on Wednesday said a medical team was busy in scanning people coming from Afghanistan through Torkham Border with thermal scanning guns to check the spread of Coronavirus.

To cope with any emergency, he said ambulances have been shifted to the border besides emergency spots have also been declared at Pak-Afghan Dosti Hospital Torkham, Tehsil Headquarter Hospital Landikotal and Jamrud.

The facility of keeping suspected patients in isolation has also been made available at the border, he said adding the administration was doing its best to cope with any situation with regard to threat of spread of the virus.The Khyber Administration and Health Department, he said were in close liaison and cooperation however, he added so far no such case of Coronavirus has been reported at Torkham Border.Meanwhile, the closure at the Pakistan-Iran border continued for a fourth straight day on Wednesday amid the coronavirus outbreak in Iran, reported Geo News.

Quetta-Taftan train service suspendedRailways Minister Sheikh Rasheed Ahmed also announced the suspension of train service between Quetta and Pakistan's Taftan amid fears of coronavirus outbreak.

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SOUTH KOREA: (2nd LD) Two more Air Force officers, two military workers test positive for coronavirus

SEOUL, Feb. 27 (Yonhap) -- Two Air Force officers and two civilian workers for the military tested positive for the new coronavirus Thursday, bringing the total number of confirmed cases in the military to 25, the defense ministry said.

Three of the four new patients are stationed in South Korea's southeastern city of Daegu, where more than 1,000 confirmed cases have been confirmed. Including patients in its surrounding North Gyeongsang Province, more than 80 percent of the total cases have occurred there, according to the Korea Center for Disease Control (KCDC).

Of the total cases in the military, 15 are in the Army, eight in the Air Force and one each in the Navy and the Marine Corps, according to the ministry.

Three of the 25 patients are civilian workers, and the remainder are active-duty soldiers, it added.

As part of efforts to stem the further spread of the potentially deadly virus into the barracks, around 9,900 service members are quarantined at their bases.

Of them, about 820 have either shown symptoms or had direct contact with infected patients, while the remainder had visited Daegu or its neighboring regions after Feb. 10.

Among the U.S. Forces Korea (USFK) and related people, two have tested positive for the virus, including one active-duty soldier.

To guarantee the safety of their service members and to support Seoul's containment efforts, the South Korea-U.S. combined forces command decided to postpone their springtime joint military exercises slated for early March indefinitely.

Following the first confirmed case among its service personnel Friday, the South Korean defense ministry has halted off-installation drills and physical examinations for potential draftees. It has also restricted all enlisted soldiers' ability to go on vacation, stay outside their base and meet visitors.

USFK also raised its risk level to "high" and has limited its soldiers' non-essential off-installation activities and social events, as well as implementing a tougher process for accessing garrisons across the country.

graceoh@yna.co.kr (END)

20200227 1728 KST

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SOUTH KOREA: Coronavirus cases reach 1,596 on tests of religious sect members

Some 46% of confirmed cases related to religious sect in Daegu

The confirmed coronavirus cases in Korea increased by 334 to 1,595 on Thursday as authorities ramped up efforts to test some 210,000 members of a religious sect whose members are at the centre of the coronavirus outbreak, KCDC reported. Some 46% of the confirmed cases in Korea are related to members of the sect, however, new clusters are slowly emerging in other cities such as Busan and Seoul where confirmed cases stood at 55 and 58. Cases are expected to continue to rise in the coming days due to the testing of the religious sect members. The authorities have tested 56,395 patients for the coronavirus thus far (up by 4,130 in a day) of which 36,298 have tested negative and the remaining are still being

tested.

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SOUTH KOREA: South Korea coronavirus cases surpass 2,000

South Korea reported 256 more confirmed cases of the novel coronavirus on Friday morning, bringing the national total to 2,022, according to the South Korean Centers for Disease Control and Prevention (KCDC).

The country has the most confirmed coronavirus cases outside of mainland China.

Among the 256 new cases, 182 are from Daegu, the epicenter of the outbreak in South Korea. A total of 1,314 cases since the beginning of the outbreak have come from Daegu, according to the KCDC.

Many of the cases are linked to the Shincheonji religious group in the country's south.

An additional 49 cases are from North Gyeongsang province, which surrounds Daegu city.

Thirteen people have died from the virus in South Korea.

The original article can be found at https://www.cnn.com/asia/live-news/coronavirus-outbreak-02-28-20-intl-hnk/index.html

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SPAIN: Spain probes first local coronavirus transmissions

Spanish health ministry officials were on Thursday investigating the country's first suspected cases of locally-transmitted coronavirus infections, with one elderly patient in a serious condition.

Three people are in hospital -- two in Madrid and one in Seville -- with the flu-like disease.

None had travelled to a hotspot country, nor had any connection to a known patient, said Fernando Simon, the ministry's chief coordinator for health emergencies.

"Their possible ties with cases outside of Spain, or imported cases are being

investigated," he told a news conference.

Since the start of the epidemic, Spain has registered 17 cases of coronavirus infection, 15 of which were detected since Monday evening.

Of that number, 12 cases involve Italian nationals or people who had been in Italy, the worst-hit country in Europe where more than 525 people have been infected and 12 have died.

Four Italian tourists tested positive on Tenerife in the Canary Islands with authorities imposing a quarantine on the hotel where they were staying with more than 700 other guests.

But the quarantine was partially lifted on Thursday, with staff and around 130 tourists allowed to leave after testing negative, officials said.

If confirmed that the disease is now spreading from person-to-person within Spain, the government would have to take extra measures to prevent further contagions, such as "reducing large gatherings", Simon said.

One of the two Madrid patients is a 77-year-old man is seriously ill and in intensive care, Madrid's regional government said. The other is a 50-year-old man in stable condition.

The first suspected case of local transmission was discovered on Wednesday in a 62-year-old man in the southern region of Andalusia who is in isolation at a Seville hospital.

"The fact that it has not been possible to determine where he became infected means the virus may have circulated for a while in Andalusia," Simon told radio Onda Cero earlier on Thursday.

Among the latest diagnosed with the infection was a sports journalist from the coastal city of Valencia who went to Milan to cover the February 19 Champions League clash between Valencia and Atalanta Bergame.

"Coronavirus has recruited me," joked reporter Kike Mateu, wearing a mask in a video sent from his hospital bed.

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UNITED KINGDOM: Derbyshire primary school shut over 'confirmed coronavirus case' as numbers rise to 15 in UK

It brings the number of confirmed coronavirus cases in the UK to 15

A primary school in Buxton has been closed after a parent was 'confirmed to have coronavirus' -as the number of reported cases in the UK rises to 15.

Two further patients in England have tested positive for coronavirus , the Department of Health said.

The virus was passed on in Italy and Tenerife and the patients have been transferred to specialist NHS facilities at the Royal Liverpool Hospital and the Royal Free Hospital, London.

The department published the update from England's Chief Medical officer, Chris Whitty, to its Twitter account on Thursday.

Social media users were left asking a number of questions, such as where the individuals are from, and whether they had symptoms.

However, more information about the cases is yet to be confirmed.

But a school in Buxton has closed following a confirmed case among the parent population.

The parents of pupils at Burbage Primary School in Buxton, Derbyshire, have been told that the school would be closed on Thursday as a result of a "confirmed case of coronavirus amongst our parent population".

Burbage Primary has 350 students sent a message to parents via WhatsApp on Wednesday night saying the decision had been taken as a "precautionary measure and to enable a deep clean to be completed".

Across the UK, at least eight schools have closed while others -including Prince George's and Princess Charlotte's school in London -have sent pupils home amid fears they may have been exposed to coronavirus during half-term trips to northern Italy.

On Tuesday, Health Secretary, Matt Hancock, told British travellers returning home from northern Italy to self-isolate for 14 days if they had symptoms.

This has led to a number of school pupils and staff across the country to stay indoors over fears they may have been exposed to the virus during school ski trips to the region.

Cases of the outbreak in Italy has surged to 447, with a total of 12 deaths.

On Wednesday, it was reported that four people tested positive for the virus at a hotel in Tenerife, which is popular with British tourists.

The four-star H10 Costa Adeje Palace Hotel was put on lockdown where around 1,000 guests were told to remain in their rooms.

The latest confirmed cases in the UK on Thursday comes as the government is soon set to launch their own public information campaign to reassure people.

Four cruise ship passengers brought to the UK from the Diamond Princess cruise ship in Japan tested positive for coronavirus on February 23 -which had brought the previous total of cases in the UK to 13.

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UNITED KINGDOM: Fears of coronavirus pandemic hitting UK grow as two new cases confirmed

Fears of a coronavirus pandemic hitting Britain grew today as a leading expert warned that the number of cases in Italy and other countries is far higher than reported — and two new cases were confirmed in the UK.

Chief medical officer Professor Chris Whitty announced that one person, understood to be a Londoner who recently returned from Italy, was being treated at the Royal Free Hospital in the capital.

A second individual, who had been in Tenerife and is believed to be linked to a coronavirus-hit hotel in lockdown on the island, was being cared for at the Royal Liverpool Hospital.

The cases take the total so far here to 15, including four who were repatriated from the Diamond Princess luxury liner in Japan.

The Italian authorities have sealed off about 12 towns in Lombardy and Veneto to try to contain the spread of the virus, with the number of cases officially put at 400 last night, an increase of 80 on the previous day, with 12 deaths.

However, Professor Neil Ferguson, director of the Centre for Global Infectious Disease Analysis at Imperial College, London, said there were “definitely thousands” of cases in northern Italy.

“The great majority of cases for this virus we think have quite mild disease and

they are not being detected," he told BBC Radio 4's Today programme.

If there is an outbreak in the UK, people could be advised to "minimise social contact", he added, but quarantining of whole towns or cities, as happened in China and Italy, is unlikely.

As the Government sought to delay any major outbreak here until the summer when the NHS will be under less pressure:

Australian Prime Minister Scott Morrison warned: "There is every indication that the world will soon enter a pandemic phase of the coronavirus."

He triggered an emergency response plan which aimed to ensure hospitals have enough medical supplies, personal protective equipment and staff.

Chinese health officials said 14 per cent of patients discharged from hospital after recovering from the virus later tested positive again.

London Mayor Sadiq Khan is to hold a high-level meeting to ensure the capital's readiness and resilience for further cases of coronavirus, including considering concerns over the risk of its spread on the Tube.

One of London's top private schools, Dulwich Prep London, became the latest to announce it was closing for a few days "as a precautionary measure" after two pupils returned from Italy feeling unwell.

The FTSE-100 and other stock markets dropped sharply this morning as concerns grew over a pandemic, with trillions wiped off the value of shares globally in less than a week.

Criminals are disguising themselves as World Health Organisation officials to steal money or sensitive information with phishing emails about the coronavirus threat, the WHO warned.

Donald Trump put US vice president Mike Pence in charge of America's coronavirus response, insisting the risk remained "very low".

He defended his handling of the crisis after being criticised for earlier lashing out at the media, accusing it of trying "to make the Caronavirus [sic] look as bad as possible". There have been 59 cases in the US, including 42 American passengers repatriated from the Diamond Princess.

French President Emmanuel Macron visited a hospital in Paris that has been treating coronavirus patients. Two people have died from the virus in France, a 60-year-old French man and an 80-year-old Chinese tourist.

Officials in Germany were racing to trace contacts of infected individuals after health minister Jens Spahn said: “We are at the beginning of a coronavirus epidemic in Germany.” So far there have been 21 confirmed cases.

South Korea reported 505 new cases, taking the total to 1,766, with 13 deaths, with a large proportion of them linked to a religious cult in the southeastern city of Daegu.

Iran’s state news agency said 22 people had died from coronavirus, with 141 cases confirmed, though this is believed to be a huge underestimate.

China reported 433 new cases yesteday to take the total to 78,497, with 29 more killed and a death toll so far of 2,744 people.

Professor Ferguson, a government adviser in his role on the Committee on New and Emerging Respiratory Virus Threats, suggested the case figures were under-reporting.

Health officials in the UK are so concerned about the quarantine area in northern Italy that they have imposed similar advice to returning Britons as for the Hubei region at the centre of the outbreak in China to self-isolate for 14 days even if they do not have symptoms. “What’s been clear is that there has been transmission in Italy ongoing and not detected for at least three weeks and probably more like a month,” said Professor Ferguson. “Behind each one of those deaths probably lies about a thousand cases.”

He added that the scale of the disease meant it could not be contained by “chasing cases, isolating them”, but that “large scale community measures”, as happened in China, Hong Kong and Singapore, could reduce transmission.

Containment measures could “buy time” to push an outbreak’s peak into the summer rather than the spring or the autumn. The vast majority of people recover from coronavirus.

As the virus spread to nearly 50 countries, Saudi Arabia halted travel to the holiest sites in Islam over fears of an epidemic just months ahead of the annual Hajj pilgrimage.

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Subject: Fw: Non-Pharmaceutical Intervention Guidance
Date: Friday, February 28, 2020 1:54:17 PM
Attachments: NPI Guidance - Intervention Overview and Implementation v1.0.pdf

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Partners,

the email below was sent to our broader distribution groups.

We'll be covering this in more detail on Tuesday's planning meeting.

Thank You,

City of Seattle Office of Emergency Management
seattle-eoc@seattle.gov

During an emergency go to www.seattle.gov for the latest information

---

From: Seattle-EOC
Sent: Friday, February 28, 2020 1:49 PM
Subject: Non-Pharmaceutical Intervention Guidance

Greetings Partners and Stakeholders,

Attached is the guidance on non-pharmaceutical interventions (NPI) from Washington State Department of Health (DOH). The guidance includes an overview and implementation strategies for various NPIs.

Additionally, at 10:00 AM this morning DOH and Washington State Emergency Management Division (EMD) provided a webinar to introduce and highlight aspects of the guidance. Below are the notes.

What we'd like to emphasize are NPIs 1-5, these are actions that should be taken now, aggressively and broadly/by everyone.

Risk is low for people in the US at this time.
Goal is to slow the spread:

- to give healthcare system time to prepare
- prepare for implementation of NPIs and
- better understand the virus/disease

DOH released a document outlining 13 non-pharmaceutical intervention strategies. We should be prepared to implement ALL of the NPI strategies, beginning now and getting progressively more aggressive. The purpose of NPI is the slow the spread—spread it out overtime; we will not eliminate it. Do expect the disease will spread. Strategies should be focused on reducing spread and protecting the people at highest risk

Menu of NPI:

1. Increase handwashing and use of alcohol-based sanitizer
2. Respiratory hygiene and cough etiquette
3. Keep distance from others (> 6 feet)
4. Frequently clean and disinfect surfaces
5. Remain home during a respiratory illness
6. Voluntary isolation of sick persons
7. Voluntary quarantine of contacts of sick persons
8. Involuntary isolation of sick persons
9. Involuntary quarantine of contacts of sick persons
10. Recommend or order cancellation of major public and large private gatherings
11. Recommend or order closure of schools, child care facilities, workplaces, and public buildings
12. Prevent non-emergency travel outside of the home
13. Establish cordon sanitaire

Public health does not believe that most restrictive measures would be warranted for covid bc the fatality rate is not so high as to merit the societal/economic costs of these measures. The most restrictive approaches are unlikely to be reasonable for this incident

- NPIs 1-5 should be done now as broadly as possible. Re: social distancing, DOH is not recommending changes that will compromise the normal functions of society *at this point*, but asks us to think through what can be done to reduce density of people where possible—e.g. is there a way to add additional buses to decrease density.—for now, find the simple and unrestrictive ways.
- NPI 6-9 are already underway for directly impacted people
- DOH is putting together tiered implementation strategies for 10-13, targeted to the specifics of covid-19 and the populations most vulnerable. For example, covid19 symptoms appear to be universally mild and non-existent among children, might be better to target implementation to protect seniors rather than children (this is different than typical with influenza).

    - We requested that they also develop recommendations for tiered implementation of social distancing as well.
- Masks are not an effective strategy to prevent spread among general population, creates a drag on supply without reducing disease effectively.
- There are varying levels of severity when implementing cordon sanitaire—the implementation in China is much more restrictive than that being implemented in Italy. In Italy, they identified small and localized places of spread and targeted those locations with a minimally restrictive cordon. They set up checkpoints into and out of those areas. Asymptomatic individuals can leave if they have a good reason (e.g. an employee badge for critical infrastructure or healthcare). Asymptomatic people can come in for good reason (e.g. providing deliveries) but should minimize their contacts within the community.

Now is the time to further intensify collaboration between public health and EM in jurisdictions and elected officials.

Pardon any duplication.

Best Regards,

Ivan W Lee
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Washington State Department of Health

Non-Pharmaceutical Interventions (NPI) Implementation Guide

NPIs are mitigation strategies to limit and prevent exposure to disease. These include personal protective steps for everyday use, community containment, and environmental measures to control viral disease outbreaks and pandemics.

This guide will help you decide what NPIs to consider implementing in an outbreak. Public health officials will need to determine the appropriate set of interventions to implement in combination for a given incident.

This guide is intended for an Incident Management Team, the Department of Health, multi-agency coordination policy groups, and local health officers.

FEBRUARY 2020

Contents

NPIs

This guide lists 13 interventions to mitigate the spread of a contagious disease, such as a novel virus. It is part of the state's Communicable Disease and Pandemic Response plan and includes personal, community, and environmental methods of control.

Its purpose is to help public health officials and partners choose which mitigation strategies to implement to limit and prevent the spread of novel respiratory diseases of concern.

The interventions included are:

1. Increase handwashing and use of alcohol-based sanitizer
2. Respiratory hygiene and cough etiquette
3. Keep distance from others (> 6 feet)
4. Frequently clean and disinfect surfaces
5. Remain home during a respiratory illness
6. Voluntary isolation of sick persons
7. Voluntary quarantine of contacts of sick persons
8. Involuntary isolation of sick persons
9. Involuntary quarantine of contacts of sick persons
10. Recommend or order cancellation of major public and large private gatherings
11. Recommend or order closure of schools, child care facilities, workplaces, and public buildings
12. Prevent non-emergency travel outside of the home
13. Establish cordon sanitaire

Table 1 lists expected results on the spread of disease if each intervention were to be used, and gives examples of how each of the interventions can be done.

Transmissibility, Severity

Each intervention lists a scaled measure of transmissibility and a scaled measure of clinical severity as identified by the CDC.

- **Transmissibility** is a scale of 1 to 5, with 5 being the most contagious
- **Clinical severity** is a scale of 1 to 7, with 7 being the most severe in terms of number of cases, number of hospitalizations, and fatality ratio.

The complexity of the interventions increases as transmissibility and clinical severity increase. **Table 1** connects these scales to each intervention and **Table 2** defines them.

ESF-8 Supporting Agencies

These Emergency Support Function 8 (ESF-8) supporting agencies contribute to public health response efforts, including community mitigation strategies, in collaboration with the Department of Health as the lead agency for ESF-8.

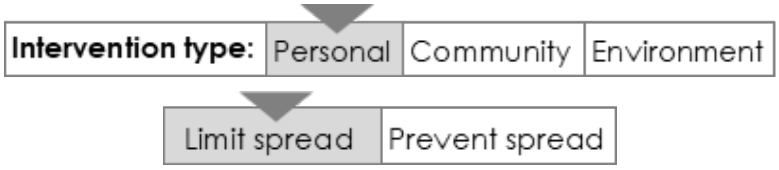
- Department of Agriculture
- Department of Ecology
- Department of Enterprise Services
- Department of Fish and Wildlife
- Department of Labor and Industries
- Department of Licensing
- Department of Social and Health Services
- Department of Transportation
- Washington Military Department
- Washington State Health Care Authority
- Washington State Patrol
- Washington State Pharmacy Association
- Washington State Office of the Attorney General
- Washington State Hospital Association
- Washington State Pharmacy Association
- Washington State Disaster Medical Advisory Committee
- Northwest Healthcare Response Network
- Local Health Officers
- Local Emergency Management Agencies
- Tribal Governments

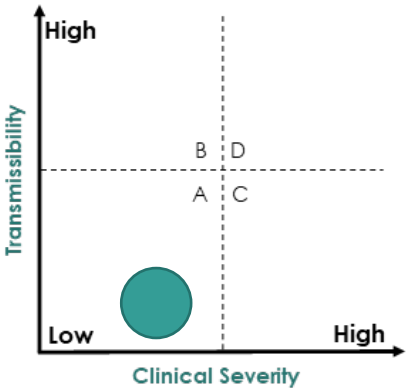
This guide was developed from the Communicable Disease and Pandemic Response Plan, Risk Matrix and Recommendations Table of Annex 4. (Document link — WA Emergency Management Division)

Intervention 1: Increase Handwashing and Use of Alcohol-Based Hand Sanitizer

Reduce probability of direct and indirect transmission of the disease by handwashing regularly with soap and water or using hand sanitizer.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Hand hygiene reduces the transmission of viruses that occurs when one person touches another with a contaminated hand, or when a person touches an object or surface that's been contaminated and then touches their own nose or face with that hand before washing it.

Success Factors: Success depends on public education effectiveness, public compliance, and access to handwashing facilities and sanitizing stations.

Possible Drawbacks: None anticipated, although there is a potential concern about the supply chain for hand sanitizer and soap.

Possible Benefits: Quick and easy to implement; effective at reducing illness due to direct/indirect contact.

Settings and Use

- Personal non-pharmaceutical interventions (NPIs) are everyday preventive actions that can help keep someone from getting and spreading respiratory illnesses transmitted by droplet routes.
- Use at homes, child care facilities, schools, workplaces, houses of worship, public transit, and other settings where people regularly gather.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers

State

Key Decision Makers: The Secretary of Health has the same authority as a local health officer (LHO) to control and prevent the spread of disease (under RCW 43.70.130), and may exercise the authority in an emergency, when LHOs agree, or when LHOs fail or are unable to act, per RCW 43.70.130(7). This includes the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Determine financial responsibility for providing handwashing stations and/or hand sanitizer.
- Research/discuss resource procurement needs:
    - Local/state/national partners
    - Private/public partners
- Develop communication strategies and communication plans.
- Engage community partnerships to promote message.

Implementation Methods

- **Create an inclusive public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.
    - Communicate on multiple platforms appropriate to the affected communities.
    - Connect with community leaders or representatives for advice and buy-in.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Provide consistent messaging throughout the state via media outreach.
    - Encourage workplaces to make handwashing a priority among employees.

- **Create and distribute accessible, public messaging**
    - Display culturally appropriate messaging in public places.
        - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.

- **Place hand-washing or hand sanitizer stations in accessible areas**
    - Deploy disinfectant stations in the following or similar locations: Bus stations, transit centers, transportation hubs, health care facilities, schools, shopping centers, entertainment venues, workplaces
        - Prioritize areas of known exposure or at increased risk of exposure.

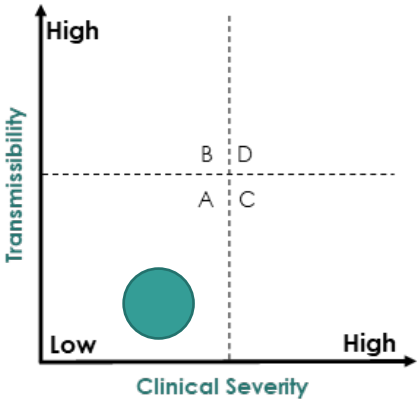
Intervention 2: Respiratory Hygiene/Cough Etiquette

Reduce probability of droplet transmission of the disease by reducing the range of respiratory droplets and aerosols from coughs, sneezes, and other sources.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D

Intervention type:	Personal	Community	Environment

Limit spread	Prevent spread



Rationale for Use as Public Health Strategy

Respiratory etiquette is widely supported in literature and by studies, and is recommended by experts as a way to control the spread of disease. Droplets from those who do not cover their coughs or sneezes can travel up to six feet. Studies of influenza transmission and practical experience in controlling influenza outbreaks reinforce that respiratory hygiene is an important factor in infection control.

Success Factors: Success depends on public education effectiveness and public compliance.

Possible Drawbacks: None anticipated. There could be potential concerns about supply chain for tissues/alcohol-based hand sanitizer.

Possible Benefits: Quick and easy to implement; effective at reducing illness due to droplet transmission.

Settings and Use

- Personal non-pharmaceutical interventions (NPIs) such as covering a cough are everyday preventive actions that can help keep persons from getting and spreading respiratory illnesses transmitted by droplets.
- Use at homes, child care facilities, schools, workplaces, houses of worship, public transit, and other settings where people regularly gather.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers

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Applicable Law(s):

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- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Determine financial responsibility for providing tissues, handwashing stations, and/or hand sanitizer.
- Research/discuss resource procurement needs:
    - Local/state/national partners
    - Private/public partners
- Develop communication strategies and communication plan.
- Engage community partnerships to promote key messages.

Implementation Methods

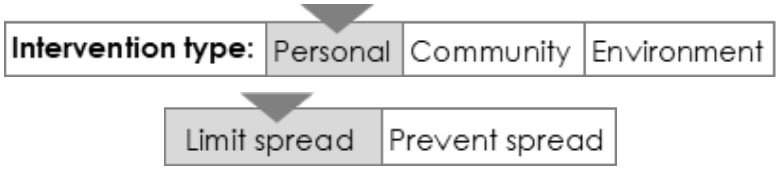
- **Create an inclusive public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.

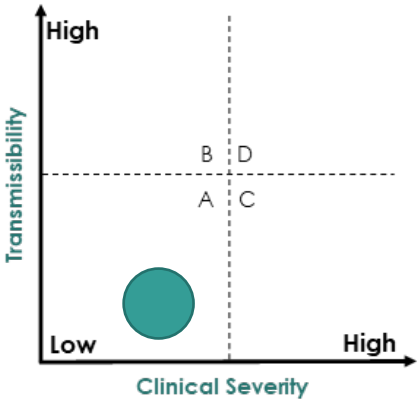
    - Communicate on multiple platforms appropriate to the affected communities
    - Connect with community leaders or representatives for advice and buy-in.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Provide consistent messaging throughout the state via media outreach.
- **Create and distribute accessible, public messaging**
    - Display culturally appropriate messaging in public places.
        - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
        - Flyers should be translated into locally appropriate languages.
- **Provide respiratory hygiene stations in accessible areas.**
    - Provide tissues and waste receptacle at every public hand sanitizer station in accessible areas.
    - Consider bus stations, transit centers, transportation hubs, health care facilities, schools, shopping centers, entertainment venues, etc.
        - Prioritize areas of known exposure or at increased risk of exposure.

Intervention 3: Keep distance from others (> 6 feet)

Reduce probability of direct and droplet transmission by reducing the number of interpersonal contacts.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Keeping distance from others is the most basic form of social distancing that reduce opportunities for person-to-person virus transmission and can help delay and slow the exponential growth of disease spread. It's a common-sense approach to limit disease spread by limiting contact and possible exposures. Droplets from those who do not cover their coughs or sneezes can travel up to six feet. Keeping distance from others if you are sick or from others who may be sick is limits possible spread.

Other more restrictive forms of social distancing are discussed in later interventions and include closure of buildings, isolation and quarantine. The optimal strategy may be to implement several social distancing measures simultaneously where groups of people gather.

Success Factors: Success depends on public education effectiveness and public compliance.

Possible Drawbacks: Certain cultural and religious groups may be unwilling or unable to comply due to conflict with cultural/religious norms or practices. Persons may feel anxious, worried, or fearsome due to being socially distant from others.

Possible Benefits: Quick and easy to implement; effective at reducing illness due to droplet transmission.

Settings and Use

- Personal NPIs such as keeping distance from others who may be sick are everyday preventive actions that can help keep persons from getting and spreading respiratory illnesses transmitted by droplets. Diseases are transmitted by direct contact, indirect contact, droplet, and/or airborne routes. Ill persons can spread illness everywhere they go and surfaces they touch.
- Use at homes, child care facilities, schools, workplaces, houses of worship, public transit, and other settings where people regularly gather.
- Examples that reduce in-person contact include: telecommuting instead of meeting in-person, staggering work hours, spacing workers further apart at the worksite, limiting non-essential travel, and avoiding close contact with people who are sick.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers

State

Key Decision Makers: The Secretary of Health also has the same authority as local health officers (LHO) to control and prevent the spread of disease (under RCW 43.70.130), and may exercise the authority in an emergency or when LHO(s) agree or fail or are unable to act, per RCW 43.70.130(7). This includes the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Implementation Methods

- **Create an inclusive public messaging campaign**
  - Work with communications team to create messages that:
    - Are culturally competent and at an appropriate reading level.
    - Are translated into the most spoken languages in the affected area.
    - Are relevant to the changing nature of the incident/outbreak.
  - Communicate on multiple platforms appropriate to the affected communities
  - Connect with community leaders or representatives for advice and buy-in.
  - Provide messages to LHJs and other partners to share with their constituents.
  - Provide consistent messaging throughout the state via media outreach.
- **Create and distribute accessible, public messaging**
  - Display culturally appropriate messaging in public places.
    - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
    - Connect with community leaders or representatives for advice.
    - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
    - Flyers should be translated into locally appropriate languages.

Decisional Objectives/Key Decision Points

- Communication strategies and communication plan
    - Outreach to major employers
    - Community and faith-based partners
    - Schools, child care facilities, and other settings where people regularly gather
- Social distancing on public transit
- Social distancing for ill persons or the public at large

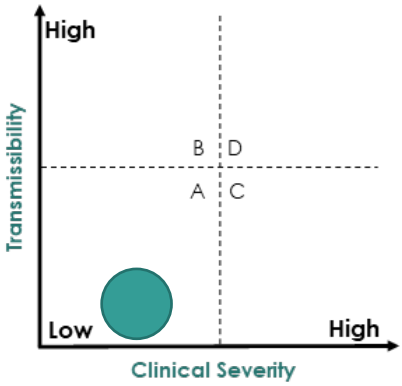
Intervention 4: Frequently Clean and Disinfect Personal Surfaces

Reduce probability of indirect transmission of the disease by disinfecting fomites, or objects that can carry infection. This includes doorknobs, phones, keyboards, etc.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D

Intervention type:	Personal	Community	Environment

Limit spread	Prevent spread



Rationale for Use as Public Health Strategy

Contact transmission (i.e., hand transfer of virus from contaminated objects to the eyes, nose, or mouth) is a recognized route of virus spread. The routine use of disinfection measures that eliminate viruses from contaminated surfaces might reduce the spread of viruses.

Success Factors: Success depends on public education effectiveness, public compliance, and access to appropriate disinfectants at home.

Possible Drawbacks: Lack of available cleaning supplies.

Possible Benefits: Environmental disinfection is effective at reducing illness due to indirect contacts (fomites).

Settings and Use

- Environmental NPIs include routine disinfection of surfaces that helps to eliminate viruses from frequently touched surfaces and objects, such as phones, toys, keyboards, desks, and doorknobs.
- Disinfect homes, child care facilities, schools, workplaces, houses of worship, other settings where people regularly gather, and all frequently touched surfaces with a disinfectant labeled to kill viruses and bacteria.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

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Applicable Law(s):

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- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Determine communication strategies and communication plan.
  - Outreach to major employers
  - Community and faith-based partners
- Research/discuss resource procurement needs, including fiscal responsibility:
  - Local/state/national partners
  - Private/public partners
- Engage business and community partnerships to implement and promote messages.

Implementation Methods

- **Create an inclusive public messaging campaign**
  - Work with communications team to create messages that:
    - Are culturally competent and at an appropriate reading level.
    - Are translated into the most spoken languages in the affected area.
    - Are relevant to the changing nature of the incident/outbreak.
  - Communicate on multiple platforms appropriate to the affected communities
  - Connect with community leaders or representatives for advice and buy-in.
  - Provide messages to LHJs and other partners to share with their constituents.
- **Create and distribute accessible, public messaging**
  - Display culturally appropriate messaging in public places.
    - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.

        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
- **Distribute disinfectant in accessible locations**
    - Deploy disinfectant stations in the following locations: Bus stations, transit centers, transportation hubs, health care facilities, schools, shopping centers, grocery stores, entertainment venues, and other areas where community members gather.
        - Prioritize areas of known exposure or increased risk of exposure.

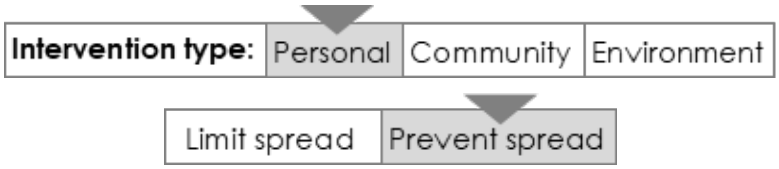
Decisional Objectives/Key Decision Points

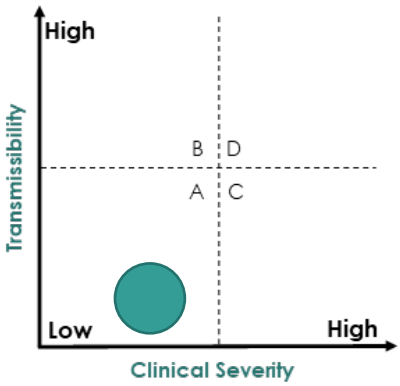
- Determine communication strategies and communication plan.
    - Outreach to major employers
    - Community and faith-based partners
- Research/discuss resource procurement needs, including fiscal responsibility:
    - Local/state/national partners
    - Private/public partners
- Engage business and community partnerships to implement and promote messages.

Intervention 5: Remain Home When Sick with Respiratory Illness

Reduce probability of transmission by preventing contacts between well and sick people.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Staying home while sick will prevent spreading illness to others in your community. You can also create social distance at home and prevent spreading the illness to others in your household by staying in a specific room and away from your household members as much as possible and using a separate bathroom (if available).

Success Factors: Success depends on the individual's willingness and ability to stay home from work/school/events including access to paid sick leave.

Possible Drawbacks: Many members of the public will be reluctant to stay home due to risk of lost wages and limited or no access to paid sick leave.

Possible Benefits: This is a form of voluntary isolation which is extremely effective in reducing the spread of illness if ill persons comply consistently.

Settings and Use

- Diseases are transmitted by direct contact, indirect contact, droplet, and/or airborne routes. Ill persons can spread illness everywhere they go and surfaces they touch.
- This NPI is used at home to stop spread of disease in public places. It can also be used by employers to request sick employees not come to work.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
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Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Communication strategies and communication plan.
    - Communicate with major employers.
    - Perform outreach to community and faith-based partners.
- Reference available guidance on duration of illness.
- Evaluate economic impact of ill persons without paid sick leave.

Implementation Methods

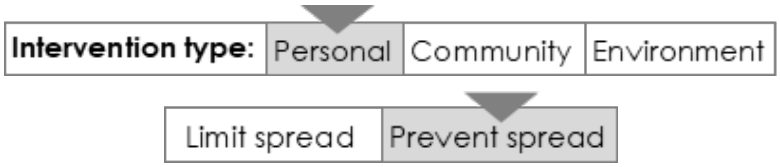
- **Create an inclusive public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.
    - Communicate on multiple platforms appropriate to the affected communities
    - Connect with community leaders or representatives for advice and buy-in.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Provide consistent messaging throughout the state via media outreach.
- **Create and distribute accessible, public messaging**
    - Display culturally appropriate messaging in public places.
        - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
    - Co-locate messaging or publications with sanitizer stations and tissues.
- **Work with employers**
    - Have employers review and communicate their sick leave policies, flexible leave policies, and alternate work schedules with employees to encourage sick employees to stay home and prevent the spread of illness at work.
    - Use current relationships with employers to ask employees to stay home if they are ill.

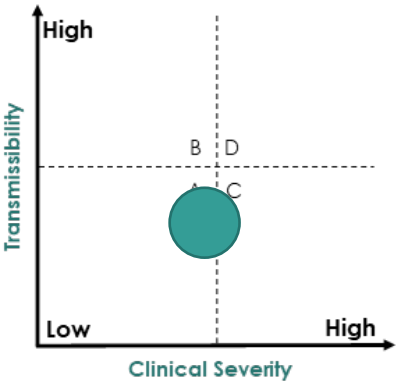
- Suggest allowing employees to work from home. If this is already an option, consider working with HR to be more flexible and inclusive.
- Consider an emergency/temporary change in sick leave policy; allowing an employee to use sick leave proactively and earn it back retroactively.
    - This can decrease the hesitancy on the employees' part to stay home and increase participation in voluntary quarantine.

Intervention 6: Voluntary Isolation of Sick Persons

Reduce probability of transmission by preventing contact between well and sick people.

Transmissibility (1-5)	2
Clinical severity (1-7)	2-5
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Personal non-pharmaceutical interventions are everyday preventive actions that can help keep persons from getting and spreading respiratory illnesses transmitted by droplets. Voluntary isolation is a form of social distancing and prevents a sick person from infecting other people outside of their isolation location. Historically, isolation measures can help prevent the spread of infectious diseases by stopping the person-to-person spread of virus via contaminated droplets generated by coughs and sneezes, and have been shown to delay the peak of an influenza pandemic.

Success Factors: Effective education and ability to comply with request. Material routine support and services (e.g. laundry, food) and working with the employer may help compliance.

Possible Drawbacks: Non-compliance with voluntary isolation increases risk of disease transmission; isolation is difficult to enforce.

Possible Benefits: Isolation is extremely effective in consistently reducing the spread of illness. Voluntary isolation is “less restrictive” and more acceptable to the public.

Settings and Use

- Voluntary isolation of a sick person involves remaining home, at a health care facility, or at another designated isolation facility.
- Isolation is used for persons infected with a contagious disease to separate them from people who are not sick.
- For isolation and quarantine measures, state law requires making reasonable efforts to obtain voluntary compliance unless doing so would create a risk of serious harm (WAC 246-100-040(1)(a)). It is good public health policy, and it's also legally required.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers:

Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Local health officers (and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7)) have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine

State

In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease and issue isolation and quarantine orders. The Secretary also has authority to investigate disease outbreaks and advise local health officers on measures to be taken in response.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)
- WAC 246-101-105 – Duties of the healthcare provider

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Decisional Objectives/Key Decision Points

- Create communication strategies and plan for:
  - Health care providers
  - Major employers
  - Community and faith-based partners
- Create guidance and/or education resources for patients and health care providers, including monitoring forms.
- Identify isolation facility for individual(s).
- Determine need for material support and services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing services.
- Movement plan for sick persons to a health care facility (if needed)
- Personal Protective Equipment (PPE) needed for persons providing support to sick persons in isolation.
- Determine type of monitoring:
  - Self-monitoring (what will be monitored, frequency, reporting)
  - Active monitoring (phone, video, or in-person; frequency; responsible staff)
  - Other type
- Plan the logistics for specimen collection and providing other medical services, if needed.
- Determine when to release from isolation and process for notification.

Implementation Methods

- **Health officer requests that a patient self-isolate**
  - Letter should be on official department letterhead, with a wet or electronic signature from the health officer. While a wet signature may be more impactful, it is not a legal requirement. It may be more efficient and avoid delay to use an e-signature under certain circumstances.
  - Letter should include additional information resources for providers, including phone numbers, websites, and other relevant resources.

- **Instruct health care providers to educate patients**
    - Work with communications teams to distribute a health alert to all providers in Washington.
        - Attach information or a publication to the alert that can be printed and displayed in waiting areas and treatment rooms.
        - Distribute a health alert to all relevant providers about the health officer's request.
- **Engage community organizations and faith-based organizations**
    - Work within already established relationships with community and faith-based partners.
        - If faith-based and community partners receive your health alerts, consider creating a separate alert for them with relevant information to the communities and individuals they serve.
        - Be willing to speak to their leadership/elders/members regarding the situation (within reason) and why we are making this ask.

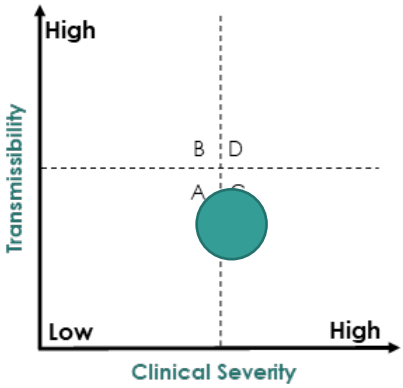
Intervention 7: Voluntary Quarantine of Contacts of Sick Persons

Reduce probability of transmission in the event that the contact becomes contagious before symptoms developed.

Transmissibility (1-5)	2
Clinical severity (1-7)	2-5
Recommend implementing at	A, B, C, D

Intervention type: Personal | Community | Environment

Limit spread | Prevent spread



Rationale for Use as Public Health Strategy

Quarantine refers to the separation and restriction of movement of persons who, while not yet ill, have been exposed to an infectious agent and therefore may become ill. Quarantine of exposed persons is a public health mitigation strategy intended to stop the spread of infectious disease. It is effective in protecting the public from disease.

Certain infected (but not yet symptomatic) individuals may spread illness and could unknowingly infect friends, neighbors, and others in the community before symptoms begin. Therefore, all contacts exposed to a sick person could be asked to voluntarily stay home for a specified period of time to assess for early signs of infection. If other household members of the contact become ill during this period, then the time for voluntary home quarantine may be extended for another incubation period. Quarantine at a designated facility (in lieu of home setting) also can be considered.

Success Factors: Effective contact tracing and individual ability to comply with request. Material support with material routine support and services (e.g. laundry, food) and working with the employer may help to encourage compliance.

Possible Drawbacks: Non-compliance increases risk of disease transmission.

Possible Benefits: Quarantine may allow quick identification of a suspect case and helps to prevent exposures early in the course of illness.

Settings and Use

- To avoid potential spread of the disease, consider use of voluntary quarantine for contacts who are exposed to a sick person but are not showing symptoms.
- Settings: At home or at a designated facility.
- For isolation and quarantine measures, state law requires making reasonable efforts to obtain voluntary compliance unless doing so would create a risk of serious harm (WAC 246-100-040(1)(a)). It is good public health policy, and it's also legally required.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Local health officers (and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7)) have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine
- WAC 246-101-105 – Duties of the healthcare provider

State

In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease and issue isolation and quarantine orders. The Secretary also has authority to investigate disease outbreaks and advise local health officers on measures to be taken in response.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)
- WAC 246-101-105 – Duties of the healthcare provider

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Decisional Objectives/Key Decision Points

- Definition of "close contact" (including length of exposure to ill person, travel history, etc.)
- Location(s) of quarantine facility (home, government facility, etc.)
- Length of quarantine
- Communication strategies and plan
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan for moving persons under quarantine to a health care facility if they develop symptoms
- Determine type of monitoring:
    - Self-monitoring (what will be monitored, frequency, reporting)
    - Active monitoring (phone, video, or in-person; frequency; responsible staff)
    - Other type
- Plan the logistics for specimen collection and providing other medical services, if needed.
- Determine when to release from quarantine and process for notification.

Implementation Methods

- **Health officer request for person to self-quarantine**
    - Letter should be on official department letterhead, with a wet or electronic signature from the health officer. While a wet signature may be more impactful, it is not a legal requirement. It may be more efficient and avoid delay to use an e-signature under certain circumstances.
    - The letter should include additional resources for providers, including phone numbers, websites, and other relevant resources.
- **Engage community-based and faith-based organizations to support**
    - Work within already established relationships with community-based and faith-based partners.
        - Consider creating and sending a custom health alert for them with relevant information to the communities and individuals they serve.
        - Be willing to speak to their leadership/elders/members regarding the situation (within reason) and why we are making this ask.
- **Work with employers**
    - Use current relationships with employers to support employees in voluntary quarantine due to exposure to sick contacts.

        - Suggest allowing employees to work from home. If this is already an option, consider working with human resources to be more flexible and inclusive.
        - Consider an emergency/temporary change in sick leave policy; allowing an employee to use sick leave proactively and earn it back retroactively.
            - This can decrease the hesitancy on the employees' part to stay home and increase participation in voluntary quarantine.
- **Create a public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.
    - Communicate on multiple platforms appropriate to the communities of affected persons.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Send a health alert to health care providers.

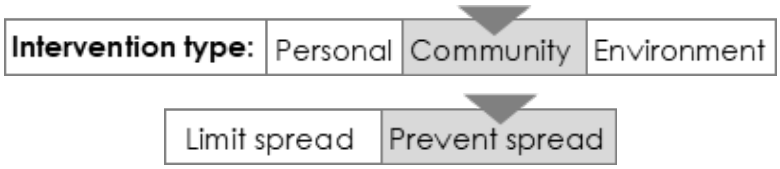
Special Considerations

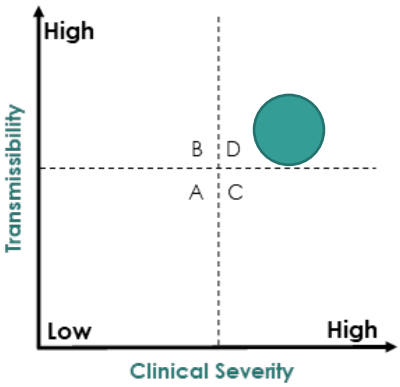
- Consider dedicating a phone line to answer questions that may follow the request for quarantine.
- Work with communications staff to translate materials as needed for community-based and faith-based organizations, community partners, and employers.
- Sovereign tribal nations may decide their own criteria for quarantine.
- Consider use of telemedicine options and home assessment teams for medical support and backup. The idea that medical health is available may help reduce anxiety.

Intervention 8: Involuntary Isolation of Sick Persons

Reduce probability of transmission by preventing contact between well and sick people.

Transmissibility (1-5)	3
Clinical severity (1-7)	5-6.5
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Isolation prevents a sick person from infecting others outside of their isolation location. Historically, isolation measures have helped to prevent the spread of infectious diseases, such as influenza, by stopping the person-to-person spread of virus via contaminated droplets from coughs and sneezes.

Success Factors: Success depends on health care facility and/or public health system ability to implement. Clearly communicate with affected communities about the rationale for use of isolation, and the responsibility for public officials to protect the safety and health of a community from communicable illnesses of high severity and high transmissibility.

Possible Drawbacks: Involuntary isolation is extremely restrictive and resource intensive. It limits personal liberties and can be controversial.

Possible Benefits: Isolation is effective in reducing the spread of illness. Use of involuntary isolation is a method to force compliance to the measure.

Settings and Use

- Isolation separates sick persons with a contagious disease from people who are not sick.
- Involuntary isolation is only recommended when an individual is not reliable or compliant with voluntary isolation for a disease that is highly severe and highly transmissible.
- For isolation and quarantine measures, state law requires making reasonable efforts to obtain voluntary compliance unless doing so would create a risk of serious harm (WAC 246-100-040(1)(a)). It is good public health policy, and it's also legally required.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: The local health officer and/or Secretary of Health may issue a detention order for involuntary isolation when they have reason to believe the person is infected with a communicable disease and poses a serious and imminent risk to the health and safety of others if not isolated. The local health officer must first make reasonable efforts to obtain voluntary

compliance, unless doing so would create a risk of serious harm. An order directly from a local health officer may last for up to 10 days. A court may order a longer period of isolation. Violation of an isolation order is a misdemeanor for which individuals may be arrested, fined, and imprisoned up to 90 days.

Local health officers, and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7), have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine
- WAC 246-100-070 – Enforcement of local health officer orders
- WAC 246-101-105 – Duties of the healthcare provider
- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- RCW 70.05.120(4) – Violations – Remedies - Penalties (misdemeanor for violation of an order)

Forms (find all instructions and forms on DOH's website):

- Emergency Involuntary Detention Order (Word)
  In addition to the form available at the link above, a COV-19 specific involuntary detention order is available. Please contact DOH for use.
- Confidential Schedule (Word)
  A local health officer may issue an isolation order immediately. Such an order is subject to court challenge. A court order is required to isolate an individual for longer than 10 days. Law enforcement may arrest an individual for violating a local health officer's or a court order. A court order is also enforceable through contempt proceedings.

  When no attempt is made to seek voluntary compliance due to the serious and imminent risk to the public, use the following forms:
- Summons (Word)
- Detention ex parte petition (Word)
- Confidential schedule (Word)
- Declaration supporting ex parte detention petition (Word)
- Order ex parte for involuntary detention (Word)

When voluntary compliance was sought, but the individual refused or otherwise indicated they would not comply, use the following forms:

- Summons (Word)
- Detention ex parte petition when voluntary detention refused (Word)
- Confidential schedule (Word)
- Declaration supporting ex parte detention petition when voluntary detention refused (Word)
- Order ex parte when voluntary detention refused (Word)

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. Tribal nations may decide their own criteria for isolation.

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Decisional Objectives/Key Decision Points

- Language for health officer order and involuntary detention court orders.
- Location(s) for isolation.
- Personal Protective Equipment (PPE) requirements for health care workers providing care for sick persons.
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan of moving sick persons under isolation to treatment facility, if isolated outside of a health care facility.
- Plans and logistics for specimen collection or providing other medical services, if needed.
- Communication strategies and plan to communicate decisions
    - Affected individuals and community members
    - Public, media, public officials
- Due process: understand and prepare for the rights of the affected patient if due process is initiated. Communicate steps for due process, such as administrative hearings, court review, or notification of right to object. Protect patient rights to privacy and restrictions on who can and cannot be notified (e.g., family member, employer)
- Plan to manage non-compliance with isolation. Identify progressively restrictive steps, up to court-ordered detention. Identify decision point for ordering person to a more restrictive location. Identify who will issue order and transport process.
- Determine when to release from isolation and process for notification.

Implementation Methods

- **Health officer order for emergency detention**
    - Once the person is ordered into isolation, the local health officer should seek a court order and must consider individual rights to due process. Seeking a court order quickly is a good idea if isolation sought is more than 10 days.
    - The needs of a person isolated or quarantined must be addressed to the greatest extent possible in a systematic and competent fashion, including, but not limited to, providing adequate food, clothing, shelter, means of communication with those in isolation or quarantine and outside these settings, medication, and competent medical care. Cultural and religious beliefs should be considered in addressing their needs.
- **Standing orders within a hospital**
    - Work with the hospital facility or designated health care provider and the health officer to create standing orders for the care of individuals in involuntary isolation.

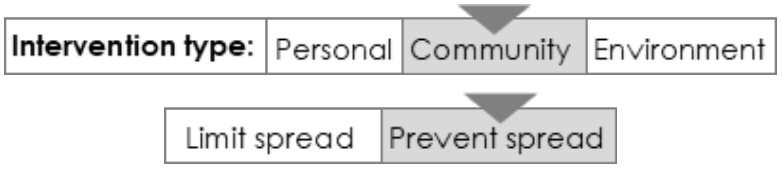
Special Considerations

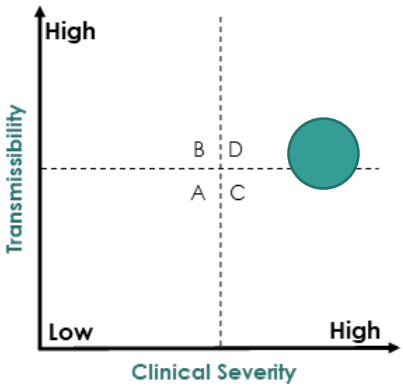
- Food, water, basic needs, and other support services for isolated patients.
- This intervention requires detailed coordination between state and local government officials.
- Court orders for involuntary isolation may be required.
- Tribal nations may decide their own criteria for isolation.
- When the individual is released, consider providing them with a letter that recognizes their release so they will not be mistakenly reported as not complying with the isolation order.

Intervention 9: Involuntary Quarantine of Contacts of Sick Persons

Reduce probability of transmission in the event that the contact becomes contagious before symptoms developed.

Transmissibility (1-5)	3
Clinical severity (1-7)	5-6.5
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Quarantine refers to the separation and restriction of movement of persons who, while not yet ill, have been exposed to an infectious agent and therefore may become infectious. Quarantine of exposed persons is a public health strategy intended to stop the spread of infectious disease. Quarantine is medically very effective in protecting the public from disease.

Certain infected but not yet symptomatic individuals may unknowingly infect friends, neighbors, and others in the community before becoming symptomatic.

In situations of highly transmissible and clinically severe infections where there are asymptomatic contacts who are not willing to quarantine, authorities may want to consider involuntary quarantine of contacts of sick persons to prevent possible disease spread, especially for novel pathogens of concern.

Success Factors: Success depends on health care facility and/or public health system ability to implement.

Possible Drawbacks: Involuntary quarantine is extremely restrictive and resource intensive.

Possible Benefits: Quarantine is extremely effective in reducing the spread of illness. Non-compliant persons can be prevented from spreading the disease.

Settings and Use

- Consider using involuntary quarantine for contacts who are not reliable or compliant and who were exposed to a sick person but are asymptomatic to avoid potential spread of disease.
- Involuntary quarantine at a designated facility is only recommended when an individual is not reliable or compliant.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: The local health officer and/or Secretary of Health may issue a detention order for involuntary quarantine when they have reason to believe the person is, or is suspected

to be, infected with or exposed to a communicable disease and poses a serious and imminent risk to the health and safety of others if not quarantined. The local health officer must first make reasonable efforts to obtain voluntary compliance, unless doing so would create a risk of serious harm. An order directly from a local health officer may last for up to 10 days. A court may order a longer period of quarantine. Violation of a quarantine order is a misdemeanor for which individuals may be arrested, fined, and imprisoned up to 90 days.

Local health officers, and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7), have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine
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- RCW 43.20.050 - Powers and Duties of the State Board of Health
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- RCW 70.05.070 – Local health officer – powers and duties
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Forms (find all instructions and forms on DOH's website):

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- Confidential Schedule (Word)
- A local health officer may issue an isolation order immediately. Such an order is subject to court challenge. A court order is required to isolate an individual for longer than 10 days. Law enforcement may arrest an individual for violating a local health officer's or a court order. A court order is also enforceable through contempt proceedings.

When no attempt is made to seek voluntary compliance due to the serious and imminent risk to the public, use the following forms:

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- Confidential schedule (Word)
- Declaration supporting ex parte detention petition (Word)

- Order ex parte for involuntary detention (Word)

When voluntary compliance was sought, but the individual refused or otherwise indicated that he or she would not comply, use the following forms:

- Summons (Word)
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- Declaration supporting ex parte detention petition when voluntary detention refused (Word)
- Order ex parte when voluntary detention refused (Word)

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

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- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Tribal

- Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. Tribal nations may decide their own criteria for isolation.

Decisional Objectives/Key Decision Points

- Language for health officer order and involuntary detention court orders.
- Definition of "close contact" (including length of exposure to ill person, travel history, etc.)
- Location(s) of quarantine facility (home, government facility, etc.)
- Length of quarantine
- Communication strategies and plan
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan to move persons under quarantine to a health care facility if they develop symptoms
- Plans and logistics for specimen collection or provision of other medical services, if needed.
- Active monitoring for persons under quarantine

Implementation Methods

- **Health officer order for emergency detention**
    - Once the person is ordered into quarantine, the local health officer should seek a court order and must consider individual rights to due process. Seeking a court order quickly is a good idea if isolation sought is more than 10 days.
    - The needs of a person isolated or quarantined must be addressed to the greatest extent possible in a systematic and competent fashion, including, but not limited to, providing adequate food, clothing, shelter, means of communication with those in isolation or

quarantine and outside these settings, medication, and competent medical care. Cultural and religious beliefs should be considered in addressing their needs.

- **Standing orders within a hospital**
    - Work with the hospital facility or designated health care provider and the health officer to create standing orders for the care of individuals in involuntary quarantine.

Special Considerations

- Food, water, basic needs, and other support services for quarantined individuals.
- This intervention will require detailed coordination between state and local government officials.
- Court orders for involuntary isolation may be required.
- Tribal nations may decide their own criteria for isolation.
- When the individual is released, consider providing them with a letter that recognizes their release so they will not be mistakenly reported as not complying with the quarantine order.

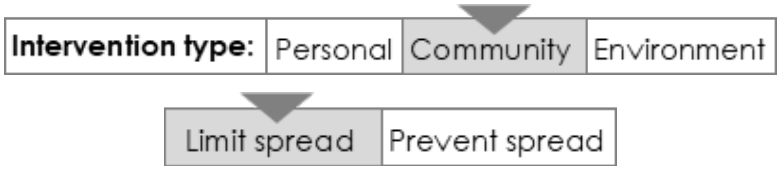
Decisional Objectives/Key Decision Points

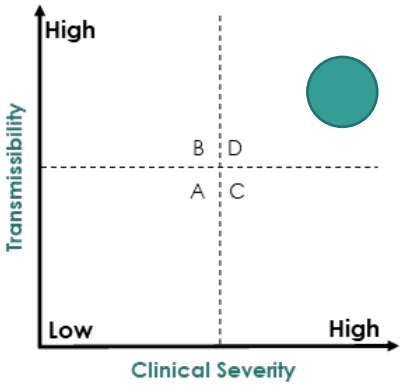
- Language for health officer order and involuntary detention court orders.
- Definition of “close contact” (including length of exposure to ill person, travel history, etc.)
- Location(s) of quarantine facility (home, government facility, etc.)
- Length of quarantine
- Communication strategies and plan
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan to move persons under quarantine to a health care facility if they develop symptoms
- Plans and logistics for specimen collection or provision of other medical services, if needed.
- Active monitoring for persons under quarantine

Intervention 10: Recommend or Order Cancellation of Major Public and Large Private Gatherings

Reduce probability of transmission by reducing the number of the interpersonal contacts.

Transmissibility (1-5)	4
Clinical severity (1-7)	5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Social distancing measures, such as cancellation or postponement of mass gatherings, reduce opportunities for person-to-person virus transmission and can help delay the spread and slow the exponential growth of disease spread. The optimal strategy is to implement these measures simultaneously in places where people gather.

Canceling mass gatherings, in combination with other social distancing measures (e.g., patient isolation, quarantine of exposed persons, and school closures), may help reduce virus transmission.

Success Factors: Success depends upon event sponsor compliance and authorities' ability to enforce effectively.

Possible Drawbacks: May result in revenue loss, public outrage, or political backlash, and may disproportionately affect certain cultural and community groups.

Possible Benefits: Reduces opportunities for widespread disease transmission by reducing interpersonal contacts and increasing social distance.

Settings and Use

- Social distancing measures can be implemented in a range of community settings, including public places where people gather (e.g., parks, houses of worship, theaters, sports arenas).
- Modifying, cancelling, or postponing events is an approach that might reduce face-to-face contact in community settings.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods. This includes issuing orders to cancel events.

Key Stakeholders: Decision should be made in coordination with local elected officials (such as mayor, city council, county council, and/or county executive), emergency managers, local law enforcement, impacted businesses, proprietors, cultural and religious leaders, event sponsors and event organizers.

Applicable Law(s) for Decision Makers:

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders

State

Key Decision Makers: In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease and issue orders to cancel events. The Secretary of Health also has the authority to promote public health activities and educational campaigns.

The Governor has broad authority to proclaim a state of emergency in order to preserve life, health, property, or the public peace (RCW 43.06.220). A governor declared emergency could trigger limitations such as curfews, prohibitions of people on streets and open areas, limit use of streets, highways or public ways; or other broad restrictions outlined by the law, such as prohibiting travel.

Washington's laws against discrimination are outlined in RCW 49.60. Public officials should consider how communities may be impacted and take action to remove stigma that may marginalize or discriminate against groups.

Applicable Law(s):

- RCW 43.06.220 – State of emergency – powers of governor pursuant to proclamation
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)
- RCW 49.60 – Discrimination – Human Rights Commission

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. They may decide their own criteria for canceling large gatherings.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders.

Applicable Law(s):

- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services

Decisional Objectives/Key Decision Points

- Establish guidance/requirements needed to request or order the cancellation of gatherings.
- Identify affected events and disproportionately impacted communities.
    - Research upcoming cultural and religious holidays, observances, and events.
    - Assess economic impact for both individuals and larger communities (loss of wages, tourism revenue)
- Plan community engagement efforts, methods, and approaches that are responsive to the needs, preferences, and values of the community.
- Develop strategies to gain buy-in from event organizers and leadership
- Plan for enforcement of cancellations
    - Partner with trusted community leaders
    - Assess need, benefit, and potential unintended consequences of working with law enforcement/security personnel.
    - Create mitigation strategies, as needed, to address any real, potential, or perceived issues or consequences of enforcement activities.
- Determine whether events should be pre-emptively canceled.
- Proactively address unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Healthcare Considerations

- Consider impact on the healthcare system and their current capacity and if the intervention would reduce or increase burden.
- Determine if implementation would mitigate burden on health care system to maintain essential medical services, especially for underserved populations.
- Identify if this would decrease or increase absenteeism among health care workers.
- Potential legal and ethical issues involving altered standards of care.

Implementation Methods

- **Health officer order or request that major government-sponsored events/gatherings be cancelled or postponed.**
    - Meet with event organizers, committees and employees.
        - Explain the situation
        - Offer alternatives, if any, including new location, rescheduling the event, or changing entrance rules.
    - Government-sponsored events or gatherings may be affected anyway due to the Continuity of Operations Plan.
    - Work with public information officers/communication teams to get the information out with relevant Q&As and FAQs
- **Create and distribute accessible, public messaging about closures**
    - General messaging about why these measures are being taken.

        - Work with communications team to create messages that:
            - Meet readability and accessibility guidelines.
            - Are culturally and linguistically relevant.
            - Are translated into the most spoken languages in the affected area.
            - Are relevant/adaptable to the changing nature of the incident/outbreak.
        - Communicate through multiple platforms and channels appropriate to the affected communities
        - Engage with community leaders or representatives for advice and buy-in.
        - Provide messages to LHJs and other partners to share with their constituents.
        - Provide consistent messaging throughout the state via media outreach.
        - Develop tailored messaging for disproportionately impacted communities.
    - Specific messaging about the cancellation of specific events.
        - Display appropriate messaging in places where attendees may see them.
        - Work with event organizers and to use their communication methods.

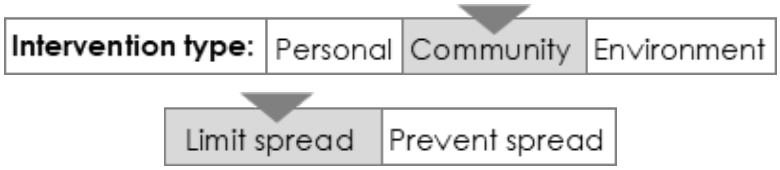
Special Considerations

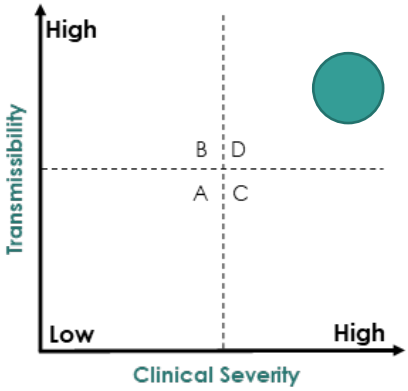
- Requires excellent and effective communication mechanisms to notify community of details and rationale. Communications must be culturally relevant and in a language and format that the audience can understand to be effective.
- Any attempts to implement social distancing in cultural & religious gatherings should be informed by cultural & religious leaders.
- Canceling events could affect civic participation and social cohesion. It could also create an opportunity for discrimination if only certain events are closed.
- Postponing the event may benefit or negatively impact employees as well as attendees or participants, depending on the event and the individual's role.
- This intervention will require detailed coordination between state, local government officials, and community organizations/leaders/groups.
- This intervention will require detailed coordination with the event organizers and planners.
- Cancellation of large events may affect individual income, revenue, employment, economic opportunity, and commerce.
- Coordination with the Office of the Governor and/or local government leadership may be needed.
- There should be consistency in which events are cancelled. Cancellation should not be based on the communities likely to attend or work at the event.
- Culturally and religiously diverse communities may be disproportionally impacted.
- Families on the brink of housing insecurity may be disproportionately impacted by loss of wages, potentially increasing risk of missing rent payments, potentially increasing risk of eviction and homelessness. Homeless individuals already experience barriers to health care, services, and information.
- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.

Intervention 11: Recommend or Order Closure of Public or Private Sites within impacted communities

Viruses quickly and easily spread in places where people gather in close contact, such as schools, child care facilities, workplaces, and public buildings. Dismissing or closing such facilities may be considered to limit disease spread by reducing the number of interpersonal contacts.

Transmissibility (1-5)	4
Clinical severity (1-7)	5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Social distancing measures, including closure of buildings, reduce opportunities for person-to-person virus transmission and can help delay the spread and slow the exponential growth of disease spread. If disease spread is occurring in a school, child care facility or public building, dismissing students, staff, or the public from these locations or closing the locations early can limit further spread. The optimal strategy may be to implement several social distancing steps simultaneously where large groups of people gather.

Success Factors: Early implementation of dismissals or closures to limit spread. Facility compliance and authorities' ability to enforce effectively.

Possible Drawbacks: May result in missed school days, revenue loss, public outrage, or political backlash. It may disproportionately affect certain cultural and community groups. Low income and other vulnerable communities may be put at risk for non-outbreak related harm if they are unsupervised, don't have access to an adult caretaker, or cannot communicate with the outside world if there is an emergency. It may cause disruption for families and communities. Adults may experience missed work and loss of income from their workplace closure or to stay home to care for children.

Possible Benefits: Reduces opportunities for widespread disease transmission by reducing interpersonal contacts and increasing social distance.

Settings and Use

Specific priority settings include schools, child cares, workplaces, meetings, and other places where people gather (e.g., parks, religious institutions, theaters, and sports arenas).

Early dismissal or closing facilities is a social distancing measure that may reduce face-to-face contact in community settings to reduce the spread of diseases transmitted by contact, droplets, or air. Choose social distancing measures depending on the severity of the disease.

School or child care: Examples of social distancing, closures and dismissals could include:

- Dismissing or cancelling classes and use web-based distance learning instead
- Pre-emptive, coordinated school closures or dismissals at child care facilities, K–12 schools, and institutions of higher education.
- Canceling school concerts, after-school programs, or sporting events.

Workplaces and public buildings: Many work settings involve shared work space, equipment, and face-to-face contact. Public buildings can bring many people into close contact. Examples of social distancing for these settings include telecommuting and remote-meeting options in workplaces.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

When there is a potential for an outbreak within a school or childcare center, local health officers have the authority to order school superintendents and childcare center administrators to close their facilities, cancel events, and/or exclude students, staff, and volunteers.

Key Stakeholders: Decision should be made in coordination with school superintendents, boards of education, local elected officials (such as mayor, city council, county council, and/or county executive), child care administrators, private sector, emergency managers, local law enforcement, impacted businesses, proprietors, event sponsors and event organizers.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders
- WAC 246-110-020 – Control of contagious disease (schools and childcare centers)

State

Key Decision Makers: In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease. The Secretary of Health also has the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department of Health created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)

- RCW 49.60 – Discrimination – Human Rights Commission

Tribal

- Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. They may decide their own criteria for canceling school, child care, and tribal facilities.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders.

Applicable Law(s):

- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services

Decisional Objectives/Key Decision Points

- Scale of closures (e.g. specific schools, districts, ages, geographic regions)
- Identify affected facilities
- Determine whether closure is limited to certain at-risk groups or applies to the general public.
- Length of closure
- Determine building cleaning protocols, if needed.
- Personal Protective Equipment (PPE), if any, for persons cleaning closed facilities
- Communication strategies and plan
- How to get employer engagement and buy-in

Healthcare Considerations

- Consider impact on the healthcare system and their current capacity and if the intervention would reduce or increase burden.
- Determine if implementation would mitigate burden on health care system to maintain essential medical services, especially for underserved populations.
- Increase in absenteeism among health care workers if schools and childcare are closed.
- Potential legal and ethical issues involving altered standards of care.

Implementation Methods

- **Local health officials and local school administrators work closely together in decision making to implement closures and dismissals**.
    - Include communication to parents and the public in case of school or child care closure.
    - Include communication to employees in case of a workplace closure.
- **Communicate to the media, partners, and the public about any facility or building closure.**
    - Create culturally relevant publications in all needed languages.
    - Work through the building or organization's communication channels.
    - Communicate on multiple platforms appropriate to the affected communities

- Provide consistent messaging throughout the state via media outreach.

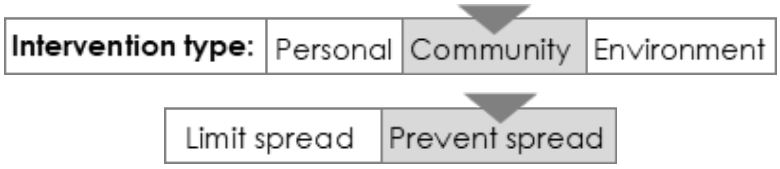
Special Considerations

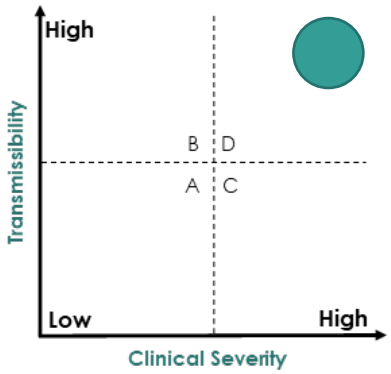
- Local health policies and risk communication strategies should take into account community attitudes and acceptance of preventive behaviors related to social distancing, which might differ across racial/ethnic, cultural, and economic groups.
- Strategies can be used in settings like schools (e.g., closure), workplaces (e.g., phone conferences instead of in-person meetings), and mass gatherings (e.g., postponement or cancellation) to reduce spread and infections. Multiple social distancing measures can be implemented simultaneously.
- Regarding school and child care closures, public officials should make decisions that balance local benefits and potential harms and consider timing, flexibility, and modifications to intervention based on the severity of local conditions.
- Requires advanced planning and preparation, as well as political leadership; collaboration between public health and emergency management agencies; coordination with schools, child care, businesses, nongovernmental organizations, and community- and faith-based organizations; and clear communication with the public.
- Cancelling school, child care facilities, workplaces, and public buildings would reduce income for staff working in those locations. Additionally, this could impact the income of working parents left without childcare and school and impact the ability for students to learn.
- Consider options for students who receive free or reduced-price student lunches to continue receiving meals during missed school days. Families experiencing housing insecurity or homelessness may need additional and proactive planning to ensure children are able to access alternative meals during closures.
- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Intervention 12: Prevent Non-Emergency Travel Outside the Home

Limiting travel outside of the home will reduce probability of the transmission by reducing the numbers of the interpersonal contacts. Travel should be restricted to emergency use only.

Transmissibility (1-5)	5
Clinical severity (1-7)	5.5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

This intervention is a more extreme measure of social distancing, which reduces occasions for person-to-person virus transmission to help delay the spread and slow the exponential growth of a pandemic.

Success Factors: Success depends upon compliance and authorities' ability to enforce effectively.

Possible Drawbacks: Will prevent the operation of public entities and private businesses; the effect will be felt economically by employees as loss of income, and the public as lack of commodity availability. Revenue loss; public outrage; and political backlash are possible. Travel restrictions may disproportionately affect certain cultural and community groups.

Possible Benefits: Reduces opportunities for direct or indirect disease spread, and may prevent a disease from entering new geographical region.

Settings and Use

- Travel restrictions are conditionally recommended during an early stage of a localized and extraordinarily severe pandemic for a limited period of time. Before implementing, consider cost, acceptability and feasibility, as well as ethical and legal considerations, in relation to this measure.
- This intervention should be considered when less-restrictive interventions have failed or to prevent disease introduction into new geographical areas.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: Local governments have police power to protect the public health under the U.S. Constitution's 10th Amendment, granting authority to implement restrictions on private rights for the sake of public welfare, order, and security. It also includes reasonable regulations to protect public health and safety. Under the 10th Amendment, police powers resides with state and local authorities unless specifically delegated to federal government. Local governments

may need to collaborate with state and federal partners as the complexity of the emergency increases. Local governments may request support from the state.

The Governor has broad authority to proclaim a state of emergency in order to preserve life, health, property, or the public peace (RCW 43.06.220). A governor declared emergency could trigger limitations such as curfews, prohibitions of people on streets and open areas, limit use of streets, highways or public ways; or other broad restrictions outlined by the law, such as prohibiting travel.

Washington's laws against discrimination are outlined in RCW 49.60. Public officials should consider how communities may be impacted and take action to remove stigma that may marginalize or discriminate against groups.

Key Stakeholders: Decision should be made in coordination with local elected officials (such as mayor, city council, county council, and/or county executive), private sector, emergency managers, local law enforcement, school superintendents, boards of education, health care, and transportation agencies.

Applicable Law(s):

- RCW 43.06.220 – State of emergency – powers of governor pursuant to proclamation
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- RCW 49.60 – Discrimination – Human Rights Commission
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders.

Applicable Law(s):

- 42 U.S.C. § 201 *et seq.* – Public Health Service Act
- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services
- Public Law No. 116-22 – 2019 Pandemic and All-Hazards Preparedness and Advancing Innovation Act (PAHPAIA)
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act

Decisional Objectives/Key Decision Points

- Define "essential travel"
- Define geographic location for ban on non-essential travel and length of ban.
- Communication strategies and communication plan
- Enforcement plan in coordination with law enforcement
    - Personal Protective Equipment (PPE) needed for enforcement officials
- Movement plan for individuals with essential travel needs
- Consider support of elected officials in issuing the order
- Consider how individual or community will access emergency services, if needed, during the restriction period
- Determine need for material support and services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing services.
- Plans and logistics for specimen collection or providing other medical services, if needed.

Healthcare Considerations

- Consider impact on the healthcare system and their current capacity and if the intervention would reduce or increase burden.
- Determine if implementation would mitigate burden on health care system to maintain essential medical services, especially for underserved populations.
- Increase in absenteeism among health care workers if schools and childcare are closed.
- Potential legal and ethical issues involving altered standards of care.

Implementation Methods

- Health officer order to the public to cease all non-essential travel.
- Work with law enforcement agencies to enforce.
    - Enforcement must be feasible and within the capabilities of the agency.
- Distribute messaging to help the public understand the reason for the measure and what to do.
    - Ensure messaging is culturally and linguistically appropriate for any groups disproportionately affected by the travel restriction. Ensure messaging is accessible for individuals with disabilities and available in alternative formats.

Special Considerations

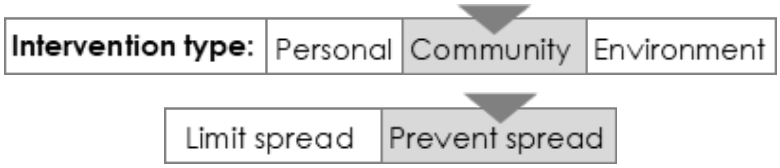
- Consider obtaining support of elected officials in issuing such a restrictive order.
- This intervention will require detailed coordination between state and local government officials.
- Law enforcement will be necessary to enforce the travel ban.
- Schools, transit services, and places of work will be affected.
- Sovereign tribal nations may decide their own criteria for non-emergency travel.
- Consider possible impacts to the health care system, such as an increase in people seeking care.
- Plan in advance any services needed to support the community during the restriction period.

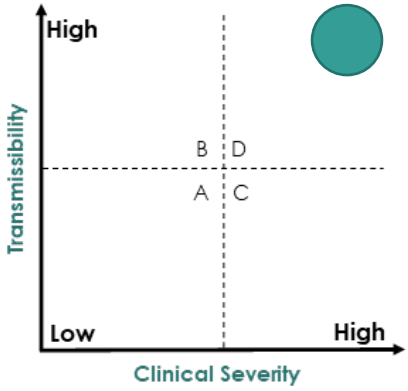
- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Intervention 13: Establish a Cordon Sanitaire

Contains a communicable disease within specific geographical boundaries. Legally enforceable order that restricts movement into or out of an area of quarantine to reduce spread in and to persons outside affected area.

Transmissibility (1-5)	5
Clinical severity (1-7)	5.5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

A cordon sanitaire is the restriction of movement of people in or out of the defined geographic area in order to contain disease within specific geographical boundaries. It is created around an area experiencing an outbreak or disease to prevent spread. This is a form of isolation and quarantine when applied to all inhabitants of an area as a sanitary barrier.

Success Factors: Success depends upon compliance and authorities' ability to enforce effectively. It also depends on engaging affected people to communicate the reason for the measure and gain their support for complying.

Possible Drawbacks: Controversial because it infringes on personal freedom of movement. May lead to feeling isolated or result in the isolation of an entire community. People could be stranded without support. Commerce will be heavily compromised. Revenue loss, public outrage, and political backlash are possible. It may disproportionately affect certain cultural and community groups, low-income families, rural and under-resourced communities, and individuals with un-related acute, chronic, or severe medical needs. May be difficult to solicit cooperation.

Possible Benefits: May contain a disease within the boundaries of the cordon. Reduces need for urgent evaluation of large numbers of potential contacts to determine indications for activity restrictions. May reduce transmission among groups without explicit activity restrictions.

Settings and Use

This strategy can be used when extensive transmission is occurring, a significant number of cases lack identifiable epidemiologic links at the time of evaluation, and/or restrictions placed on persons known to have been exposed are insufficient to prevent further spread.

Consider this intervention with highly transmissible and clinically severe disease that has requires geographic containment. This could apply to diseases that are easily transmitted

human-to-human via contact, droplet, and/or airborne routes when less-restrictive interventions have failed, or to prevent introduction into new geographical areas.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: Local governments have police power to protect the public health under the US Constitution's 10th Amendment, granting authority to implement restrictions on private rights for the sake of public welfare, order, and security. It also includes reasonable regulations to protect public health and safety. Under the 10th Amendment, police powers resides with state and local authorities unless specifically delegated to federal government. Local governments may need to collaborate with state and federal partners as the complexity of the emergency increases. Local governments may request support from the state.

The Governor has broad authority to proclaim a state of emergency in order to preserve life, health, property, or the public peace (RCW 43.06.220). A governor declared emergency could trigger limitations such as curfews, prohibitions of people on streets and open areas, limit use of streets, highways or public ways; or other broad restrictions outlined by the law, such as prohibiting travel.

Washington's laws against discrimination are outlined in RCW 49.60. Public officials should consider how communities may be impacted and take action to remove stigma that may marginalize or discriminate against groups.

Applicable Law(s):

- RCW 43.06.220 – State of emergency – powers of governor pursuant to proclamation
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- RCW 49.60 – Discrimination – Human Rights Commission
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders. HHS Secretary may declare a public health emergency under 42 USC sec. 247, which is a way to get Congress to fund a public health emergencies account, but declarations are often made receiving without associated Congressional funding.

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 201 *et seq.* – Public Health Service Act
- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law No. 116-22 – 2019 Pandemic and All-Hazards Preparedness and Advancing Innovation Act (PAHPAIA)
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act

Decisional Objectives/Key Decision Points

- Geographic location and timeframe of cordon sanitaire.
- Communication strategies and communication plan, including:
    - How affected community will receive updates
    - Whether to set up a call center
- Work with law enforcement to determine an enforcement strategy, including non-compliance.
    - Personal Protective Equipment (PPE) for officials enforcing the cordon sanitaire
- Movement of individuals and essential personnel into and out of the cordoned area for health and safety reasons
- Movement of materials (e.g. food, medical supplies/services, waste management) into and out of the cordoned area and providing essential services (e.g. utilities and water), and who will authorize providing services.
- Plan for health and emergency services in the cordoned area, such as mental health support, telehealth, and emergency medical transport
- Plans and logistics for specimen collection or providing other medical services, if needed.
- Identify communities that will be disproportionately impacted or burdened.
- Plan community engagement efforts, methods, and approaches that are responsive to the needs, preferences, and values of the community.
- Proactively address unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Implementation Methods

- **Health officer orders a cordon for a specific geographic area.**
    - Work with local health officer to determine best geographic area; work with the Washington State Department of Transportation and other transportation partners to transport cases and/or contacts to or from a geographic area.
- **Work with law enforcement agencies to enforce the cordon.**

    - Determine law enforcement needs and whether the agencies need additional officers.
- **Create and distribute accessible, public messaging,**
    - General messaging about why these measures are being taken.
        - Work with communications team to create messages that:
            - Meet readability and accessibility guidelines.
            - Are culturally and linguistically relevant.
            - Are translated into the most spoken languages in the affected area.
            - Are relevant/adaptable to the changing nature of the incident/outbreak.
        - Communicate through multiple platforms and channels appropriate to the affected communities
        - Engage with community leaders or representatives for advice and buy-in.
        - Provide messages to LHJs and other partners to share with their constituents.
        - Provide consistent messaging throughout the state via media outreach.
        - Develop tailored messaging for disproportionately impacted communities.

Special Considerations

- Requires excellent communication mechanisms to notify community of details and rationale.
- Low-income families, immigrant/refugee communities, communities of color, and individuals with criminal records may be disproportionally impacted by enforcement activities.
- Requires plans/protocols for providing essential services. Plan movement of materials (e.g., food, medical supplies/services, and waste management) into and out of the cordoned area and essential services (e.g., utilities and water) to avoid additional public health issues.
- Requires detailed coordination between state, local government officials, and community organizations/leaders/groups.
- Requires law enforcement to enforce travel restrictions and maintain security at borders, but their involvement may create stress, trauma/re-traumatization, and fear for certain communities.
- Heavily affects individual income, revenue, employment, economic opportunity, and commerce.
- Limits transportation for persons requiring medical evaluation, with appropriate infection control precautions. Consider use of telehealth resources to support this need, but that telehealth may not be an accessible resource for all individuals and communities in need.
- May disproportionately impact individuals with other, non-related chronic, severe, and acute medical conditions that require ongoing/follow-up treatment or management.
- Requires plan to divert flow of critical infrastructure supplies and materials that normally move through the cordoned area.
- Requires plan to provide mental health support.
- Risk of noncompliance, particularly as length of time increases. May require enforcement for noncompliance.
- When an entire community is involved, requires cooperation with neighboring jurisdictions that may not be using a similar intervention, particularly in situations where persons live in one city and work in another and only one locale is affected by the intervention.
- Coordination with the Office of the Governor and/or local government leadership may be needed.
- Tribal nations may decide their own criteria for cordoning and any relevant security concerns.
- Families on the brink of housing insecurity may be disproportionately impacted by loss of wages, potentially increasing risk of missing rent payments, potentially increasing risk of eviction and

homelessness. Homeless individuals already experience barriers to health care, services, and information.

- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

From: Apa, James
To: Karasz, Hilary; Hayes, Patty
Subject: Fw: Op-ed on nursing
Date: Thursday, February 27, 2020 8:52:20 AM
Attachments: NeedForNurses_V4.docx

Patty, I'm looping in Hilary for awareness, as she's taking point on COVID media for the next few days. Your thoughts on signing on or not?

Hilary, if Patty does want to go forward, we should check in with Alex. EO wants to know if we are submitting op-eds, in case of potential conflicts with other things they are submitting.

From: Jake Ellison <jbe3@uw.edu>
Sent: Wednesday, February 26, 2020 2:25 PM
To: Hayes, Patty <Patty.Hayes@kingcounty.gov>; Apa, James <James.Apa@kingcounty.gov>
Cc: Azita Emami <emamia@uw.edu>; bweiss@aol.com <bweiss@aol.com>
Subject: Op-ed on nursing

Hi Patty,

Here is the op-ed with a new lead. Let us know if this works for you. Thank you for taking the time. We know Friday is a big day for regional public health, but we see this op-ed as more than a NW issue or even just Covid-19. So, we're still wondering if you would like to sign on but if it isn't a good fit for you, we understand and look forward to working with you on other projects going forward.

Best,

Jake Ellison
Health Sciences Public Information Officer
UW News, University of Washington
Cell - 206-713-6420
Desk – 206-543-1969

The COVID-19 epidemic is teaching US a critical healthcare lesson: Nurses matter

The current novel coronavirus epidemic as well as SARS, MERS and Ebola are modern healthcare wakeup calls – To make sure the United States has enough nurses to provide the care needed during a major outbreak to protect you and your community, we will need more well-educated nurses.

Watch the images you see daily coming from China. Most of the anonymous and deeply dedicated people you see in hazmat suits are nurses, just as most of the people who cared for those with Ebola virus when it became a worldwide threat were nurses.

Through the UW School of Nursing's relationships in China as well as other countries, we have heard many reports of exhausted nurses working around the clock to help save lives, doing what nurses everywhere do—giving their patients' needs the highest priority. Many have told us that their institutions and governments now have a much clearer view of what nurses do, and a much greater willingness to support programs that improve the quality of nursing care and the ability to educate more nurses.

In short, nurses are the frontline defenders in every major healthcare crisis. Unless we in the U.S. take action now and make substantial investments in educating more nurses and empowering them to provide a full spectrum of care, patients and communities will suffer in the future.

And yes, the time for investment is *now*.

Nurses require many years of rigorous training, whether they are destined to do research, provide clinical care, or engage in policy making. An increasingly large percentage will pursue a PhD or Doctor of Nursing Practice (DNP) degree, lengthening their educational path by several years.

We're at a tipping point.

An estimated one million Baby Boomer-era nurses will retire in the next decade; so will a substantial number of the faculty members who educate nurses.

The Bureau of Labor Statistics estimates there will be a need for an additional 203,700 RNs *each year* through 2026 to fill newly created positions and replace retiring nurses. But U.S. nursing programs, already running at capacity and turning prospective students away, produce 20% fewer nurses than that.

Already, many nursing programs cannot hire enough faculty members to fill even existing positions. More than 50,000 qualified, capable, committed students were once again *denied* admission to nursing school this academic year. Not for lack of educational attainment, but for lack of nursing school capacity.

Over the past few decades, the role of nurses has changed dramatically.

Today, nurses have many roles in the healthcare ecosystem. Besides bedside nursing in hospitals, they also provide capable, accessible primary care in community-based clinics and as independent practitioners, often serving rural areas where no other medical care is available.

They also perform a wide variety of research, including in biology of biological threats such as the coronavirus. Nurses study population health, foster preventive care, and lead international organizations dedicated to improving global health and responding to pandemic threats.

New technology, new pedagogical methods, new means of communication all offer opportunities for us as a country to invest in educational infrastructure. It is an investment that will be returned to us as nurses who will be there when the next epidemic strikes, or whose research may well *prevent* the next epidemic.

Perhaps most important, nurse-educators pass their knowledge to the next generation of nurse leaders. But only if there is strong public support for educating enough nurses, nurse practitioners, nurse-educators, and nurse-researchers *now* will they be there when and where we need them.

Two international campaigns are currently in progress. *Nursing Now*, a collaboration of the International Council of Nurses and the World Health Organization, and a declaration by the WHO that 2020 is the *Year of the Nurse and Midwife*. The goal of both initiatives is to raise awareness about the nursing profession and the impact nurses have on global healthcare.

Your support for science and nursing education *will* make a difference—and it might well be a life-and-death difference for millions of people, including your family and those you know and care about.

From:	Levy, Susan (Susie)
To:	Burkland, Anne; Hayes, Patty
Subject:	Fwd: BoH Update on coronavirus (COVID-19)
Date:	Saturday, February 29, 2020 4:54:25 PM
Attachments:	image001.png image002.png COVID 19 basic talking points 2-29-20.docx image003.png image004.png

FYI.

Get Outlook for iOS

From: McDermott, Joe <Joe.McDermott@kingcounty.gov>
Sent: Saturday, February 29, 2020 2:51 PM
To: Kohl-Welles, Jeanne; Lambert, Kathy; Dembowski, Rod; lorena.gonzalez@seattle.gov; Tammy Morales (Tammy.Morales@seattle.gov); Bill Daniell; Butch de Castro (butchdec@uw.edu); Teresa.Mosqueda@seattle.gov; Andrew.Lewis@seattle.gov; susan.honda@cityoffederalway.com; krystalm@burienwa.gov; chris.delecki@seattlechildrens.org; jzahn@bellevuewa.gov; dbaker@kenmorewa.gov
Cc: Levy, Susan (Susie); Nguyen, Lan
Subject: BoH Update on coronavirus (COVID-19)

Board of Health Colleagues,

As the number of presumptive positive cases of novel coronavirus in King County increase and we have had the first death of someone presumptive positive for the virus, I wanted to share with you the information I have received today.

Attached and below are media advisories and talking points with current information – which is evolving rapidly. I will work to keep us all informed on the most current information ongoing.

Not included in the attached/below is advice for someone who believes they may have symptoms of the virus. While this is also evolving, current action would be that people should first call their primary doctor/clinic. If the doctor feels they have reason to be concerned, the doctor will contact Public Health. PH then works with DOH to get the test done.

As you can imagine, Public Health Seattle King County is stretched in their immediate response. I would ask that you direct questions and inquiries through me and I will coordinate a response and getting the information out to the entire Board of Health.

Thank you for your commitment to public health. My cell is 206 755 8893.

-Joe

Joe McDermott
King County Councilmember, District 8

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February 29, 2020

Contacts: Public Health – Seattle & King County Media Line: 206-477-9000
Email: PHPIO@kingcounty.gov
Washington State Department of Health: 253-512-7100
Email: doh-pio@doh.wa.gov
Contact: James Apa, 206-263-8698

First death due to novel coronavirus (COVID-19) in a resident of King County
There are also confirmed cases of COVID-19 from a long-term care facility in King County

Summary

Public Health – Seattle & King County and the Washington State Department of Health are announcing new cases of COVID-19, including one death. The individual who died was a man in his 50s with underlying health conditions who had no history of travel or contact with a known COVID-19 case. Public Health is also reporting two cases of COVID-19 virus connected to a long-term care facility in King County.

Story

Public Health – Seattle & King County, Washington State Department of Health and the Centers for Disease Control and Prevention (CDC) are reporting today four presumptive positive cases of novel coronavirus (COVID-19), including one person who died.

- Two of the confirmed cases are associated with LifeCare nursing facility in Kirkland, King County, Washington:

- One is a health care worker from LifeCare. She is a woman in her 40s, is currently in satisfactory condition at Overlake Hospital, and she has no known travel outside the United States.

- The second case, a woman in her 70's, is a resident at LifeCare and is in serious condition at EvergreenHealth Hospital.

- In addition, over 50 individuals associated with LifeCare are reportedly ill with respiratory symptoms or hospitalized with pneumonia or other respiratory conditions of unknown cause and are being tested for COVID-19. Additional positive cases are expected.
- The death occurred in a patient at EvergreenHealth Hospital but was not a resident of the long-term care facility.

Public Health – Seattle & King County is current working with LifeCare to provide care for ill patients while protecting uninfected patients. The CDC is sending a team of epidemiologists to King County to support our efforts to identify, isolate and test all of those who may be at risk because of these new cases.

Public Health is at the very beginning stages of this investigation and new details and information will emerge over the next days and weeks.

"This is a tragic loss of life and we share our heartfelt condolences with the family," said Dr. Jeff Duchin, Health Officer for Public Health – Seattle & King County. "While the vast majority of cases of COVID-19 are believed to be mild, the virus can be a very serious infection that can lead to death. Protecting the health of our community and supporting the care of health care workers is our top priority."

"I know this news is alarming, but we are doing everything possible to make sure the public is safe. Earlier today I declared an emergency proclamation directing state agencies to use all resources necessary to prepare for and respond to the outbreak. The best thing people can do to help is remain informed and take routine health precautions," Gov. Jay Inslee said. "Our public health officials at the state, local and national levels are working diligently on this, coordinating efforts and keeping the public safe and informed."
"We are fortunate to have one of the best public health agencies in the nation, and we are pulling all available resources into the fight against COVID-19. King County is reviewing all government operations, and we are standing up an Emergency Operations Center to respond appropriately across all agencies and public services. I urge businesses and families to plan and take precautions, referring to Public Health for best practices." King County Executive Dow Constantine

For more information about COVID-19 in King County visit: www.kingcounty.gov/coronavirus

Providing effective and innovative health and disease prevention services for more than two million residents and visitors of King County, Public Health — Seattle & King County works for safer and healthier communities for everyone, every day. More at www.kingcounty.gov/health

Keep up with the latest Public Health news in King County by subscribing to the department's blog, Public Health Insider.

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From: Gill, Karan <Karan.Gill@kingcounty.gov>
Sent: Saturday, February 29, 2020 11:16 AM
To: Dembowski, Rod <Rod.Dembowski@kingcounty.gov>; Upthegrove, Dave <Dave.Upthegrove@kingcounty.gov>; Dunn, Reagan <Reagan.Dunn@kingcounty.gov>; Lambert, Kathy <Kathy.Lambert@kingcounty.gov>; von Reichbauer, Pete <Pete.vonReichbauer@kingcounty.gov>; Balducci, Claudia <Claudia.Balducci@kingcounty.gov>; McDermott, Joe <Joe.McDermott@kingcounty.gov>; Zahilay, Girmay <Girmay.Zahilay@kingcounty.gov>; Kohl-Welles, Jeanne <Jeanne.Kohl-Welles@kingcounty.gov>
Cc: Camenzind, Krista <Krista.Camenzind@kingcounty.gov>; Logsdon, Kristina <Kristina.Logsdon@kingcounty.gov>; Phibbs, Diana <Diana.Phibbs@kingcounty.gov>; Nguyen, Lan <Lan.Nguyen@kingcounty.gov>; Lewis, Rhonda <Rhonda.Lewis@kingcounty.gov>; Pichette, Tyler <Tyler.Pichette@kingcounty.gov>; Cooper, Adam <Adam.Cooper@kingcounty.gov>; Eccles, Cody <Cody.Eccles@kingcounty.gov>; Brown, Dylan <Dylan.Brown@kingcounty.gov>; Muhm, Jeff <Jeff.Muhm@kingcounty.gov>; Busch, Carolyn <Carolyn.Busch@kingcounty.gov>
Subject: Fwd: Media Advisory: Update on coronavirus new cases including one death

Hello Councilmembers --

I am forwarding the latest release from Public Health regarding an update on the coronavirus. Also, attaching talking points. There will be a Public Health press conference at 1pm.

This is a rapidly evolving situation - Shannon and I will continue to keep you updated as we are able. We are also doing outreach with cities.

Since Public Health is completley inundated right now, it would be incredibly helpful to please send any questions you have to Shannon and I so we can get answers back to you as soon as possible.

Thanks,

Karan

Subject: Media Advisory: Update on coronavirus new cases including one death

Washington State Department of Health
Public Health
Seattle & King County

February 29, 2020

Contacts:

Public Health – Seattle & King County Media Line: 206-477-9000

Email: PHPIO@kingcounty.gov

Washington State Department of Health: 253-512-7100

Email: doh-pio@doh.wa.gov

MEDIA ADVISORY

Health officials update on novel coronavirus (COVID-19)in King County, including new cases and one death

Health officials will be providing the latest updates regarding novel coronavirus cases in King County, including new people identified with the infection, one of whom died.

- Dr. Jeff Duchin, Health Officer, Public Health – Seattle & King County
- Dr. Frank Riedo, Medical Director of Infection Control, EvergreenHealth Hospital
- Dr. Kathy Lofy, State Health Officer, Washington State Department of Health
- Patty Hayes, Director, Public Health- Seattle & King County

Time: 1:00 pm PST, Saturday, February 29, 2020

Location: Public Health – Seattle & King County

401 5th Ave, Seattle WA 98104

You can dial in using your phone

206 263-8114 Conference ID 3426240

Press briefing will also be live on Public Health- Seattle & King County's Facebook page @KCPubHealth

Providing effective and innovative health and disease prevention services for more than two million residents and visitors of King County, Public Health – Seattle & King County works for safer and healthier communities for everyone, every day. More at www.kingcounty.gov/health

Keep up with the latest Public Health news in King County by subscribing to the department's blog, Public Health Insider.

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Washington State Department of

Health

Public Health

Seattle & King County

Basic talking points – COVID-19

Prepared on 2/29/20 at 10:00 a.m.

- Over the last 12 hours we have learned that there are multiple cases of coronavirus – or COVID-19 in King County, including multiple people who are hospitalized. Sadly, one individual has also died.
- There are multiple illnesses associated with a nursing home and a dialysis facility. We are working closely with their leadership, staff, and families to contain and manage the situation at these facilities.
- Health officials are working as rapidly as possible to identify others in the community who have been exposed, isolate them and get them tested for COVID-19.
- Public Health – Seattle & King County is fully activated through its Incident Command structure. They are in close contact with CDC, State DOH, hospitals, the Emergency Medical Services system, as well as our state and federal delegation. CDC in particular is providing close assistance, and is sending a high level team to King County to help with the response.
- King County government is coordinating together with Public Health to share information, deploy resources, and respond at the maximum capacity we are able.
- This is a troubling situation that health officials have been warning could happen.
- We have experience in responding to pandemics and our health officials have tremendous expertise and skills, but this is a very quickly-moving situation and information is changing daily.
- Health officials expect there will be additional cases locally and nationally as the coronavirus spreads more broadly. Our residents should plan to stay informed and follow health guidance carefully.

For more information:

www.kingcounty.gov/COVID

https://www.doh.wa.gov/Emergencies/Coronavirus

https://www.cdc.gov/coronavirus/2019-ncov/index.html

Public Health

Seattle & King County

Washington State Department of
Health

From: Duchin, Jeff
To: Baer, Atar; Kay, Meagan
Subject: Fwd: Red Dawn Breaking Bad, Start Feb 24
Date: Saturday, February 29, 2020 1:59:33 PM
Attachments: image001.png
image002.png
image005.png

Another concern re syndromic - are we missing something?

_____ Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: LeDuc, James W. <jwleduc@UTMB.EDU>
Sent: Saturday, February 29, 2020 1:10:38 PM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Carter Mecher <cmecher@charter.net>
Subject: FW: Red Dawn Breaking Bad, Start Feb 24

Sorry, had wrong email

From: LeDuc, James W.
Sent: Saturday, February 29, 2020 3:08 PM
To: Carter Mecher <cmecher@charter.net>
Cc: Jeff Duchin (Jeff.Duchin@METROKC.GOV) <Jeff.Duchin@METROKC.GOV>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Contacting Jeff Duchin.

Jim

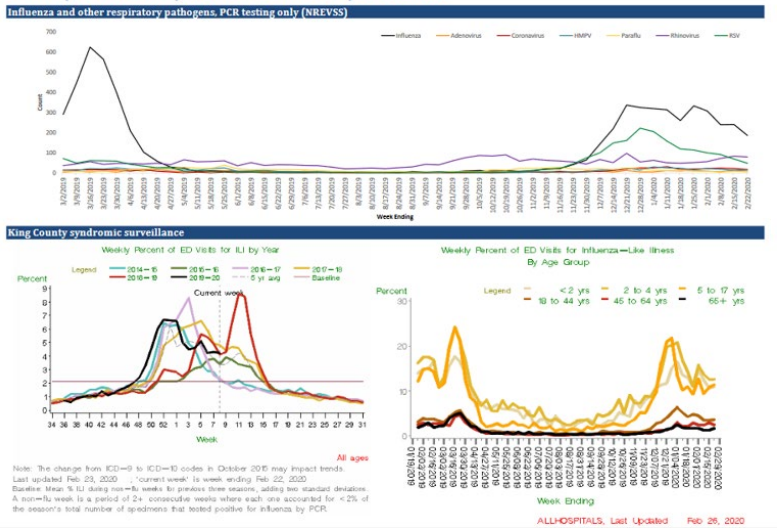
James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) 409-789-2012

From: Carter Mecher <cmecher@charter.net>
Sent: Saturday, February 29, 2020 2:09 PM
To: Dr. Eva K Lee <evalee-gatech@pm.me>
Cc: Lawler, James V <james.lawler@unmc.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Caneva, Duane <duane.caneva@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Tom Bossert <tom.bossert@me.com>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; LeDuc, James W. <jwleduc@UTMB.EDU>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Fantinato, Jessica - OHS, Washington, DC <jessica.fantinato@usda.gov>; Colby, Michelle - OHS, Washington, DC <michelle.colby@usda.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

I am also concerned about Seattle (Kings County). Charity, do you have contacts there? Or could someone reach out to Jeff Duchin from CDC or HHS?
https://www.kingcounty.gov/depts/health/communicable-diseases/disease-control/~/media/depts/health/communicable-diseases/documents/influenza/2020/week-08.ashx
This is week 8 data (so recent data). Compare the 3 graphs. Seeing a mismatch between pathogens by PCR (going down) and syndromic surveillance (flat). Also looking at ED visits and seeing an upward trend in school age kids (ages 5-17) and 45-64 year olds. Something doesn't sit right with me.

Public Health - Seattle & King County

Summary of Influenza Syndromic and Laboratory Surveillance



Sent from Mail for Windows 10

From: Carter Mecher
Sent: Saturday, February 29, 2020 2:58 PM
To: Dr. Eva K Lee
Cc: Lawler, James V; Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Charity, do you have any contacts in Hawaii? Would really be interested in Week 8 data.

I remember a story of a couple from Japan who were symptomatic while visiting Hawaii and were confirmed to have COVID upon their return to Japan.
https://bigislandnow.com/2020/02/17/53-self-monitor-for-coronavirus-in-hawaii-after-visiting-japanese-couple-tests-positive/

My understanding is that Hawaii did not perform testing on anyone (just monitored some contacts from symptoms).

I went to Hawaii's flu surveillance (their latest data is from week 7). My concern is the continued rise in ILI, despite a drop off in influenza in the lab.
https://health.hawaii.gov/docd/files/2018/03/FLU_Influenza_Surveillance.pdf

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Saturday, February 29, 2020 1:15 PM
To: Carter Mecher
Cc: Lawler, James V; Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: Re: Red Dawn Breaking Bad, Start Feb 24

Oops. I mixed up the order. It should be -
From travelers: Washington, Illinois, California, Arizona, MA, Wisconsin, Oregon
Unknown origin: California, Oregon, Washington

I did a quick analysis on strategic screening, if we have enough testing power, I would suggest community testing strategically in California, Chicago/Illinois, Oregon, Washington, Boston, Atlanta, New York. It would be great if we can cover more. We have to go beyond contact tracing. It is also good to cover some universities.

evalee-gatech@pm.me
https://newton.isye.gatech.edu/DrLee/
mobile: 404-432-6835

Sent with ProtonMail Secure Email.

------- Original Message -------
On Friday, February 28, 2020 7:55 PM, Dr. Eva K Lee <evalee-gatech@pm.me> wrote:

> Yes, good for them to ask.
>
> It will be good to know how many are under observation and self quarantine also. Chicago is the first city with the confirmed COVID-19 case in US (from a returning traveler). I have forward the Kaiser data to Ncal and Jeff. See if they have an answer. I don't know if I can see the Ncal data on their EPIC system. I will see.
>
> ------- Original Message -------
> On Friday, February 28, 2020 7:49 PM, Carter Mecher <cmecher@charter.net> wrote:
>
> > Need someone from HHS or CDC to pick up the phone and reach out to public health in Chicago. I would also reach out to Kaiser in Northern California. How are they explaining this?
> >
> > Sent from my iPhone
> >
> > On Feb 28, 2020, at 6:57 PM, Lawler, James V <james.lawler@unmc.edu> wrote:
> >
> > Great pick up Carter. How can we confirm? In the absence of diagnostics, I would take an abnormal uptick in ILI syndromic data as a trigger for NPI.
> >
> > **James Lawler, MD, MPH, FIDSA**
> >
> > m: 703.407.6431
> >
> > james.lawler@unmc.edu
> >
> > ---
> >
> > **From:** Carter Mecher <cmecher@charter.net>
> > **Date:** Friday, February 28, 2020 at 3:37 PM
> > **To:** Tracey McNamara <tmcNamara@westernu.edu>, "Baric, Ralph S" <rbaric@email.unc.edu>, "Caneva, Duane" <duane.caneva@hq.dhs.gov>, Richard Hatchett <richard.hatchett@cepi.net>, "Dr. Eva K Lee" <evalee-gatech@pm.me>
> > **Cc:** Tom Bossert <tom.bossert@me.com>, "Martin, Gregory J" <MartinGJ@state.gov>, "Walters, William" <WaltersWA2@state.gov>,

"HAMILTON, CAMERON" <cameron.hamilton@hq.dhs.gov>, "rjglassjr@gmail.com" <rjglassjr@gmail.com>, "Dodgen, Daniel (OS/ASPR/SPPR)" <Daniel.Dodgen@hhs.gov>, "DeBord, Kristin (OS/ASPR/SPPR)" <Kristin.DeBord@hhs.gov>, "Phillips, Sally (OS/ASPR/SPPR)" <Sally.Phillips@hhs.gov>, David Marcozzi <DMarcozzi@som.umaryland.edu>, "Hepburn, Matthew J CIV USARMY (USA)" <matthew.j.hepburn.civ@mail.mil>, Lisa Koonin <lkoonin1@gmail.com>, "HARVEY, MELISSA" <melissa.harvey@hq.dhs.gov>, "WOLFE, HERBERT" <HERBERT.WOLFE@hq.dhs.gov>, "Eastman, Alexander" <alexander.eastman@hq.dhs.gov>, "EVANS, MARIEFRED" <mariefred.evans@associates.hq.dhs.gov>, "Callahan, m." <MVCALLAHAN@mgh.harvard.edu>, "jwleduc@UTMB.EDU" <jwleduc@utmb.edu>, "Johnson, Robert (OS/ASPR/BARDA)" <Robert.Johnson@hhs.gov>, "Yeskey, Kevin" <kevin.yeskey@hhs.gov>, "Disbrow, Gary (OS/ASPR/BARDA)" <Gary.Disbrow@hhs.gov>, "Redd, John (OS/ASPR/SPPR)" <John.Redd@hhs.gov>, "Hassell, David (Chris) (OS/ASPR/IO)" <David.Hassell@hhs.gov>, "Hamel, Joseph (OS/ASPR/IO)" <Joseph.Hamel@hhs.gov>, "Dean, Charity A@CDPH" <Charity.Dean@cdph.ca.gov>, "Lawler, James V" <james.lawler@unmc.edu>, "Borio, Luciana" <LBorio@iqt.org>, Dan Hanfling <DHanfling@iqt.org>, "eric.mcdonald@sdcounty.ca.gov" <eric.mcdonald@sdcounty.ca.gov>, "Wade, David" <david.wade@hq.dhs.gov>, "TARANTINO, DAVID A" <david.a.tarantino@cbp.dhs.gov>, "WILKINSON, THOMAS" <THOMAS.WILKINSON@hq.dhs.gov>, "david.gruber@dshs.texas.gov" <david.gruber@dshs.texas.gov>, "KAUSHIK, SANGEETA" <sangeeta.kaushik@hq.dhs.gov>, Nathaniel Hupert <nah2005@med.cornell.edu>, "Lee, Scott" <Scott.Lee@hhs.gov>, "Padget, Larry G" <PadgetLG@state.gov>, Ryan Morhard <Ryan.Morhard@weforum.org>, "Stack, Steven J (CHFS DPH)" <steven.stack@ky.gov>, "Adams, Jerome (HHS/OASH)" <Jerome.Adams@hhs.gov>, "Fantinato, Jessica - OHS, Washington, DC" <jessica.fantinato@usda.gov>, "Colby, Michelle - OHS, Washington, DC" <michelle.colby@usda.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Non-UNMC email

A couple updates. Noticed that CDC increased the number of confirmed cases of Americans n the US from the cruise ship from 42 to 44.

Looked at ILI for NYC and TX. ILI is trending down. Only odd thing I noticed besides the Kaiser Northern California ILI data on hospitalizations and the data from Chicago below (the ER ESSENCE data %of ER visits for ILI).Instead of falling, it actually increased slightly.

<image001.png>

<image002.png>

National ILI data shows it trending down (down to 5.5%).

<image003.gif>

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher
Sent: Friday, February 28, 2020 11:52 AM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans VetPop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%
70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	**100%**	**3,672**	**100%**	**19,209,704**	**100%**

The Veteran population is similar to the cruise population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the crew ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported to be in serious condition (5%).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	VHA Total
Operating Beds Hospital	15,744
Operating Beds Medicine/Surgery	9,817
Operating Beds ICU	1,692
ADC Hospital	9,805
ADC Medicine/Surgery	6,225
ADC ICU	1,101
ADC On a Ventilator	240
Daily Hospital Admissions	1,641
Daily Admissions Medicine/Surgery	1,226
Daily Admissions/Transfers in ICU	389
Emergency Department Care	
Daily ER Visits	6,874
Outpatient Care (non-ER)	
Daily Clinic Visits	209,336

Annually, VA has:

- 450,000 acute (medical/surgical) admissions
- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who use VA services), we can assume that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 63,000 ICU admissions.

Over an average 3 month period, VA would have ~625,000 ER/Urgent care visits, 112,000 acute care admissions, and 35,000 ICU admissions.

Now you understand the challenge.

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tested
11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		1,219 tested; 73 asymptomatic
	329 American evacuated from cruise ship (14 of the evacuees found to be			

16-Feb	+) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,723 tested; 19 seriously ill
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,066 tested; 28 seriously ill; 322 asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,894 tested; 35 seriously ill; 380 asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

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Sent: Friday, February 28, 2020 9:26 AM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

I think this data is close enough to convince people that this is going to be bad and we will need to pull the full array of Nis (TLC). All that is left is when (timing).

I went back to our comparison of Philadelphia and St. Louis in 1918. The difference between Philadelphia and St. Louis in terms when they pulled the trigger on NPIs was about two weeks during the course of their individual outbreaks.

In St. Louis, NPIs were put in place 1 week after the first cases at Jefferson Barracks, 5 days after the first death, and 3 days after the first civilian cases in St. Louis. In Philadelphia, NPIs were put in place 3 weeks after the first cases at the Navy Yard, 16 days after the first civilian cases in Philadelphia, 2 weeks after the first death. In the cases of NPIs, timing matters.

We would estimate that the outbreak in Wuhan had about a 2 week head start on the rest of Hubei. So the measures China implemented to slow transmission happened about two later in the course of the outbreak in Wuhan compared to the rest of Hubei Province. That comparison looks a lot like Philadelphia and St. Louis.

So we have a relatively narrow window and we are flying blind.

Looks like Italy missed it.

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This might be of interest. A comparison I ran of the distribution of the US population by age group compared to the passengers and crew aboard the Diamond Princess (surprised nobody ever did this). Except for kids, the cruise ship data tells a lot about adults (really shifted toward the 60-80 year old group).

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution
0-9 years	40,243,098	12%	16	0%
10-19 years	41,910,114	13%	23	1%
20-29 years	45,489,095	14%	347	9%
30-39 years	43,204,209	13%	428	12%
40-49 years	40,617,231	12%	334	9%
50-59 years	43,409,050	13%	398	11%
60-69 years	36,824,083	11%	923	25%
70-79 years	21,588,326	7%	1,015	27%
>80 years	12,433,972	4%	227	6%
Total population	**325,719,178**	**100%**	**3,711**	**100%**

Here is how the distributions compare when I only look at age≥20 (essentially adults)

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution
20-29 years	45,489,095	19%	347	9%
30-39 years	43,204,209	18%	428	12%
40-49 years	40,617,231	17%	334	9%
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Updated tables

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Country	Passengers/Crew	Cases Hospitalized in Japan	Cases Confirmed upon Repatriation	Total Confirmed Cases	ICU Admissions	Deaths	% Infected
US	434	44	42	86			20%
Hong Kong	364	55	4	59			16%
Canada	256	47		47			18%
Australia	241	47	8	55			23%
UK	78	6	4	10		1	13%
Italy	35						
South Korea	14						
Israel	11	3	2	5			45%
Japan						5	
Subtotal	1,433	202	60	262			
Total	**3,711**	**691**	**60**	**751**		**6**	**20%**

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Japan just announce a sixth passenger on the cruise ship has died (British passenger).

So 6/751 = 0.8% CFR This is now the new lower limit of CFR.

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Sent: Friday, February 28, 2020 5:20 AM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee

Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Japan announced fifth death of Diamond Princess passenger (70 year old woman). CFR for infected passengers is now 0.67% (this represents the lower limit of CFR). Below are the latest numbers I have (had to make a correction when I learned that the 705 total cases reported by Japan also included the 14 confirmed cases in Americans who were evacuated but not the cases that have appeared in the remaining citizens from the US (28), Australia (8), Hong Kong (4), UK (4), and Israel (2) after they were evacuated.

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tested
11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		1,219 tested; 73 asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,723 tested; 19 seriously ill
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,066 tested; 28 seriously ill; 322 asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,894 tested; 35 seriously ill; 380 asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
27-Feb	Death reported in Japan	751	5	

Country	Passengers/Crew	Cases Hospitalized in Japan	Cases Confirmed upon Repatriation	Total Confirmed Cases	ICU Admissions	Deaths	% Infected
US	434	44	42	86			20%
Hong Kong	364	55	4	59			16%
Canada	256	47		47			18%
Australia	241	47	8	55			23%
UK	78	6	4	10			13%
Italy	35						
South Korea	14						
Israel	11	3	2	5			45%
Japan						5	
Subtotal	1,433	202	60	262			
Total	**3,711**	**691**	**60**	**751**			**20%**

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher
Sent: Thursday, February 27, 2020 11:09 PM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Watching for ILI data for Chicago, NYC, CA, and TX (covering most of the Tier 1 UASI cities that encompass ~25% of the US population). CA posted Week 8 data tonight (others should be available tomorrow).

Here is the CA report

https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/Immunization/Week2019-2008_FINALReport.pdf [cdph.ca.gov]

Flu activity is decreasing, so watching for anything unusual in the decline in ILI (something displacing flu). Data from Kaiser Northern California is interesting that percent P&I admissions going up with decreasing flu activity. Charity, does Kaiser also follow P&I for outpatient clinics?

Week 7

Week 8

Week 7

Week 8

Sent from Mail [go.microsoft.com] for Windows 10

From: Tracey McNamara
Sent: Thursday, February 27, 2020 10:12 PM
To: Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee; Carter Mecher
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Have you seen this? Israel claims they will have an oral vaccine in 3 weeks

Tracey

https://www.jpost.com/HEALTH-SCIENCE/Israeli-scientists-In-three-weeks-we-will-have-coronavirus-vaccine-619101 [jpost.com]

From: Baric, Ralph S <rbaric@email.unc.edu>
Sent: Thursday, February 27, 2020 6:55 PM

To: Caneva, Duane <duane.caneva@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Dr. Eva K Lee <evalee-gatech@pm.me>; Carter Mecher <cmecher@charter.net>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Tom Bossert <tom.bossert@me.com>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Fantinato, Jessica - OHS, Washington, DC <jessica.fantinato@usda.gov>; Colby, Michelle - OHS, Washington, DC <michelle.colby@usda.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

A comment: Pangolins are not the animal reservoir. Pangolin -CoV-2020 virus is only 90% identical to SARS-CoV2 while SARS-CoV-2 and bat-CoV-RaTG13 is 96% identical. The paper concludes its not a reservoir…"Although this present study does not support pangolins would be an intermediate host for the emergence of the 2019-nCoV……" at this moment, the most likely origins are bats, and I note that it is a mistake to assume that an intermediate species is needed. ralph

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From: Caneva, Duane <duane.caneva@hq.dhs.gov>
Sent: Thursday, February 27, 2020 4:20 PM
To: Richard Hatchett <richard.hatchett@cepi.net>; Dr. Eva K Lee <evalee-gatech@pm.me>; Carter Mecher <cmecher@charter.net>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Tom Bossert <tom.bossert@me.com>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; Baric, Ralph S <rbaric@email.unc.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Fantinato, Jessica - OHS, Washington, DC <jessica.fantinato@usda.gov>; Colby, Michelle - OHS, Washington, DC <michelle.colby@usda.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Updated Master Question List.

Best,

Duane

From: Caneva, Duane
Sent: Thursday, February 27, 2020 4:15 PM
To: Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Additional information sources:

Forwarding information from one of our BAH team members, Sumiko Mekaru, PhD, who has been working with colleagues at Harvard/BCH, Oxford, and Northeastern to develop a centralized repository of individual-level information on patients with laboratory-confirmed COVID-19 to include a map/data explorer visualization tool. This information is publicly available with credit to be given to the Open COVID-19 Data Curation Group on any publications/communications. Please feel free to disseminate further to anyone interested. If you have any questions, feel free to reach out. Thank you!

Map/Data Explorer: https://scarpino.shinyapps.io/Emergent_Epidemics_Lab_nCoV2019/ [scarpino.shinyapps.io]

Link to Linelist: https://docs.google.com/spreadsheets/d/1itaohdPiAeniCXNlntNztZ_oRvjh0HsGuJXUJWET008/edit#gid=0 [docs.google.com]

Twitter Update Notifications: https://twitter.com/svscarpino/status/1230330483319484417 [twitter.com], https://twitter.com/MOUGK [twitter.com]

Summary (https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30119-5/fulltext [thelancet.com])

- Coronavirus disease 2019 (COVID-19) is spreading rapidly across China, and as of Feb 16, 2020, had been reported in 26

countries globally. The availability of accurate and robust epidemiological, clinical, and laboratory data early in an epidemic is important to guide public health decision-making.1

- Consistent recording of epidemiological information is important to understand transmissibility, risk of geographic spread, routes of transmission, and risk factors for infection, and to provide the baseline for epidemiological modelling that can inform planning of response and containment efforts to reduce the burden of disease. Furthermore, detailed information provided in real time is crucial for deciding where to prioritise surveillance.
- Line list data are rarely available openly in real time during outbreaks. However, they enable a multiplicity of analyses to be undertaken by different groups, using various models and assumptions, which can help build consensus on robust inference. Parallels exist between this and the open sharing of genomic data.2

- We have built a centralised repository of individual-level information on patients with laboratory-confirmed COVID-19 (in China, confirmed by detection of virus nucleic acid at the City and Provincial Centers for Disease Control and Prevention), including their travel history, location (highest resolution available and corresponding latitude and longitude), symptoms, and reported onset dates, as well as confirmation dates and basic demographics. Information is collated from a variety of sources, including official reports from WHO, Ministries of Health, and Chinese local, provincial, and national health authorities. If additional data are available from reliable online reports, they are included. Data are available openly and are updated on a regular basis (around twice a day).

- We hope these data continue to be used to build evidence for planning, modelling, and epidemiological studies to better inform the public, policy makers, and international organizations and funders as to where and how to improve surveillance, response efforts, and delivery of resources, which are crucial factors in containing the COVID-19 epidemic.

- The epidemic is unfolding rapidly and reports are outdated quickly, so it will be necessary to build computational infrastructure that can handle the large expected increase in case reports. Data sharing will be vital to evaluate and maintain accurate reporting of cases during this outbreak.3

From: Richard Hatchett <richard.hatchett@cepi.net>
Sent: Thursday, February 27, 2020 1:29 PM
To: Dr. Eva K Lee <evalee-gatech@pm.me>; Carter Mecher <cmecher@charter.net>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Tom Bossert <tom.bossert@me.com>; Caneva, Duane <duane.caneva@hq.dhs.gov>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <herbert.wolfe@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <thomas.wilkinson@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Excellent editorial from Jeremy Farrar about the near-term funding requirement:

https://wellcome.ac.uk/news/global-institutions-must-act-urgently-and-decisively-tackle-covid-19 [wellcome.ac.uk]

UK Chief Medical Officer Chris Whitty providing forewarning that schools may need to close for as long as two months:

Chief medical officer: schools could shut for two months in event of pandemic

Chris Whitty has been speaking about measures to reduce risk in the event that coronavirus outbreak reaches pandemic proportions. While noting that such an outcome was just one possibility, he said that there could be a “social cost” if the virus intensifies seeing mass gatherings reduced and schools closed for more than two months.

He said:

One of the things that's really clear with this virus, much more so than flu, is that anything we do we're going to have to do for quite a long period of time, probably more than two months.

"The implications of that are non-trivial, so we need to think that through carefully.

"This is something we face as really quite a serious problem for society potentially if this goes out of control. It may not but if it does globally then we may have to face that."

Whitty also said that the UK would inevitably be affected in the event of a global epidemic.

If this becomes a global epidemic then the UK will get it, and if it does not become a global epidemic the UK is perfectly capable of containing and getting rid of individual cases leading to onward transmission.

"If it is something which is containable, the UK can contain it. If it is not containable, it will be non-containable everywhere and then it is coming our way."

https://www.theguardian.com/world/live/2020/feb/27/coronavirus-news-live-updates#block-5e57f5698f086a28115b3d8d [theguardian.com]

From: Dr. Eva K Lee <evalee-gatech@pm.me>
Sent: 27 February 2020 17:38
To: Carter Mecher <cmecher@charter.net>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Tom Bossert <tom.bossert@me.com>; Caneva, Duane <duane.caneva@hq.dhs.gov>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

All schools close in Hong Kong until mid April. They are quarantining a huge group of people entering from China, in separate apartment complex.

Colleagues in UK told me that their schools are on the verge of closing also.

evalee-gatech@pm.me

https://newton.isye.gatech.edu/DrLee/ [newton.isye.gatech.edu]

mobile: 404-432-6835

Sent with ProtonMail [protonmail.com] Secure Email.

------- Original Message -------

On Thursday, February 27, 2020 12:14 PM, Carter Mecher <cmecher@charter.net> wrote:

Japan

All schools told to be closed until April: https://www.japantimes.co.jp/news/20.../#.XlelKkNryik [japantimes.co.jp]

Prime Minister Abe at the government's headquarters opened shortly after 6:00 pm on March 27, and temporarily closed all elementary schools, junior high schools, and high schools nationwide from March 2 until spring break.

Prime Minister Abe noted that temporary closure of elementary and junior high schools has been taken in Hokkaido and Ichikawa City, Chiba Prefecture, and said, "Efforts have been made to prevent the spread of infection to children in each region. But the last couple of weeks is a very important time. "

He said, "First and foremost, put children's health and safety first, and prepare in advance for the risk of large-scale infection caused by many children and teachers gathering for long hours on a daily basis." He stated that all elementary schools, junior high schools, high schools and special needs schools should be closed temporarily until spring break

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Thursday, February 27, 2020 6:17 AM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

About time for Japan (was wondering what they were waiting for to pull this trigger)

Japan's Prime Minister Abe asks schools across the country to be closed from Monday to prevent the spread of coronavirus

Hope we are paying attention in the US and especially California.

Even NK is closing schools

North Korea postpones the opening of schools to prevent an outbreak of coronavirus

Add a few more countries to the list:

- Denmark
- Estonia
- Norway
- Romania

The outbreaks in Italy and Iran are much larger than many realize by evidence of the numbers of confirmed cases in international travelers from those areas. Cases in travelers from Italy have present in Israel, England, Denmark and Brazil. Need a pretty large outbreak for that to happen—much larger than the numbers reported.

Iran now reporting 245 cases and 26 deaths. Given the confirmed case in Canada of a traveler from Iran and the time from disease onset to death, this is already a well established and large outbreak in Iran.

Italy and Iran are about where Wuhan was 1 month ago. In a couple of weeks Wuhan was overwhelmed.

Here are some snippets re cases of travelers from Italy:

- Israel confirms 1 new case of coronavirus; an Israeli citizen who recently came back from Italy
- 2 new cases confirmed in England, UK; one of them came back from Italy and the other from Tenerife, Spain
- Denmark's TV2 says one of its reporters has tested positive for coronavirus after going on holiday in northern Italy. He developed symptoms on Wednesday morning.
- The patient is a 61-year-old man in São Paulo. He was in northern Italy from February 9 until February 21.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Thursday, February 27, 2020 5:24 AM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Looked at the age specific data from the cruise ship (focusing on ages <20). Although the numbers are small, the prevalence of disease in school age kids (ages 10-19) is similar to the elderly.

What also caught my eye was the data for young adults (ages 20-49). Since this data is for the entire ship, I suspect that most in this age group are crew. Only 8% of this age group was confirmed to have infection. The total confirmed cases in this analysis was only 619 (we are now up to 744), so perhaps they have since caught up.

Sent from Mail [go.microsoft.com] for Windows 10

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Sent: Thursday, February 27, 2020 5:00 AM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Details below on case in California. From the cruise ship data we would estimate there are 20-50 cases for each ICY admission (assuming ICU admissions in 2%-5% of cases). That ratio was for an aged population. Suspect that ratio might be higher for a general population. And given the time from disease onset to being on a ventilator for at least a week (since at least Feb 19 when the patient arrived at UC Davis), the outbreak has had a good head start. That would suggest we already have a significant outbreak and are well behind the curve. We are now well past the equivalent 5:45 moment at Mann Gulch. You can't outrun it. They need to be thinking NPIs locally (full TLC including school closure).

[I will send something I was looking at re the cruise ship data and kids.]

https://www.sacbee.com/news/local/article240682311.html [sacbee.com]

Latest: Coronavirus patient at UC Davis Medical Center since Feb. 19 wasn't tested for days

The Solano County resident who is the nation's first confirmed case of coronavirus from "exposure in the community" has been under the care of UC Davis Medical Center for a week [sacbee.com], according to an internal memo obtained Wednesday night by The Sacramento Bee.

Just before 10 p.m., the hospital published the memo that was sent to employees by UC Davis Health leaders earlier in the day [ucdavis.edu] and outlines the timeline of the patient's admission and disclosed that several employees who were exposed to the patient self-isolate at home "out of abundance of caution."

The patient, whom the U.S. Centers for Disease Control and Prevention confirmed has tested positive the COVID-19 strain, was moved to the Sacramento teaching hospital on Feb. 19, according to the memo sent to staffers by David Lubarsky, the head of the hospital and UC Davis Health's vice chancellor of human health services, and Brad Simmons, the health system's interim CEO.

The patient was transferred to the facility from another hospital, where a medical team had already put the patient on a ventilator.

"The individual is a resident of Solano County and is receiving medical care in Sacramento County. The individual had no known exposure to the virus through travel or close contact with a known infected individual," California Department of Public Health officials said in a news release.

Because physicians at the first hospital suspected the patient had a virus, they issued an order that health care workers should wear personal protective gear when with the patient to guard against exposure to droplets, said the memo, which was first reported by the Davis Enterprise newspaper [davisenterprise.com].

The UCD medical team used the proper infection protocols out of concern that the individual might have coronavirus, according to the memo, and upon the patient's admission, UCD physicians requested that public health officials perform a test to determine whether the person had COVID-19.

"We requested COVID-19 testing by the CDC, since neither Sacramento County nor CDPH is doing testing for coronavirus at this time," the memo says. "Since the patient did not fit the existing CDC criteria for COVID-19, a test was not immediately administered. UC Davis Health does not control the testing process."

On Sunday, the CDC ordered a coronavirus test on the patient, and UC Davis Health officials discovered Wednesday that the patient tested positive for the deadly respiratory illness that causes coughing, fever and shortness of breath. That prompted hospital officials to tell "a small number" of hospital workers to stay home and monitor themselves for possible infection.

"Just as when a health care worker has a small chance of exposure to other illnesses, such as TB or pertussis, we are following standard CDC protocols for determination of exposure and surveillance," the memo said. "So, out of an abundance of caution, in order to assure the health and safety of our employees, we are asking a small number of employees to stay home and monitor their temperature."

"We are handling this in the same way we manage other diseases that require airborne precautions and monitoring," the memo said, adding hospital officials are "in constant communication with the state health department and the CDC and Sacramento County Public Health about the optimal management of this patient and possible employee exposures."

UCD officials did not respond to The Bee's request for comment.

The memo ended: "We are dedicated to providing the best care possible for this patient and continuing to protect the health of our employees who care for them."

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 9:45 PM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Some updates.

Singapore and Hong Kong continue to hold the line.

Singapore (+2 case) 93 cases/0 deaths /7 in ICU (still 4 kids—none currently hospitalized/2 were asymptomatic

Hong Kong (+6) 91 cases/2 deaths/ 4 critical; 2 serious (1 kid age 16)

Japan 189 cases/3 deaths/13 serious

Explosive growth in South Korea, Italy, and Iran

South Korea 1,596 cases/13 deaths/13 serious; 5 critical

Italy 453 cases/12 deaths

Iran 139 cases/19 deaths

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Sent: Wednesday, February 26, 2020 9:29 PM

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Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Update Hubei & Wuhan Hospitalizations per 100,000. Hubei curve is plateauing.

	Hubei 2019-nCoV Confirmed Hospital Data							Hubei and Wuhan Cases & Hospitalization Rates				
Date	Total Current Inpatients	Mild Disease	Severely Ill	Critically Ill	Cum Discharges	Cum Deaths	Cum Inpatients	Hubei Cum cases	Wuhan Cases	Hubei Cum Hospitalization Rate per 100,000	Wuhan Cum Hospitalization Rate per 100,000	%Hubei Cases Hospitalized
1/14/20	6		6				6	41	41	0.01	0.5	
1/15/20	5		5			2	7	41	41	0.01	0.5	
1/16/20	5		5			2	7	45	45	0.01	0.5	
1/17/20	8		8			2	10	62	62	0.02	0.7	
1/18/20	136	100	33	3		3	139	121	121	0.2	1.4	
1/19/20	170	126	35	9		4	174	198	198	0.3	2.4	
1/20/20	239	176	51	12		7	246	270	258	0.4	3.1	
1/21/20						15		375	320	0.0	3.8	
1/22/20	399	304	71	24		17	416	444	390	0.7	4.7	
1/23/20	494	365	106	23	31	24	549	549	495	0.9	5.9	100%
1/24/20	658	472	129	57	32	39	729	729	572	1.2	6.8	100%
1/25/20	915		221		85	52	1,052	1,052	618	1.8	7.4	100%
1/26/20	1,645	1,013	563	69	44	76	1,423	1,423	698	2.4	8.3	100%
1/27/20	2,567	1,877	563	127	47	100	2,714	2,714	1,590	4.6	19.0	100%

1/28/20	3,349	2,450	671	228	80	125	3,554	3,554	1,905	6.1	22.8	100%
1/29/20	4,334	3,346	711	277	90	162	4,586	4,586	2,261	7.8	27.0	100%
1/30/20	5,486	4,392	804	290	116	204	5,806	5,806	2,639	9.9	31.5	100%
1/31/20	6,738	5,444	956	338	166	249	7,153	7,153	3,215	12.2	38.4	100%
2/1/20	8,565	7,003	1,118	444	215	294	9,074	9,074	4,109	15.5	49.1	100%
2/2/20	9,618	7,917	1,223	478	295	350	10,263	11,177	5,142	17.5	56.4	92%
2/3/20	10,990	8,857	1,557	576	396	414	11,800	13,522	6,384	20.2	66.6	87%
2/4/20	12,627	10,107	1,809	711	520	479	13,626	16,678	8,351	23.3	81.6	82%
2/5/20	14,314	11,230	2,328	756	633	549	15,496	19,665	10,117	26.5	95.3	79%
2/6/20	15,804	11,802	3,161	841	817	618	17,239	22,112	11,618	29.5	108.3	78%
2/7/20	19,835	14,640	4,188	1,007	1,113	699	21,647	24,953	13,603	37.0	141.1	87%
2/8/20	20,993	15,746	4,093	1,154	1,439	780	23,212	27,100	14,982	39.7	153.4	86%
2/9/20	22,160	16,655	4,269	1,236	1,795	871	24,826	29,631	16,902	42.4	169.3	84%
2/10/20	25,087	18,743	5,046	1,298	2,222	974	28,283	31,728	18,454	48.3	196.7	89%
2/11/20	26,121	18,880	5,724	1,517	2,639	1,068	29,828	31,728	18,454	51.0	207.4	94%
2/12/20	33,693	26,609	5,647	1,437	3,441	1,310	38,444	48,206	32,994	65.7	314.6	80%
2/13/20	36,719	27,081	7,953	1,685	4,131	1,426	42,276	51,986	35,991	72.3	349.9	81%
2/14/20	38,107	27,955	8,276	1,876	4,774	1,457	44,338	54,406	37,914	75.8	369.4	81%
2/15/20	39,447	29,051	8,439	1,957	5,623	1,596	46,666	56,249	39,462	79.8	391.4	83%
2/16/20	40,814	31,017	8,024	1,773	6,639	1,696	49,149	58,182	41,152	84.0	415.6	84%
2/17/20	41,957	30,987	9,117	1,853	7,862	1,789	51,608	59,989	42,752	88.2	439.7	86%
2/18/20	43,471	32,225	9,289	1,957	9,128	1,921	54,520	61,682	44,412	93.2	469.3	88%
2/19/20	43,745	32,567	9,128	2,050	10,337	2,029	56,111	62,013	45,027	95.9	487.0	90%
2/20/20	42,056	31,059	8,979	2,018	11,788	2,144	55,988	62,422	45,346	95.7	486.2	90%
2/21/20	41,036	30,144	8,400	2,492	13,557	2,250	56,843	63,454	45,660	97.2	489.0	90%
2/22/20	39,073	29,643	7,776	1,654	16,738	2,399	58,210	64,287	46,607	99.5	504.5	91%
2/23/20	37,896	29,221	7,090	1,585	18,854	2,563	59,313	64,786	47,071	101.4	515.2	92%
2/24/20	36,242	27,916	6,840	1,486	20,912	2,615	59,769	65,187	47,441	102.2	520.0	92%
2/25/20	34,978	26,994	6,581	1,403	23,200	2,641	60,819	65,596	47,824	104.0	530.1	93%

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Sent: Wednesday, February 26, 2020 8:35 PM

To: Richard Hatchett; Tom Bossert

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Subject: RE: Red Dawn Breaking Bad, Start Feb 24

FEB 26 2020

QIAGEN announces worldwide shipments of QIAstat-Dx test kits for SARS-CoV-2

• QIAstat-Dx Respiratory 2019-nCoV Panel rapidly differentiates novel coronavirus from 21 other pathogens implicated in serious respiratory syndromes

• Panel being tested at four hospitals in China after initial evaluation on clinical samples by a leading Paris hospital

• Adds to QIAGEN's portfolio of molecular testing solutions to aid in global public health emergency

Hilden, Germany, and Germantown, Maryland, February 26, 2020 – QIAGEN (NYSE: QGEN; Frankfurt Prime Standard: QIA) today announced it has shipped its newly developed QIAstat-Dx Respiratory Panel 2019-nCoV test kit to four hospitals in China for evaluation. The new kit detects the novel coronavirus SARS-CoV-2 and adds rapid Sample to Insight syndromic testing to QIAGEN's portfolio of molecular testing solutions in the public health emergency. QIAGEN is also in the process of shipping QIAstat-Dx testing kits to public health institutions in other regions, including Europe, South-East Asia, and the Middle East.

Since January QIAGEN has been providing instruments and consumables to support detection of the virus in China and other markets. Official protocols for SARS-CoV-2 detection include QIAGEN extraction kits, reagents and instruments for real-time polymerase chain reaction (RT-PCR) workflows. Customers also are deploying QIAsymphony modular instruments and NeuMoDx integrated PCR systems to automate higher-throughput processing of their laboratory-developed tests for SARS-CoV-2.

"Our dedicated task force has moved very fast to develop and make available the QIAstat-Dx respiratory panel with SARS-CoV-2 detection. We are partnering closely with authorities and customers around the world to bring rapid, accurate diagnosis to the fight against this deadly infectious disease," said Thierry Bernard, Interim CEO of QIAGEN and Senior Vice President, Head of the Molecular Diagnostics Business Area. "As we have in past health crises such as SARS and the swine flu, QIAGEN is working hard to deliver better, faster testing solutions for hospitals and public health institutions to aid in the effort to monitor and bring the outbreak under control. Our employees' extraordinary response embodies QIAGEN's core mission to make improvements in life possible."

The QIAstat-Dx system was introduced in Europe in 2018 as a CE-product and cleared by the Food and Drug Administration (FDA) in the United States in mid-2019. It enables fast, cost-effective and easy-to-use syndromic testing with novel Sample to Insight workflows. The system streamlines molecular testing from end to end. A technician simply loads a clinical sample (such as a swab) into a single-use QIAstat-Dx cartridge and places it in the analyzer. QIAGEN chemistries for sample processing and analysis are built in, and the QIAstat-Dx instrument delivers results in about one hour.

New QIAstat-Dx testing solution for SARS-CoV-2

The QIAstat-Dx Respiratory 2019-nCoV Panel is a new version of the existing QIAstat-Dx Respiratory Panel for differential analysis of 21 viral and bacterial pathogens in respiratory syndromes. Once the SARS-CoV-2 genome was sequenced in January, QIAGEN developed two highly sensitive assays to detect SARS-CoV-2 targeting Orb1ab and the E gene. The addition of these targets provides parallel tools for combined detection of the novel coronavirus with increased sensitivity.

The expanded QIAstat-Dx panel is currently being evaluated at the Bichat-Claude Bernard Hospital in Paris. “After more than a year of experience using the existing QIAstat-Dx Respiratory Panel to evaluate patients coming into our Emergency Department with respiratory syndromes, we are evaluating the new panel with SARS-CoV-2 against RT-PCR testing using WHO recommended protocols. The QIAstat-Dx solution can provide results in about one hour, with high sensitivity and specificity and minimal hands-on time for hospital or laboratory personnel,” said Dr. Benoit Visseaux, Associate Professor of Virology at Bichat-Claude Bernard Hospital in Paris.

Amid the rapidly evolving response to the coronavirus outbreak, the regulatory status of the QIAstat-Dx Respiratory Panel will vary by location. QIAGEN will apply for emergency authorization for marketing of the new panel from the U.S., the Korean KCDC/MFDS, and FDA and China’s National Medical Products Administration (NMPA); the panel will be available with CE-IVD marking in Europe and other markets.

Multiple other QIAGEN testing solutions for SARS-CoV-2

QIAGEN has moved quickly on several fronts to provide molecular testing solutions to researchers working to counter the international threat from the SARS-CoV-2 virus. Building on its strong position and experience in molecular testing for infectious diseases, QIAGEN is providing a variety of solutions:

- Enabling laboratory-developed tests (LDTs) – extraction kits, PCR enzymes and instruments, supporting in-house testing by laboratories and public health institutions. CDC guidelines for RT-PCR testing list QIAGEN’s EZ1 DSP Virus kits, which run on EZ1 Advanced workstations, and QIAamp DSP Viral RNA Mini kits, which can be automated on QIAcube instruments. Chinese authorities and the Berlin Charitè protocol also include QIAGEN consumables.
- Mid- and high-throughput automation – QIAsymphony modular systems for sample preparation and PCR analysis, as well as NeuMoDx 96 and 288 systems for fully integrated PCR analysis, enabling customers to implement higher-throughput solutions for laboratory-developed RT-PCR tests. QIAGEN recently started placing NeuMoDx systems in China, for use in with LDTs in SARS-CoV-2 testing.
- Additional real-time PCR tests – two new RT-PCR tests for detection of SARS-CoV-2 have been developed at QIAGEN sites in China and the United States and will be available for Research Use Only. The company is investigating potential emergency use options for the automated PCR-based test solutions.

Further information can be also found here [corporate.qiagen.com]

About QIAGEN

QIAGEN N.V., a Netherlands-based holding company, is the leading global provider of Sample to Insight solutions that enable customers to gain valuable molecular insights from samples containing the building blocks of life. Our sample technologies isolate and process DNA, RNA and proteins from blood, tissue and other materials. Assay technologies make these biomolecules visible and ready for analysis. Bioinformatics software and knowledge bases interpret data to report relevant, actionable insights. Automation solutions tie these together in seamless and cost-effective workflows. QIAGEN provides solutions to more than 500,000 customers around the world in Molecular Diagnostics (human healthcare) and Life Sciences (academia, pharma R&D and industrial applications, primarily forensics). As of December 31, 2019, QIAGEN employed approximately 5,100 people in over 35 locations worldwide. Further information can be found athttp://www.qiagen.com [qiagen.com].

From: Richard Hatchett <richard.hatchett@cepi.net>

Sent: Wednesday, February 26, 2020 3:34 PM

To: Tom Bossert <tom.bossert@me.com>

Cc: Caneva, Duane <duane.caneva@hq.dhs.gov>; Carter Mecher <cmecher@charter.net>; Dr. Eva K Lee <evalee-gatech@pm.me>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>

Subject: Re: Red Dawn Breaking Bad, Start Feb 24

Bob K live in the White House Briefing Room now - live feed on WaPo site -

Sent from my iPhone

> On 26 Feb 2020, at 23:08, Tom Bossert <tom.bossert@me.com> wrote:
>
> Why are CDC numbers (on their website) so low? E.g., 14,000 deaths.
>
> -Tom
>
> > On Feb 26, 2020, at 5:56 PM, Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:
> >
> > Master Question List—things to think about, updated.
> >
> > Also,
> >
> > https://www.washingtonpost.com/health/2020/02/25/cdc-coronavirus-test/ [washingtonpost.com]
> >
> > ---
> >
> > **From:** Carter Mecher <cmecher@charter.net>
> >
> > **Sent:** Wednesday, February 26, 2020 3:14 PM
> >
> > **To: Subject:** RE: Red Dawn Breaking Bad, Start Feb 24

Updated cruise ship data including data we can find by country

Country	Passengers/Crew	Cases Hospitalized in Japan	Cases Confirmed upon Repatriation	Total Confirmed Cases	ICU Admissions	Deaths	% Infected
US	434	44	42	86			20%
Hong Kong	364	55	4	59			16%
Canada	256	47		47			18%
Australia	241	47	7	54			22%
UK	78	6	4	10			13%
Italy	35						
South Korea	14						
Israel	11	3	2	5			45%
Japan						4	
Subtotal	1,433	202	59	261			
Total	**3,711**			**744**			**20%**

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the			

	infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tested
11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		1,219 tested; 73 asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,723 tested; 19 seriously ill
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,066 tested; 28 seriously ill; 322 asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	744	4	3,894 tested; 35 seriously ill; 380 asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested	746	4	

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 1:46 PM

To: Richard Hatchett; Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Number of cases from Diamond Princess cruise ship rises to 42 in US (plus 44 in Japan), for total of 86.

<image001.png>

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 12:34 PM

To: Richard Hatchett; Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

I found a treasure trove of information and analysis of the Diamond Princess cruise ship outbreak. Japan's National Institute of Infectious Diseases published a Field Briefing on Feb 21, 2020
https://www.niid.go.jp/niid/en/2019-ncov-e.html [niid.go.jp]

I took the material and built a slide deck.

Take a look.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 9:08 AM

To: Richard Hatchett; Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Things keep getting more complicated wrt the cruise ship outbreak. Another 45 patients (out of 813 passengers who let off the ship) have developed symptoms and will require testing.

TOKYO: Dozens of passengers allowed off a coronavirus-stricken ship have developed symptoms including fever and will be asked to take tests for the virus, Japan's health minister said Wednesday.

The news came as another death linked to the virus in Japan was reported and the government urged organisers of major events in the next fortnight to consider cancelling or downsizing them to help curb the spread of infections.

The government has contacted 813 former passengers of the Diamond Princess cruise ship and found "45 people had certain symptoms", Health Minister Katsunobu Kato told parliament.

"We asked all of them (who have symptoms) to see a doctor and to take tests."

Around 970 people were allowed off the boat last week after testing negative for the virus, but several have subsequently been diagnosed with the illness.

Japan has come under increasing pressure over its handling of the crisis on the vessel.

Those allowed off the ship after a 14-day quarantine were asked to stay inside, but no formal measures restricting their movement were imposed.

Opposition lawmakers have blamed the government for failing to implement a fresh 14-day quarantine after the passengers left the cruise ship – as was required by countries that repatriated citizens from the boat.

Infections have also continued to rise inside Japan, and Prime Minister Shinzo Abe on Wednesday said hosting large events should be reconsidered.

"In light of the significant infection risks, we will ask that national sporting or cultural events that will attract large crowds be either cancelled, postponed or downsized for the next two weeks," Abe told a cabinet task force meeting on the outbreak.

Concerts cancelled

After the announcement, Nippon Professional Baseball Organization said its unofficial spring games through March 15 would be held in empty stadiums, before the official season opens on March 20.

Some top Japanese musicians, including all-male group Exile and female trio Perfume cancelled concerts, while Tokyo Girls Collection fashion show on Saturday will be held with no audience, according to their organisers.

The virus has also forced professional football, rugby, golf, tennis and other sports to reschedule games or to hold their events with no fans in attendance.

The government has also asked state-operated museums and theatres to consider closing or cancelling shows.

The government has repeatedly said that the coming weeks will be critical in limiting the spread of the virus in Japan.

But its measures have been largely advisory, including recommending that people work from home or commute off-peak.

The recommendations come as the local government in northern Hokkaido announced in its latest update on the virus the death of a local resident, whose name, gender and age were not revealed.

The governor of Hokkaido, where at least 38 people have been diagnosed, said he was requesting local municipalities to close public schools for one week from Thursday.

In Tokyo meanwhile, the regional education board said public high schools may start classes late to spare students travelling on packed commuter trains.

Japan has seen at least 165 infections separate from the outbreak on the cruise ship.

The outbreak has raised fears that the Olympic Games to be hosted in Tokyo this summer could be cancelled, a possibility government officials and organisers have rejected.

“We have not thought about it. We have not heard about it. We have made inquiries, and we were told there is no such plan,” Tokyo 2020 CEO Toshiro Muto told reporters.

“Our basic thinking is to conduct the Olympics and Paralympics as planned. That’s our assumption.”

Sent from Mail [go.microsoft.com] for Windows 10

From: Richard Hatchett

Sent: Wednesday, February 26, 2020 9:01 AM

To: Carter Mecher; Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

https://www.theguardian.com/world/2020/feb/26/wuhan-nurses-plea-international-medics-help-fight-coronavirus [theguardian.com]

Moving description from the front lines of conditions in Wuhan . . . And a picture of what we will likely face soon . . .

From: Carter Mecher <cmecher@charter.net>

Sent: 26 February 2020 04:11

To: Caneva, Duane <duane.caneva@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Dr. Eva K Lee <evalee-gatech@pm.me>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Watching ILI in a few key areas--NYC, Chicago, CA, and TX. Week 7 data (week ending Feb 15). Flu is now trending down. This data is a little old (now 10 days old). Week 8 data coming soon.

Chicago

NYC

CA

TX

Sent from Mail [go.microsoft.com] for Windows 10

From: Caneva, Duane

Sent: Tuesday, February 25, 2020 10:40 PM

To: Carter Mecher; Richard Hatchett; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

ASTHO sponsored meeting hosted by White House this evening. Good discussion and input from many state and local Public Health Official partners. We are all in this together, and preparedness and response slowly transitions to community mitigation efforts and the frontline boots on the ground.

Still only 14 cases *detected*.

Red Dawn Breaking…

From: Carter Mecher <cmecher@charter.net>

Sent:

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

https://www.sciencemag.org/news/2020/02/coronavirus-infections-keep-mounting-after-cruise-ship-fiasco-japan [sciencemag.org]

TOKYO—All but a handful of the passengers of the disease-stricken Diamond Princess cruise ship berthed in Yokohama have disembarked. But for Japan, the saga is far from over. Much of the crew remains on board, enduring another 14 days of quarantine—although this time under conditions that Japanese officials hope will prevent any additional infections.

But there has been another worrisome development: As of today, eight public servants who worked on the ship to support the quarantine have tested positive for COVID-19, and more may follow. Most of the roughly 90 health ministry employees who visited the ship during the first 2-week quarantine that ended on 19 February initially returned to their normal work duties, but in light of the infections, the health ministry yesterday revised its policy and now those potentially exposed to the virus on the Diamond Princess are self-quarantining at home for 14 days, according to a ministry official who asked not to be identified.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Tuesday, February 25, 2020 7:41 PM

To: Richard Hatchett; Dr. Eva K Lee

Cc: Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Some updates. Will send the Hubei/Wuhan update later.

Singapore and Hong Kong continue to hold the line. I attached the case studies we did to monitor when they pulled the trigger in NPIs—lessons for us and for others.

Singapore (+1 case) 91 cases/0 deaths /7 in ICU (still 4 kids—none currently hospitalized/2 were asymptomatic

Hong Kong (+4) 85 cases/2 deaths/ 4 critical; 2 serious (still no kids reported)

Japan 170 cases/1 death/7 serious

Explosive growth in South Korea, Italy, and Iran

South Korea 977 cases/11 deaths/6 critical

99 out of 102 people in the psychiatric department of a hospital in South Korea tested positive for coronavirus infection.

https://www.bloomberg.com/news/articles/2020-02-22/nearly-all-patients-in-south-korean-psychiatric-ward-have-virus [bloomberg.com]

Yesterday, the Korean government raised the alert level from Orange(Level 3) to Red (Level 4) in order to prepare for a possible nation-wide transmission. It was a proactive decision taking into consideration the pattern and speed of transmission.

Italy 322 cases/11 deaths/114 in hospital; 35 in ICU

Public events in Veneto and Lombardy are banned - All schools in Lombardy and Veneto will be closed - Venice Carnival will be shut down, shows canceled at Milan La Scala

Iran 95 cases/16 deaths

Bahrain 23 cases/0 deaths

Bahrain closes all kindergartens, schools, universities, and training centers in the country for at least 2 weeks to prevent the spread of coronavirus

New countries today

- Algeria
- Austria
- Croatia
- Switzerland

Sent from Mail [go.microsoft.com] for Windows 10

From: Richard Hatchett

Sent: Tuesday, February 25, 2020 5:47 PM

To: Dr. Eva K Lee

Cc: Carter Mecher; Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan;

eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard

Subject: Re: Red Dawn Breaking Bad, Start Feb 24

Big news today from China is the continued drop in new cases (down to just over 500 today) and the number of provinces (>20) with no new cases at all. It remains to be seen if China can hold the line but its interventions ARE working to reduce transmission dramatically and Carter is right that Singapore and Hong Kong are demonstrating the value of an early, rapid, aggressive response. Whether the rest of the world, and the U.S., can mount a similarly effective response I do not know, but China has shown what can be done with NPIs.

+ Ryan Morhard from WEF. Welcome Ryan -

Sent from my iPhone

> On 25 Feb 2020, at 18:14, Dr. Eva K Lee <evalee-gatech@pm.me> wrote:
>
> It is unclear if S. Korea will be able to setup so many temp. beds as China. They're very slow in picking up social distancing and social awareness, proper NPI. Iran is way behind in terms of medical care. I fear they will have very high mortality.
>
> evalee-gatech@pm.me
>
> https://newton.isye.gatech.edu/DrLee/ [newton.isye.gatech.edu]
>
> mobile: 404-432-6835
>
> Sent with ProtonMail [protonmail.com] Secure Email.
>
> ------- Original Message -------
>
> On Tuesday, February 25, 2020 11:34 AM, Carter Mecher <cmecher@charter.net> wrote:
>
> > South Korea now has 977 cases and 10 deaths. They are about where Wuhan was on January 25th (so about 1 month behind). Wuhan was overwhelmed less than 2 weeks later. I would expect the same for South Korea with the epicenter being in Seoul.
> >
> > I think Iran is about at the same point (maybe even a little ahead) of South Korea. Tehran is another very large city that will likely becomes its epicenter.
> >
> > I see a few hopeful signs. Singapore and Hong Kong have done a great job thus far and have implemented NPIs very early. Both have great surveillance. They are holding the line. They are also small and islands. Japan on the other hand is struggling and hasn't been as aggressive as Singapore and Hong Kong.
> >
> > The other thing that gives me hope is what I see in Hubei and Wuhan. I realize the data is a little sketchy because China has gone back and forth with the definition of cases, but I tried to smooth that over by looking at cumulative hospitalization rates per 100,000 (like we do for flu). Hubei (and Wuhan is a city within Hubei) reports each day the current number of people in the hospital (# currently in severe condition, # in critical condition), cumulative number of hospital discharges, cumulative deaths, and cumulative cases. From this we can estimate cumulative hospitalizations and then rates. 92% of the cases have been hospitalized (up thru Feb 2nd 100% of the cases they reported were hospitalized). Knowing the number of cases in Wuhan, we have been estimating the number hospitalized assuming a similar % of the cases requiring hospitalization rate for Wuhan (that 92% of the cases are being hospitalized—that number is adjusted each day based on current data). So we really can't back out the Wuhan numbers from the Hubei numbers. The best we can do is compare Hubei totals (including Wuhan) with an estimate of Wuhan. This data is good enough to show that the Chinese appear to be slowing transmission outside of Wuhan (They were late to implement NPIs in Wuhan but were able to implement NPIs earlier in the epidemic outside of Wuhan because the outbreak had about a 2 week head-start in Wuhan).
> >
> > <E0B38B2300CE43F09DC37BFDDDB81F3C.png>
> >
> > We need to emulate the blue curve. If I could subtract Wuhan, this curve would be significantly lower.
> >
> > Remember the goals of NPIs.
> >
> > <CB432B1C32644B219725D229547BEDDC.png>

Sent from Mail [go.microsoft.com] for Windows 10

From: Richard Hatchett

Sent: Tuesday, February 25, 2020 10:30 AM

To: Carter Mecher; Dr. Eva K Lee

Cc: Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Death #4 from Diamond Princess.

https://twitter.com/BNODesk/status/1232124151789477889 [twitter.com]

From: Carter Mecher <cmecher@charter.net>

Sent: 25 February 2020 14:10

To: Dr. Eva K Lee <evalee-gatech@pm.me>

Cc: Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; cameron.hamilton@hq.dhs.gov; Richard Hatchett <richard.hatchett@cepi.net>; Caneva, Duane <duane.caneva@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <David.Wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

We should plan assuming we won't have enough PPE—so need to change the battlefield and how we envision or even define the front lines. The frontlines for mild illness need to pivot from our usual way of dealing with ILI in our clinics and ERs to non-face-to-face alternatives for the delivery of care (by phone/telehealth/home care). It means we need to shrink the problem and think of COVID patients in two groups: (1) those with mild enough disease that they can be managed thru self-care in the home; and (2) those will more severe disease that cannot be managed at home and likely require hospitalization. The first group needs to be managed by phone/telehealth with "prescriptions" for home isolation qD X 14 days (no refills) and home isolation for household members qD X 14 days (refills allowed). And only the second group should be coming to our ERs. It is why we need to look broadly at our healthcare system (even including minute clinics at CVS/Walgreens and stand alone urgent care centers). We need to start introducing this now.

Sent from Mail [go.microsoft.com] for Windows 10

From: Dr. Eva K Lee

Sent: Tuesday, February 25, 2020 8:47 AM

To: Carter Mecher

Cc: Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

This is extremely troubling that healthcare workers, including medical leaders are contracting the COVID-19 while caring for the infected. I am very worried about the supply-chain regarding all the protective gears, medical supplies and everything that is needed to combat this disease. The demand is rising and there is no guarantee that we can continue with the supply since the supply-chain has been disrupted.

I do not know if we have enough resources to protect all frontline providers.

evalee-gatech@pm.me

https://newton.isye.gatech.edu/DrLee/ [newton.isye.gatech.edu]

mobile: 404-432-6835

Sent with ProtonMail [protonmail.com] Secure Email.

------- Original Message -------

On Tuesday, February 25, 2020 8:37 AM, Carter Mecher <cmecher@charter.net> wrote:

> For those who cannot access Twitter but can access YouTube, here is the video.
>
> https://www.youtube.com/watch?v=4AX4dbXIsSw [youtube.com]
>
> Imagine if something like this happened in the US with an equivalent national leader (watching him coughing during a press conference, rubbing his nose, and wiping the sweat from his forehead, and leaning on the podium with one hand while someone else is speaking) and then learning afterwards that he is infected with COVID. That is what has happened in Iran.
>
> Sent from Mail [go.microsoft.com] for Windows 10
>
> ---
>
> **From:** Carter Mecher
>
> **Sent:** Tuesday, February 25, 2020 8:01 AM
>
> **To:** Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott
>
> **Cc:** Padget, Larry G
>
> **Subject:** RE: Red Dawn Breaking Bad, Start Feb 24
>
> Modeling isolation and social distancing (not)
>
> https://twitter.com/BNODesk/status/1232276183305400320 [twitter.com]
>
> Imagine how widespread it must be to see this?

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Tuesday, February 25, 2020 7:20 AM

To: Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott

Cc: Padget, Larry G

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Just a word of caution. Here is what those numbers would mean. These are the projections using an attack rate of 30% (could send you the model in Excel and you can plug in whatever attack rate you like). I suspect that those CFRs are inflated because of case ascertainment issues (the actual denominator is much larger). The most recent background annual death data in the US (US Vital Statistics) is from 2017. It is useful to have those numbers of comparison.

I think those CFRs are on the high side., but don't have anything better to offer.

The best data we have for estimating CFR will be from the cruise ship, where we have a circumscribed population. That data is extremely valuable because the cruise ship had a crew of 1,045 (young and health) and 2,666 passengers (elderly). It will be important to look at each group separately. The data that I am aware of (all obtained thru open sources) is shared below this table).

AGE	2017 Census	2017 All Cause Mortality per 100,00	Actual 2017 All Cause Deaths	CFR	Projected 2019-nCoV Deaths	Ratio Projected Deaths to 2017 All Cause Deaths
<1 year	3,853,472	567.0	22,335	0.0%	0	0.00
1-4 years	16,085,388	24.3	3,880	0.0%	0	0.00
5 to 9 years	20,304,238	11.6	2,354	0.0%	0	0.00
10 to 14 years	20,778,454	15.5	3,217	0.2%	12,467	3.88
15 to 19 years	21,131,660	51.5	10,886	0.2%	12,679	1.16
20 to 24 years	22,118,635	95.6	21,139	0.2%	13,271	0.63
25 to 29 years	23,370,460	121.0	28,276	0.2%	14,022	0.50
30 to 34 years	21,972,212	145.4	31,939	0.2%	13,183	0.41
35 to 39 years	21,231,997	173.8	36,901	0.2%	12,739	0.35
40 to 44 years	19,643,373	218.4	42,895	0.4%	23,572	0.55
45 to 49 years	20,973,858	313.2	65,698	0.4%	25,169	0.38
50 to 54 years	21,401,094	488.0	104,444	1.3%	83,464	0.80
55 to 59 years	22,007,956	736.5	162,098	1.3%	85,831	0.53
60 to 64 years	19,987,702	1,050.2	209,908	3.6%	215,867	1.03
65 to 69 years	16,836,381	1,473.5	248,087	3.6%	181,833	0.73
70 to 74 years	12,847,065	2,206.9	283,523	8.0%	308,330	1.09
75 to 79 years	8,741,261	3,517.8	307,498	8.0%	209,790	0.68
80 to 84 years	5,965,290	5,871.7	350,261	14.8%	264,859	0.76
85 years and over	6,468,682	13,573.6	878,035	14.8%	287,209	0.33
Total population	**325,719,178**	**863.8**	**2,813,503**	**1.8%**	**1,764,286**	**0.63**

Attack Rate	30%

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the			

	infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tested
11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		1,219 tested; 73 asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,723 tested; 19 seriously ill
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,066 tested; 28 seriously ill; 322 asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan	691	4	

Total passengers and crew:

691 cases (~50% asymptomatic) / 28 seriously ill (4%) / 4 deaths (a lagging measure)

So overall, a lower limit CFR of 0.6%--this includes the young healthy crew members and the elderly passengers.

Assuming the number of seriously ill approximates the % of cases requiring ICU care (4%) and the typical mortality rates for patients with pneumonia admitted to the ICU are 15%-50%, then CFR would be estimated to be0.6%-2% overall. The ICU data is sketchy (last data point I have is from Japan only on Feb 20). If someone has actual numbers of patients admitted to the ICU, just plug in and make your won estimate.

Americans:

Total Americans 434

- 329 evacuated
- 61 remained on board
- 44 in hospitals in Japan

80 cases (44 hospitalized in Japan/36 cases in US)

Media has only reported on a single American who was in the ICU in Japan (that is from Feb 11). There is nothing being reported in the media on current numbers of cases in ICU of Americans in the US or Japan. If anyone has that data (but cannot share it), would suggest you take that number divide it by the number of known American cases (80) to estimate a % of cases requiring ICU care. Multiply that number by 15%-50% to get a range of CFRs.

A while back I shared some estimates based upon the data from the cruise ship and compared to the 2005 HHS projections of a severe pandemic. Just to put those numbers in perspective. The 2005 estimates were that 30% of the population would become ill (30% attack rate); 11% of those who became ill would require hospitalization; 1.6% of those who became ill would require ICU care; and 2% of those who became ill would die.

We are in the ballpark.

Sent from Mail [go.microsoft.com] for Windows 10

From: Martin, Gregory J

Sent: Tuesday, February 25, 2020 6:04 AM

To: Walters, William; cameron.hamilton@hq.dhs.gov; Richard Hatchett;

Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott; Carter Mecher

Cc: Padget, Larry G

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Wil,

This is what I've been using in our provider PowerPoint

Greg

Gregory J. Martin, MD

Chief, Tropical Medicine-Infectious Diseases

Bureau of Medical Services

US Department of State

2401 E St NW (SA-1)

Washington, DC 20522

BlackBerry while traveling: 202 230-0704

MartinGJ@state.gov

From: Walters, William <WaltersWA2@state.gov>

Sent: Tuesday, February 25, 2020 6:56 PM

To: cameron.hamilton@hq.dhs.gov; Richard Hatchett <richard.hatchett@cepi.net>; Caneva, Duane <duane.caneva@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Martin, Gregory J <MartinGJ@state.gov>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <David.Wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee-gatech@pm.me>; Lee, Scott <Scott.Lee@hhs.gov>; Carter Mecher <cmecher@charter.net>

Subject: Re: Red Dawn Breaking Bad, Start Feb 24

Colleagues,

Does anyone have a case fatality rate projection broken down by age?

William A. Walters, M.D., MBA

Executive Director and

Managing Director for Operational Medicine

Bureau of Medical Services

U.S. Department of State

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wwalters@state.ic.gov

From: Carter Mecher <cmecher@charter.net>
Sent: Monday, February 24, 2020 4:58:53 PM
To: cameron.hamilton@hq.dhs.gov <cameron.hamilton@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Caneva, Duane <duane.caneva@hq.dhs.gov>; rjglassjr@gmail.com <rjglassjr@gmail.com>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; Walters, William <WaltersWA2@state.gov>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU <jwleduc@utmb.edu>; rbaric@email.unc.edu <rbaric@email.unc.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Martin, Gregory J <MartinGJ@state.gov>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov <eric.mcdonald@sdcounty.ca.gov>; Wade, David <David.Wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov <david.gruber@dshs.texas.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee-gatech@pm.me>; Lee, Scott <Scott.Lee@hhs.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Several new countries announced first confirmed cases

Afghanistan

Bahrain

Iraq

Kuwait

Oman

Sent from Mail [gcc01.safelinks.protection.outlook.com] for Windows 10

From: Carter Mecher

Sent: Monday, February 24, 2020 1:51 PM

To: cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; Walters, William (STATE.GOV); HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Martin, Gregory J (MartinGJ@state.gov); Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott (OS/ASPR/EMMO)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

The number of Americans confirmed positives from the cruise ship evacuated to the US was incorrect, it should have been 36

Sent from Mail [gcc01.safelinks.protection.outlook.com] for Windows 10

From: Richard Hatchett

Sent: Monday, February 24, 2020 1:28 PM

To: Carter Mecher; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; Walters, William (STATE.GOV); HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; cameron hamilton (hamiltoncd@state.gov); Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Martin, Gregory J (MartinGJ@state.gov); Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott (OS/ASPR/EMMO)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Interesting account from China –

https://www.huffpost.com/entry/coronavirus-covid19-life-china-precautions_n_5e4eaa73c5b6df1e8be3d4d7
[gcc01.safelinks.protection.outlook.com]

From: Carter Mecher <cmecher@charter.net>

Sent: 24 February 2020 18:18

To: Caneva, Duane <duane.caneva@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; cameron hamilton (hamiltoncd@state.gov) <hamiltoncd@state.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Martin, Gregory J (MartinGJ@state.gov) <MartinGJ@state.gov>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee-gatech@pm.me>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Headlines:

Markets In Total Panic Mode As Coronavirus Cases Jump

"It's Total Panic" - Store-Shelves

Empty As Virus-Spread Sparks Panic-Buying Food & Masks Across Italy

Sent from Mail [gcc01.safelinks.protection.outlook.com] for Windows 10

From: Carter Mecher

Sent: Monday, February 24, 2020 1:01 PM

To: Caneva, Duane; Richard Hatchett; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; Walters, William (STATE.GOV); HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; cameron hamilton (hamiltoncd@state.gov); Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Martin, Gregory J (MartinGJ@state.gov); Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott (OS/ASPR/EMMO)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

-Singapore +1 over the past 3 days (90 cases/0 deaths) 38 currently hospitalized, 7 in ICU

-Hong Kong now up to 81 cases/2 deaths

-South Korea continues to have explosive growth now up to 833 cases/7 deaths

-Japan is up to 156 cases/2 deaths

> **According to the Ministry of Health, Labor and Welfare, two new cases of infection have been confirmed on the 24th, including employees of the Ministry of Health, Labor and Welfare and quarantine officers who responded on a cruise ship. 7 staff members of the Ministry of Health, Labor and Welfare and quarantine officers have been confirmed +.**

-Italy has 227 cases/7 deaths

-Iran 61 cases/12 deaths

Sent from Mail [gcc01.safelinks.protection.outlook.com] for Windows 10

From: Caneva, Duane

Sent: Monday, February 24, 2020 12:30 PM

To: Richard Hatchett; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; Walters, William (STATE.GOV); HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; cameron hamilton (hamiltoncd@state.gov); Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Martin, Gregory J (MartinGJ@state.gov); Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Redd, John (OS/ASPR/SPPR); Carter Mecher; Yeskey, Kevin; Lee, Scott (OS/ASPR/EMMO)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Singapore COVID-19 Guidance Page:

https://www.gov.sg/article/covid-19-sector-specific-advisories [gcc01.safelinks.protection.outlook.com]

Best,

Duane

From: Caneva, Duane

Sent: Monday, February 24, 2020 12:28 PM

To: Subject: Red Dawn Breaking Bad, Start Feb 24

Importance: High

All,

This is a new Red Dawn Email String. Please use this one going forward.

Best,

Duane

Duane C. Caneva, MD, MS

Chief Medical Officer

Department of Homeland Security

202-254-6901 (o)

202-821-5374 (c)

Duane.Caneva@hq.dhs.gov

DCaneva@dhs.ic.gov

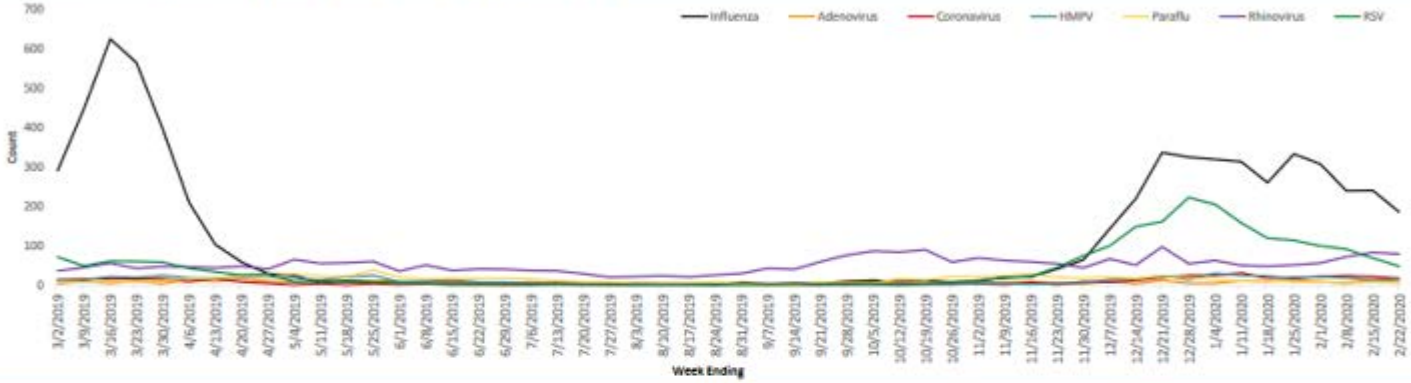
Executive Assistant: Nichole Burton,
nichole.burton2@associates.hq.dhs.gov, 202-254-8284

<2020_02_19_MQL_SARS-CoV-2_CLEARED FOR RELEASE.PDF>

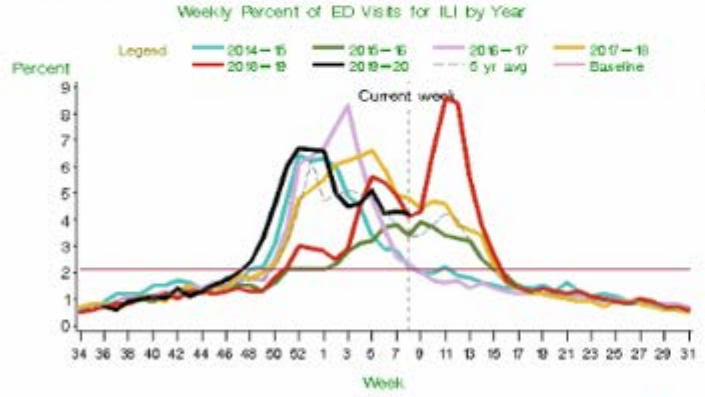
Public Health - Seattle & King County

Summary of Influenza Syndromic and Laboratory Surveillance

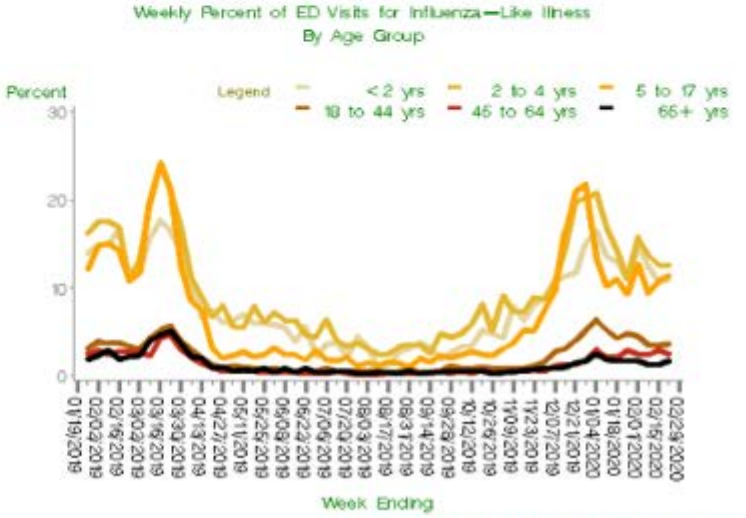
Influenza and other respiratory pathogens, PCR testing only (NREVSS)



King County syndromic surveillance



Note: The change from ICD–9 to ICD–10 codes in October 2015 may impact trends.
Last updated Feb 23, 2020 , 'current week' is week ending Feb 22, 2020
Baseline: Mean % ILI during non–flu weeks for previous three seasons, adding two standard deviations.
A non–flu week is a period of 2+ consecutive weeks where each one accounted for < 2% of the season's total number of specimens that tested positive for influenza by PCR.



ALLHOSPITALS, Last Updated Feb 26, 2020

From:	Elsenboss, Carina
To:	Schaeffer, Cyndi; Hayes, Patty
Subject:	Fwd: Your presentation to Dow
Date:	Thursday, February 27, 2020 8:45:06 AM
Attachments:	COVID_Dow Briefing_2_26_20.pdf

FYI

Carina Elsenboss
Public Health - Seattle & King County
o: 206.263.8722 I c: 206.255.7108 I carina.elsenboss@kingcounty.gov

From: Elsenboss, Carina
Sent: Wednesday, February 26, 2020 6:09:47 PM
To: Worsham, Dennis <Dennis.Worsham@kingcounty.gov>; Bauer, Brenda <Brenda.Bauer@kingcounty.gov>
Subject: RE: Your presentation to Dow

Hello –

Here you go, sorry for the delay.

-Carina

From: Worsham, Dennis <Dennis.Worsham@kingcounty.gov>
Sent: Wednesday, February 26, 2020 1:25 PM
To: Bauer, Brenda <Brenda.Bauer@kingcounty.gov>
Cc: Elsenboss, Carina <Carina.Elsenboss@kingcounty.gov>
Subject: RE: Your presentation to Dow

Hello Brenda. I am cc'ing Carina who can send you the final edition.

Thanks

Dennis E. Worsham ***(he/him)***
Prevention Division Director
Public Health – Seattle & King County
P - (206) 263-8158

From: Bauer, Brenda <Brenda.Bauer@kingcounty.gov>
Sent: Wednesday, February 26, 2020 1:09 PM
To: Worsham, Dennis <Dennis.Worsham@kingcounty.gov>
Subject: Your presentation to Dow
Importance: High

Can you pls send me an e-copy of the presentation you just gave to Dow? Thanks, Brenda

Brenda Bauer | Deputy Chief Operating Officer | Executive Office, King County | 206-477-3580

Coronavirus Disease 2019 (COVID-19) Response

Executive Constantine Briefing
February 26, 2020

NOT FOR PUBLIC DISTRIBUTION * FOR BRIEFING PARTICIPANTS ONLY

Outline

- International & national situation update
- Update on severity of COVID-19
- Community mitigation strategies
- Healthcare preparedness

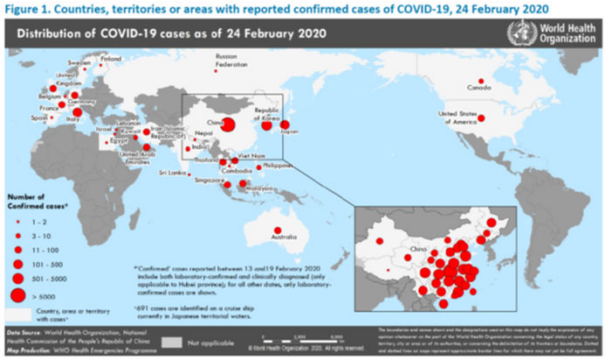
NOT FOR PUBLIC DISTRIBUTION * FOR BRIEFING PARTICIPANTS ONLY

International Situation

**numbers current as of 2/24/20*

- Total confirmed cases: 79,331
- Total confirmed deaths: nearly 2,600
  - 77,262 cases from mainland China (2595 deaths)
  - 2069 cases from 29 other countries (23 deaths)

Figure 1. Countries, territories or areas with reported confirmed cases of COVID-19, 24 February 2020



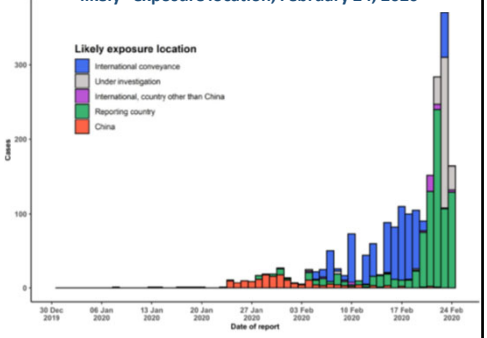
Source: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

International Situation

**numbers current as of 2/24/20*

- Reporting sustained community transmission (Level 2/3 alert)
  - China
  - Japan
  - South Korea
- Reporting some community transmission (Level 1 alert)
  - Hong Kong
  - Iran
  - Italy
- Apparent community transmission
  - Singapore
  - Taiwan
  - Thailand
  - Vietnam

Epidemic Curve of COVID-19 cases (n=2069) identified outside of China, by date of report and likely exposure location, February 24, 2020



Source: https://www.cdc.gov/coronavirus/2019-ncov/travelers/index.html
https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

Local Situation

**numbers current as of 2/24/20*

- **USA**
  - 14 confirmed cases
  - 39 confirmed cases – infected overseas
    - Diamond Princess Cruise Ship
    - Others evacuated out of China
  - **Washington State**
    - 1 confirmed case
  - **King County**
    - 268 persons assessed
    - 17 persons tested (all neg)
    - 488 persons have been placed on watch

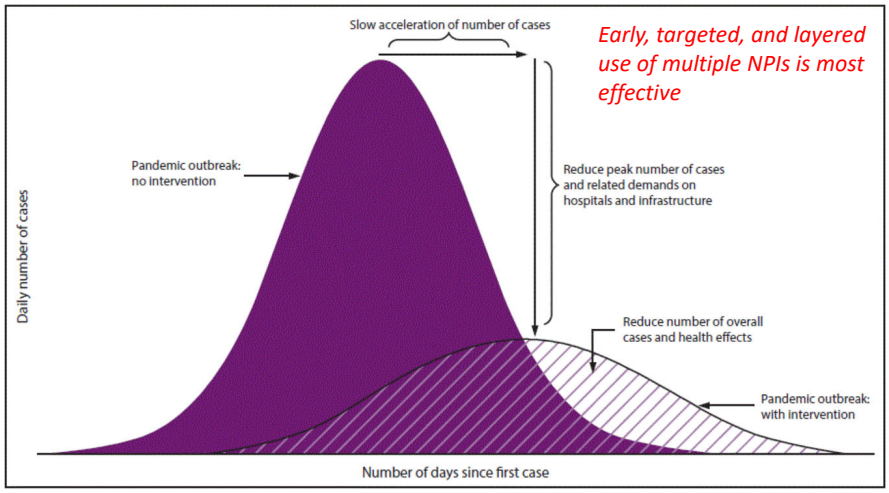
5

Risk Assessment

- "Tremendous" public health threat to the United States
- Low health risk for COVID-19 to the general public in the United States and Washington at this time
- Strategy now is to slow the spread of the virus (i.e., contain the virus) so that we have time to:
  - Prepare the healthcare system and the general public
  - Better characterize the infection to guide public health recommendations and development of medical countermeasures including diagnostics, therapeutics, and vaccines
- Community spread very likely in Washington

Source: https://www.cdc.gov/coronavirus/2019-nCoV/summary.html#risk-assessment

Goals of Community Mitigation for Pandemic Influenza (Non-pharmaceutical Interventions [NPIs])



Source: CDC. MMWR 2017;66(1):1–34. (https://www.cdc.gov/mmwr/volumes/66/rr/rr6601a1.htm

Washington State Department of Health (DOH) Nonpharmaceutical Intervention (NPI) Implementation Guide

TABLE 1. Non-pharmaceutical Interventions Matrix

Assessment*		Intervention	Expected Result	Example Implementation	Begin NPI use	NPI Type
Transmissibility	Clinical Severity					
1	1-4	1. Increase handwashing and use of alcohol-based sanitizer	Reduce probability of direct and indirect transmission of the disease by disinfecting hands	Conduct public messaging and media campaigns to encourage and educate the public and to promote enhanced hygiene and social distancing measures. Targeted messaging to major employers may be beneficial in encouraging the enhance behaviors in the workplace.	Y N	Personal
1	1-4	2. Respiratory Hygiene/Cough Etiquette	Reduce probability of droplet transmission of the disease by reducing the range of respiratory droplets and aerosols		Y N	
1	1-4	3. Keep distance from others (>6 feet)	Reduce probability of direct and droplet transmission by reducing the number of interpersonal contacts		Y N	Community
1	1-4	4. Frequently clean and disinfect personal surfaces (doorknobs, phones, keyboards, etc.)	Reduce the probability of indirect transmission by disinfecting fomites		Y N	Environmental
1	1-4	5. Remain home through the duration of respiratory illness	Reduce probability of transmission by preventing contacts between well and sick people		Y N	Personal
2	2 - 5	6. Voluntary isolation of sick persons	Reduce probability of transmission by preventing contacts between well and sick people	Health officers, medical providers, and public health personnel provide direct education to cases and contacts asking that they remain home for an established period of time.	Y N	
2	2 - 5	7. Voluntary quarantine of contacts of sick persons	Reduce probability of transmission in the event that the contact becomes contagious before symptoms developed.		Y N	
3	5 – 6.5	8. Involuntary isolation of sick persons	Reduce probability of transmission by preventing contacts between well and sick people	Health officers issue emergency detention orders or seek court orders for involuntary detention in order to involuntarily isolate or quarantine those who are uncooperative	Y N	Community
3	5 - 6.5	9. Involuntary quarantine of contacts of sick persons	Reduce probability of transmission in the event that the contact becomes contagious before symptoms develop		Y N	
4	5 - 7	10. Order cancellation of major public and large private gatherings	Reduce probability of transmission by reducing the number of the interpersonal contacts	Health officer orders to suspend all gatherings above a certain size with the intention to reduce risk of disease transmission if a subset of that population may be sick	Y N	
4	5 - 7	11. Order closure of schools, childcare facilities, workplaces, and public buildings	Reduce probability of transmission by reducing the number of the interpersonal contacts		Y N	
5	5.5 - 7	12. Prevent non-emergency travel outside of the home	Reduce probability of transmission by reducing the number of the interpersonal contacts	Health officer orders to halt non-emergency travel and remain indoors in order to protect those not yet sick.	Y N	
5	5.5 - 7	13. Establish a cordon sanitaire	Contain the disease within specific geographical boundaries.		Y N	

*Assessment levels are based on the following table (Table 2).

Considerations for Implementing Community NPIs

- Transmissibility / Clinical severity
- Degree of spread
- State of the healthcare system (e.g., ventilator shortages)
- Effectiveness of the intervention
  - Little known about role of COVID-19 transmission in kids
  - Limited evidence on implementing social distancing measures in workplace and mass gatherings alone; some evidence supports implementing multiple social distancing measure in combination
- School closures
  - Kids on free and reduced lunch program
  - Healthcare workers staying home to care for kids
- Economic and social impacts
- Feasibility of implementation
- Public acceptance / ethical considerations

Authorities -- Local

- Local health officer and local board of health have authority to control spread of infectious diseases within their jurisdiction
  - This includes issuing orders to cancel events and to close schools and child care centers
- Local governments have police power to protect the public health under the US Constitution's 10th Amendment, granting authority to implement restrictions on private rights for the sake of public welfare, order, and security.
  - This might include restricting non-emergency travel outside the home and establishing cordon sanitaire
- Key Stakeholders: local elected officials (such as mayor, city council, county council, and/or county executive), emergency managers, school and child care administrators, local law enforcement, impacted businesses, proprietors, cultural and religious leaders, event sponsors and event organizers, etc.

Authorities -- State

- In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as the local health officer to control and prevent disease.
  - This might include issuing orders to cancel events and to close schools and child care centers
- Governor has broad authority to proclaim state of emergency to preserve life, health, property, or the public peace (RCW 43.06.010).
  - Governor may set curfews; prohibit people on streets and open areas; limit use of streets, highways or public ways; or prohibit travel (RCW43.06.220)
- Key Stakeholders: local elected officials (such as mayor, city council, county council, and/or county executive), private sector, emergency managers, local law enforcement, school superintendents, boards of education, health care, transportation agencies, etc.

Authorities -- Federal

- The federal government has independent authority when emergencies cross state and national borders.
- HHS Secretary may declare a public health emergency under 42 U.S.C. § 247d, which is a way to get Congress to fund a public health emergencies account, but declarations are often made without associated Congressional funding.
- The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Healthcare System Planning

- Accelerating planning efforts in 5 key areas
  - Assessing the "health of the healthcare system" (e.g., hospital/ICU beds, staff, PPE, ventilators)
  - Maximizing and expanding capacity
    - ↓ demand (triage lines, online assessments, telemedicine)
    - ↑ supply (surge plans, difficult to discharge patients, ACS)
  - Conservation strategies / Crisis Standard of Care
    - PPE conservation underway
  - Fatality management
  - Communication
- "Call to Action" webinar with hospital, healthcare system and health plan executives on February 28, 2020

From: Duchin, Jeff
To: Bell, Michael MD (CDC/DDID/NCEZID/DHQP); Dan Jernigan (dbj0@cdc.gov); Armstrong, Gregory (CDC/DDID/NCEZID/OD); Pillai, Satish K. (CDC/DDID/NCEZID/DPEI)
Cc: Kay, Meagan
Subject: Fwd: exposures in hospitals
Date: Sunday, March 1, 2020 7:16:15 AM

We are having a very serious challenge related to hospital exposures and impact on the healthcare system. Would be great to have a call to discuss. Will be meeting with your team here this morning and then maybe we can chat after that.

_____ Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: John B. Lynch <jblynch@uw.edu>
Sent: Sunday, March 1, 2020 7:09:22 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>; Kawakami, Vance <Vance.Kawakami@kingcounty.gov>
Subject: exposures in hospitals

Good morning my friends,

Quick update:

- Large Evergreen exposure (you are well aware)
- Large Valley exposure (pretty sure you are aware). We developed a plan last night, gong to isolate as many HCW as possible, but can't keep ICU open without that exposed pool. So, for the moment, these medium risk individuals are at work and wil be conducting 2x daily health screening. More to come today.
- HMC: last night I learned about a death in a pt presenting with sepsis from Life Center Kirkland eartlier this week. My assumption is that he had COVID-19. As of 5 minutes ago, I have a symptomatic ICU physician who took care of him. We are working on mitigation today. I suspect that we will not be able to follow current CDC recs for exposed HCWs either. We are going to try to get swabs on the doc now and path is trying to get tissue to test.

As you migh imagine, I am very concerned about the hospitals at this point.

Available to discuss anytime if helpful. You have my number.

John

From:	Pottebaum, Nic D. EOP/WHO
To:	Pottebaum, Nic D. EOP/WHO
Cc:	Hoelscher, Douglas L. EOP/WHO; Swint, Zachariah D. EOP/WHO; Imhoff, Olivia P. EOP/WHO
Subject:	HIGHLIGHTS | President Trump and Members of the Coronavirus Task Force Hold a News Conference
Date:	Wednesday, February 26, 2020 7:43:02 PM
Attachments:	image005.png image006.png

THE WHITE HOUSE

State Leaders and Staff,

This evening, President Donald J. Trump and members of the Coronavirus Task Force briefed reporters on the extensive efforts underway to continue effectively combatting coronavirus. You can see the full video the news conference here. Below you find highlights from that news conference.

During the news conference, Vice President Mike Pence noted the State and local partnership saying, "And we'll also be continuing to reach out to governors, state and local officials. In fact, in the recent days, the White House met with over forty state, county and city health officials from over 30 states and territories to discuss how to respond to this -- to the potential threat of the coronavirus."

You can find Secretary Alex Azar's remarks at the February 25th HHS press briefing on the Administration's response to COVID-19 here.

You can find the latest information at CDC.gov. CDC's Twitter account is also a great resource to echo – you can find it here: twitter.com/CDCgov.

Source

HIGHLIGHTS | President Trump and Members of the Coronavirus Task Force Hold a News Conference

This evening, the President and members of the task force briefed reporters on the extensive efforts underway to continue effectively combatting coronavirus.

THE PRESIDENT'S AGGRESSIVE RESPONSE

- PRESIDENT TRUMP: "Because of all we've done, the risk to the American people remains very low. We have the greatest experts in the world, really in the world, right here. The people that are called upon by other countries when things like this happen. We're ready to adapt and we're ready to do whatever we have to as the disease spreads, if it spreads."
- VICE PRESIDENT PENCE: "President Trump's made clear from the first days of this Administration, we have no higher priority than the safety, security, health and well-being of the American people. And from the first word of an outbreak of the coronavirus, the President took unprecedented steps to protect the American people from the spread of this disease."
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Please let me know if you have any questions.

Thanks,
Nic

--
Nicholas D. Pottebaum
Special Assistant to the President and Deputy Director
White House Office of Intergovernmental Affairs
O: 202-456-2132 | C: 202-881-7803| E: Nicholas.D.Pottebaum@who.eop.gov

THE WHITE HOUSE

The White House
@WhiteHouse

President @realDonaldTrump just held a news conference on the coronavirus:

"The number-one priority from our standpoint is the health and safety of the American people."

From:	Pottebaum, Nic D. EOP/WHO
To:	Pottebaum, Nic D. EOP/WHO
Subject:	HIGHLIGHTS | President Trump and Members of the Coronavirus Task Force Hold a News Conference
Date:	Wednesday, February 26, 2020 7:43:07 PM
Attachments:	image005.png image006.png

THE WHITE HOUSE

State Leaders and Staff,

This evening, President Donald J. Trump and members of the Coronavirus Task Force briefed reporters on the extensive efforts underway to continue effectively combatting coronavirus. You can see the full video the news conference here. Below you find highlights from that news conference.

During the news conference, Vice President Mike Pence noted the State and local partnership saying, "And we'll also be continuing to reach out to governors, state and local officials. In fact, in the recent days, the White House met with over forty state, county and city health officials from over 30 states and territories to discuss how to respond to this -- to the potential threat of the coronavirus."

You can find Secretary Alex Azar's remarks at the February 25th HHS press briefing on the Administration's response to COVID-19 here.

You can find the latest information at CDC.gov. CDC's Twitter account is also a great resource to echo – you can find it here: twitter.com/CDCgov.

Source

HIGHLIGHTS | President Trump and Members of the Coronavirus Task Force Hold a News Conference

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THE PRESIDENT'S AGGRESSIVE RESPONSE

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From: Health EOC
To: Health EOC
Subject: HMAC Snapshot #29: Novel Coronavirus
Date: Saturday, February 29, 2020 5:14:15 PM
Attachments: image001.png

Public Health
Seattle & King County

Health and Medical Area Command (HMAC) Snapshot #29: Novel Coronavirus

Mission # 20-0265

TO:

PHSKC Leadership & COOP Leads
PHSKC Preparedness Team
PHSKC Communications Team
PHSKC EMS Division
HMAC Responders
NWHRN
Seattle OEM
Zones 1 and 3 Emergency Management Coordinators
King County OEM
Washington State DOH

HMAC ACTIVATION STATUS:

Level 1 – Emergency Response Operations (Full HMAC Activation)

Incident Overview:

As of 4PM, February 29th, 2020, Public Health-Seattle & King County's outbreak summary:

King County	Since 1/21/2020
# persons assessed for COVID-19	382
# Persons Under Investigation (PUIs) tested/pending results for COVID-19	35
# PUIs tested negative for COVID-19	21
# PUIs pending lab testing results	14
# confirmed cases among KC residents	5

White House announces new travel restrictions in response to coronavirus spread

New restriction expand existing travel restrictions to include any foreign national who has visited Iran within the last 14-days. The U.S. State Department has increased the travel advisory for Italy and South Korea to Level 4 advising U.S. personnel not to travel to specific regions in those countries that are most affected by the novel coronavirus. For more information visit: https://www.cdc.gov/coronavirus/2019-ncov/travelers/index.html

Washington State issues state of emergency in response to coronavirus cases

Governor Jay Inslee today declared a state of emergency in response to new cases of COVID-19,

directing state agencies to use all resources necessary to prepare for and respond to the outbreak. For more information visit: https://www.governor.wa.gov/news-media/inslee-issues-covid-19-emergency-proclamation

From Public Health – Seattle & King County's blog: https://publichealthinsider.com/2020/02/29/first-death-due-to-novel-coronavirus-covid-19-in-a-resident-of-king-county/

Public Health – Seattle & King County, Washington State Department of Health and the Centers for Disease Control and Prevention (CDC) are reporting today three presumptive positive cases of novel coronavirus (COVID-19), including one person who died.

Two of the confirmed cases are associated with LifeCare nursing facility in Kirkland, King County, Washington:

- One is a health care worker from LifeCare. She is a woman in her 40's, is currently in satisfactory condition at Overlake Hospital, and she has no known travel outside the United States.
- The second case, a woman in her 70's, is a resident at LifeCare and is in serious condition at EvergreenHealth Hospital.
- In addition, over 50 individuals associated with LifeCare are reportedly ill with respiratory symptoms or hospitalized with pneumonia or other respiratory conditions of unknown cause and are being tested for COVID-19. Additional positive cases are expected.

The death occurred in a patient at EvergreenHealth Hospital but was not a resident of the long-term care facility.

Public Health – Seattle & King County is current working with LifeCare to provide care for ill patients while protecting uninfected patients. The CDC is sending a team of epidemiologists to King County to support our efforts to identify, isolate and test all of those who may be at risk because of these new cases.

Public Health is at the very beginning stages of this investigation and new details and information will emerge over the next days and weeks.

"This is a tragic loss of life and we share our heartfelt condolences with the family," said Dr. Jeff Duchin, Health Officer for Public Health – Seattle & King County. "While the vast majority of cases of COVID-19 are believed to be mild, the virus can be a very serious infection that can lead to death. Protecting the health of our community and supporting the care of health care workers is our top priority."

"I know this news is alarming, but we are doing everything possible to make sure the public is safe. Earlier today I declared an emergency proclamation directing state agencies to use all resources necessary to prepare for and respond to the outbreak. The best thing people can do to help is remain informed and take routine health precautions," Gov. Jay Inslee said. "Our public health officials at the state, local and national levels are working diligently on this, coordinating efforts and keeping the public safe and informed."

"We are fortunate to have one of the best public health agencies in the nation, and we are pulling all available resources into the fight against COVID-19. King County is reviewing all government operations, and we are standing up an Emergency Operations Center to respond appropriately across all agencies and public services. I urge businesses and families to plan and take precautions, referring to Public Health for best practices," said King County Executive Dow Constantine.

For more information about COVID-19 in King County visit: www.kingcounty.gov/coronavirus

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Public Health

Seattle & King County

From:	Ulrey, Ingrid
To:	Adriane Casalotti; Eli Briggs; Ian Goldstein; Chrissie Juliano
Cc:	Hayes, Patty; Jaime Bodden; Putney, April; Jeff Bjornstad; Nina Collier; Duchin, Jeff; Worsham, Dennis; Elsenboss, Carina; Schaeffer, Cyndi; Apa, James; Burkland, Anne
Subject:	Hill Visits - Report
Date:	Wednesday, February 26, 2020 9:59:16 PM
Attachments:	PHSKC Federal Issues 2-pager 2020.pdf COVID_Response_TwoPager_022120.pdf

Hi Team NACCHO - thank you for organizing a great hill day, so timely…

Below is a report on the visits that Patty, Jaime and I completed with the Washington State delegation staff / members.

Patty / Jaime – please fill in any key info missing in this report.

I am including our King County federal lobby team, and our lead staff on COVID-19 response on this message and attaching our two PHSKC specific leave-behinds.

Thanks everyone,

Ingrid

Ingrid Ulrey, MPP (she/her)
Policy Director
Public Health – Seattle & King County
Phone: 206.477.7019
Ingrid.Ulrey@kingcounty.gov

Wednesday Feb 26, 2020 - WA State Delegation Hill Visits

Overall - Everyone we met with had a very, very, high level of interest in COVID-19 response / wanted to understand the details of our LHJ response activities / pandemic planning. Many asked about pain points with coordination with Fed agencies (like our ask to CDC for local rapid test kits), asked us to keep them posted on these.

All supportive of emergency supplemental funding. We stressed that this funding should:

1. **Be sufficient in scope**, robust, not one-time and not based on taking revenue away from other PH priorities
2. **Be flexible to dial up or dial down** depending on how outbreak unfolds (not require political process if/when need expands)
3. **Include set-aside for state and local response** – get to the boots on the ground / LHJs /not rely on trickle down from CDC

In most meeting we also talked about other priority PH issues (overall CDC funding, HIV,

Opioids, ACA/Public Charge, Health Equity/REACH)

Meeting reports:

9:30 Rep. Jayapal
Patty Hayes, Jaime Boden and Ingrid Ulrey met with Jazmine Garcia-Delgadillo, Health Fellow
Strong interest in COVID-19 response, especially anti-stigma work.
Sent follow up question about PHSKC burn-rate which we will respond to.
Very interested in ACA, public charge and health equity work (REACH).

10:15 Rep Schrier
Patty Hayes, Jaime Boden and Ingrid Ulrey met with Alicia Bissonnette, Health Policy Advisor,
Also had a few minutes with Rep. Shrier herself.
Congresswoman very engaged, getting a lot of questions on COVID-19 because she is MD, super interested in local response activities,
very supportive of robust federal funding with set aside for local response.

11:00 Rep. DelBene
Patty Hayes and Jaime Boden met with Kyle Hill, Legislative Director.
Kyle asked for support in framing questions for Azar.
Del Bene interested in local event (anti-stigma) perhaps with Kilmer.

11:00 Rep. Smith
Ingrid Ulrey met with Connor Stubbs, Legislative Director.
Strong support for robust funding / set aside for locals
Also interested in doing local event in near future
Very focused on ACA anniversary / concerned about Public Charge chilling effect

12:00 Andi Fristedt, HELP Committee
Patty Hayes, Jaime Boden, Ingrid Ulrey and Adriane Cassalotti met with Andi Fristedt, Alex Keenan, two other Approps staffers (Meghan Mott / Terri Curtin?)
Deep, 1-hour conversation about pandemic planning at local level, authority of LHJs / other levels of government and federal funding – including concepts for modeling / projecting necessary funding for local response, mechanisms for flexibility to address hot spots.

12:45pm CDC – Patty met with CDC officials regarding Opioid funding.
Great discussion, Patty raised needs / gaps related to MOUD in jails and also approaches on Meth.

1:00 Sen. Cantwell

Jaime Boden and Ingrid Ulrey met with Anna Conroy, Health LA who has taken over for Nico Jansen. She is taking lead on COVID from Murray / HELP staff. Cantwell particularly interested in issues related to commerce. Anna also very engaged in discussion on HIV, ACA, Opioids and Health Equity.

2:00 Rep. Heck

Jaime Boden met with Rep. Heck himself, who is growing a retirement beard.
Very supportive on all fronts.

3:00 Rep. Kilmer

Jaime Boden met with Rep. Kilmer himself. Also super supportive, concerned about stigma, interested in event with DelBene.

Public Health – Seattle & King County

"Protecting and Improving the health and well-being of King County"

Public Health – Seattle & King County (PHSKC) is the largest health jurisdiction in Washington State and the 13th largest in the U.S. We serve a rapidly growing population of over 2 million people. Our residents represent over 41% of Washington's population growth. One in five families speak a language other than English at home.

Providing services in a large, metro environment means that we often have complex needs and greater system challenges in delivering care. Federal under-investment and strained local and state budgets have resulted in many essential public health services being underfunded – including critical services such as communicable disease control, chronic disease / injury prevention, and emergency preparedness. Sustainable federal partnership is critical to protecting the health of our communities and workforce.

2020 Federal Priorities:

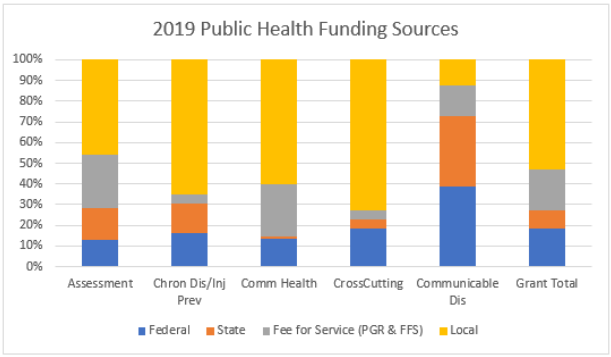
- Emergency funding for COVID-19 response
- Increase CDC funding 22% by 2022
- Protect and defend the ACA
- End the HIV Epidemic

Examples of how we put federal dollars to work:

- Opioid crisis response
- Chronic disease and injury prevention
- Immunization campaigns
- Maternal and child health
- Healthcare for homeless
- Communicable disease prevention and treatment (HIV, Hep A, Hep C, TB)
- Emergency preparedness

Funding Snapshot

Federal funding represents nearly 20% of the overall funding for our local health department and is the major source of funding for key programs.

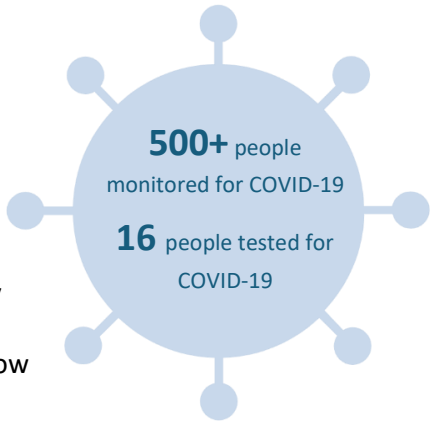


Critical federal funding streams include Medicaid, preparedness funding, the Public Health and Prevention Fund and HRSA Ryan White funding. Additional sources of funding include state and local dollars, fees and grants.

Federal Investment Success

Emergency Preparedness

CDC funding supports PHSKC in promoting and ensuring the health and safety of the whole community before, during and after emergencies and disasters. Our department is now fully activated in response to the novel coronavirus (COVID-19). This surge in activity — which includes monitoring, testing, arranging for and supporting people in for quarantine, coordinating with the health care system and communicating with community partners — is costing our department approximately $200,000 per week. Diverting staff away from other important projects to cover this work is not sustainable. It is critical that we have the resources to prevent and plan now rather than wait until the problem worsens.



> *Emergency supplemental funding and assurance that state and local health departments will be fully reimbursed for necessary activities are urgently needed to support our local response to COVID-19.*

Progress on HIV/AIDs

King County was one of the first counties in the United States to reach the ambitious "90-90-90" goal set by the WHO – whereby 90% of persons with HIV know their HIV-status, at least 90% of persons diagnosed with HIV are receiving medical care and 90% of those in care are virally suppressed. Now, a significant increase in cases among people who are living homeless and who inject or use illicit drugs is challenging us to hold the line on this success. Through our walk-in clinics and mobile street medicine models, we are continuously innovating to provide low-barrier, whole person care for hard-to-reach populations.

> *To successfully implement "Ending the HIV Epidemic in America" - heavily impacted communities such as Seattle-King County need full funding and flexibility for how we put these resources to work.*

Health Care Access

Because of the Affordable Care Act (ACA) more people than ever in our community have health insurance. In Washington state, we have reduced the rate of uninsured by half. Yet, nearly 500,000 people remain uninsured. To address this, our health department is supporting state-level innovations to address affordability by reducing out of pocket costs; and to improve access for people who are not eligible for federal subsidies or public insurance programs.

> *Changes to the public charge test and efforts to undermine the ACA are making it more difficult for communities such as ours to ensure access to care and protect overall population health.*

Opioid Crisis Response and Communicable Disease Prevention

CDC funds are bolstering our capacity to fight the opioid crisis by expanding access to medication for opioid use disorder and overdose reversal, and educating the community about the risk of fentanyl hidden in counterfeit pills. Also with funding from CDC, King County tripled the number of patients screened for Hepatitis C and doubled the number of patients diagnosed, resulting in a more than tenfold increase in the number of patients treated for HCV. Finally, the recent Measles and Hepatitis A outbreaks in our state remind us of how critical CDC's Immunization Program is to support our distribution of life-saving vaccines.

> *To sustain this success, we support the "22% by 2022" cross-sector appeal to increase CDC funding by 22 percent by fiscal year 2022.*

Eliminating Health Inequities

Low-income people of color in our community are more likely to die from gun violence, suicide and drug overdose than their white counterparts, and they experience the highest rates of chronic disease. We use data analysis to identify these disparities and target resources to communities who need them most. For example, with support from a CDC Racial Ethnic Approaches to Community Health (REACH) grant we are working with partners to increase access to healthy foods, create active living environments and establish effective community-clinical linkages for African-American, African-born and Asian-American communities.

> *Support for REACH, for gun violence research and for key policies such as banning flavored e-cigarettes are all critical to achieving health equity.*

Contact: Ingrid Ulrey, Policy Director, (206) 477-7019, Ingrid.Ulrey@kingcounty.gov
Public Health – Seattle & King County | 401 5th Avenue, Seattle, WA 98104

NOVEL CORONAVIRUS RESPONSE

Public Health
Seattle & King County

For more information:
Ingrid Ulrey, Public Health: 206-477-7019

Local health departments play a key role in responding to novel coronavirus (COVID-19). Public Health—Seattle & King County has activated over 100 employees and volunteers, working on disease containment and pandemic preparedness.

500+ people monitored by King County for potential symptoms, with new people added each day

Approximately **$200,000 per week** spent on response efforts

DISEASE INVESTIGATION

- Assessing possible cases for testing
- Tracing contacts of people under investigation for possible coronavirus
- Monitoring people in quarantine
- Providing wrap-around services—from groceries to behavioral health—to support people in quarantine and isolation

COMMUNITY OUTREACH

Anti-stigma community event & press conference

- Addressing and preventing stigma with community partners, including through our online anti-stigma toolkit: kingcounty.gov/ncov/anti-stigma
- Providing guidance on prevention and pandemic planning to schools, colleges/universities, childcare providers, employers and community organizations
- Creating and maintaining COVID-19 website: kingcounty.gov/COVID

MULTIAGENCY COORDINATION

- Collaborating with experts from the CDC and colleagues at Washington Department of Health
- Providing health advisories and guidance to King County healthcare providers regarding screening, identification, testing and infection control measures related to COVID
- Monitoring healthcare system supply shortages and helping ensure healthcare readiness

Gov. Inslee, Executive Constantine and Director Hayes brief staff

RECENT NEWS COVERAGE

Washington Post, 2/20/20:

"We **still don't have a good understanding of the risk** posed by people who are infected but without symptoms," said Dr. Jeff Duchin, Health Officer.

Wall Street Journal, 2/19/20:

"**The amount of manpower, both resources and time, has been tremendous**, and so what that means is that our existing staff are working two jobs around the clock for several weeks," said Dr. Duchin

Associated Press, 2/14/20:

In Seattle, **public health workers buy groceries** to make sure the people stay comfortable while in home quarantine. The health department workers make sure people have Wi-Fi. They arrange calls with counselors for those with anxiety.

Route Fifty, 2/8/20:

Across King County, health officials have heard reports of Asian-American residents being yelled at in the streets for not wearing masks and patients of Asian descent having their medical care delayed because doctors assumed their symptoms pointed to coronavirus.

King County held a media event to bring together business and community to debunk stereotypes, discourage discrimination and discuss ways to respond appropriately to the health threat.

From:	Brostrom-Smith, Claire
To:	Duchin, Jeff
Cc:	Kawakami, Vance; Clark, Shauna
Subject:	Life Care center summary
Date:	Saturday, February 29, 2020 11:30:26 AM
Attachments:	Summary_Feb28_2020.docx

Hi Jeff,

Here is the Lifecare center summary. Let us know if you need anything else

Claire

From: Clark, Shauna <shclark@kingcounty.gov>
Sent: Saturday, February 29, 2020 11:07 AM
To: Brostrom-Smith, Claire <Claire.Brostrom-Smith@kingcounty.gov>; Kawakami, Vance <Vance.Kawakami@kingcounty.gov>
Subject: Summary for Jeff

Shauna Clark, RN
Public Health Nurse
Public Health – Seattle and King County
Communicable Disease Epidemiology & Immunization Section
Direct: (206) 263-1521 | Main: (206) 296-4774 | Fax: (206) 296-4803

Summary: Suspected COVID-19 cluster at SNF LTCF

Location:
Life Care Center of Kirkland
10101 NE 120th St.
Kirkland, WA 98034

2 Long Term Care Units, 4 Short Term Rebab Units

Reported by the LTCF late 2/27/20 to Public Health

25/179 ill staff with cold-like symptoms, including fever, cough and myalgias.

1 staff confirmed and is currently hospitalized.

20 – Nurses or CAN

4 – Dietary aids

1 - other

~27/108 ill residents with cold like symptoms including, fever, cough, chest congestion, SOB, difficulty breathing

~5 residents diagnosed with pneumonia at LTCF, not hospitalized

Illness onsets range 2/15/20 to 2/29/20; with no resident onset earlier than 2/16

A total of 11 people (10 residents, 1 staff) were hospitalized with hospital admission dates ranging during 2/18/20 to 2/28/20 at least two HCFs:

~22 NEG rapid flu tests (both staff and residents) and 2 NEG Resp Panels

From: Bogan, Sharon
To: Public Health Public Information Officer
Subject: Media release: First death due to novel coronavirus in a resident of King County
Date: Saturday, February 29, 2020 1:03:37 PM
Attachments: image002.png
image001.png

February 29, 2020

Contacts: Public Health – Seattle & King County Media Line: 206-477-9000

Email: PHPIO@kingcounty.gov

Washington State Department of Health: 253-512-7100

Email: doh-pio@doh.wa.gov

Contact: James Apa, 206-263-8698

First death due to novel coronavirus (COVID-19) in a resident of King County

There are also confirmed cases of COVID-19 from a long-term care facility in King County

Summary

Public Health – Seattle & King County and the Washington State Department of Health are announcing new cases of COVID-19, including one death. The individual who died was a man in his 50s with underlying health conditions who had no history of travel or contact with a known COVID-19 case. Public Health is also reporting two cases of COVID-19 virus connected to a long-term care facility in King County.

Story

Public Health – Seattle & King County, Washington State Department of Health and the Centers for Disease Control and Prevention (CDC) are reporting today four presumptive positive cases of novel coronavirus (COVID-19), including one person who died.

- Two of the confirmed cases are associated with LifeCare nursing facility in Kirkland, King County, Washington:

  - One is a health care worker from LifeCare. She is a woman in her 40s, is currently in satisfactory condition at Overlake Hospital, and she has no known travel outside the United States.

  - The second case, a woman in her 70's, is a resident at LifeCare and is in serious condition at EvergreenHealth Hospital.

- In addition, over 50 individuals associated with LifeCare are reportedly ill with respiratory symptoms or hospitalized with pneumonia or other respiratory conditions of unknown cause and are being tested for COVID-19. Additional positive cases are expected.
- The death occurred in a patient at EvergreenHealth Hospital but was not a resident of the long-term care facility.

Public Health – Seattle & King County is current working with LifeCare to provide care for ill patients while protecting uninfected patients. The CDC is sending a team of epidemiologists to King County to support our efforts to identify, isolate and test all of those who may be at risk because of these new cases.

Public Health is at the very beginning stages of this investigation and new details and information will emerge over the next days and weeks.

"This is a tragic loss of life and we share our heartfelt condolences with the family," said Dr. Jeff Duchin, Health Officer for Public Health – Seattle & King County. "While the vast majority of cases of COVID-19 are believed to be mild, the virus can be a very serious infection that can lead to death. Protecting the health of our community and supporting the care of health care workers is our top priority."

"I know this news is alarming, but we are doing everything possible to make sure the public is safe. Earlier today I declared an emergency proclamation directing state agencies to use all resources necessary to prepare for and respond to the outbreak. The best thing people can do to help is remain informed and take routine health precautions," Gov. Jay Inslee said. "Our public health officials at the state, local and national levels are working diligently on this, coordinating efforts and keeping the public safe and informed."

"We are fortunate to have one of the best public health agencies in the nation, and we are pulling all available resources into the fight against COVID-19. King County is reviewing all government operations, and we are standing up an

Emergency Operations Center to respond appropriately across all agencies and public services. I urge businesses and families to plan and take precautions, referring to Public Health for best practices." King County Executive Dow Constantine

For more information about COVID-19 in King County visit: www.kingcounty.gov/coronavirus

Providing effective and innovative health and disease prevention services for more than two million residents and visitors of King County, Public Health — Seattle & King County works for safer and healthier communities for everyone, every day. More at www.kingcounty.gov/health

Keep up with the latest Public Health news in King County by subscribing to the department's blog, Public Health Insider.

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Washington State Department of
Health

Public Health

Seattle & King County

From:	Joel Bodenman
To:	Thomas D. Rea; Plorde, Michele; Jacinto, Tracie; Jim Whitney; Adrian Whorton; brant.butte@amr.net; Kelly Dunn; Tim Day; Dave Van Valkenburg; "Smith, T (EMSAC member""; Bill Hoover; Greg Picinich
Cc:	Kawakami, Vance; Kay, Meagan; Duchin, Jeff
Subject:	New Kirkland Potential COVID-19 Call.
Date:	Saturday, February 29, 2020 12:40:49 PM

All please see the call below; we will be in contact with Dr. Rea as soon as this call is complete to discuss.

Joel

From: Chris Rogers
Sent: Saturday, February 29, 2020 10:57 AM
To: Joel Bodenman <JBodenman@kirklandwa.gov>
Cc: Mark Buenting <MBuenting@kirklandwa.gov>; Arthur Lim <ALim@kirklandwa.gov>; Margo Freeman <MFreeman@kirklandwa.gov>; Nathan Schaeffer <NSchaeffer@kirklandwa.gov>; Michael Allan <MAllan@kirklandwa.gov>
Subject: LCC exposure

Hey Joel I see a flurry of emails about COVID and LCC. We had a cardiac arrest patient that was **discharged from LCC and moved to an Adult Family Home the same day**. Call details

Incident Number: 20200001345
Address: 10208 126TH AVE NE
AFH Name: Majectic Adult Family Home

Crews:
A126: Rogers, Allan, Schaeffer
B121: Art Lim
M123: Dre and Michelle
E127: Russell, Kelsey, McCauley
MSO117: Waite
KPD

Not sure if action needed but FYI.

Joel Bodenman
Kirkland Fire Department
EMS Captain
Office: 425-587-3663

Cell: 425-531-8957

From: Thomas D. Rea <rea123@uw.edu>
Sent: Saturday, February 29, 2020 12:03 AM
To: Plorde, Michele <Michele.Plorde@kingcounty.gov>; Jacinto, Tracie <Tracie.Jacinto@kingcounty.gov>; Jim Whitney <jwhitney@redmond.gov>; Adrian Whorton <awhorton2@comcast.net>; brant.butte@amr.net; Joel Bodenman <JBodenman@kirklandwa.gov>; Kelly Dunn <kdunn@redmond.gov>; Tim Day <TDay@kirklandwa.gov>; Dave Van Valkenburg <DVanValkenburg@kirklandwa.gov>; 'Smith, T (EMSAC member'' <tfsmith@redmond.gov>
Cc: Kawakami, Vance <Vance.Kawakami@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Subject: Important updates

All

This is a dynamic situation - I believe I have contacted persons on duty for your agencies. Persons I have talked to this evening have been exceptional in their response and helping to get the situation organized - thank you.

I have learned that the location - Life Center of Kirkland - now has 2 confirmed COVID-19 patients that involved Redmond Paramedics, Kirkland Fire Department, and AMR. Reportedly there have been upwards of a dozen EMS responses just in the past week or so - many of these patients are now being or will be tested shortly for COVID-19 given the positive diagnoses.

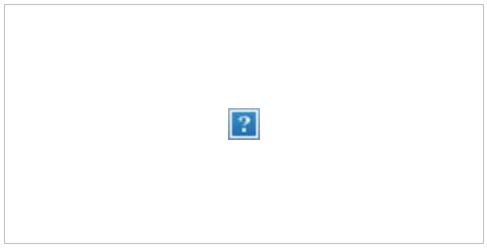
To my knowledge, the crews were not using full COVID-19 precautions - hence they were not protected at the level recommended by the CDC - very unepected presentation in a SNF - and no way for the crews to expect such a circumstance. I talked with Dr. Duchin about this circumstance. We would recommend that the involved crews step out of "professional circulation" and stay at home in functional quarantine until PH has a better fix on disease burden and the nature of patient-specific exposure. The quarantine may be up to 14 days from the last time they had a potential exposure at the facility. I discussed this plan with their ALS Medical Director - Adrian Whorton, the on-duty Redmond MSO Kelly Dunn, Director Brant Butte of AMR, Chief Smith, and Captain Joel Bodenman of Kirkland Fire about this circumstance this evening.

The guidance for quarantine from CDC is found at this link below. In general, the employees should avoid public and stay at home. They should avoid close contact with family but do not need to isolate so long as they remain asymptomatic. Public Health will provide additional

guidance during the follow-up period. Your employees should understand this is done with an abundance of precaution for their safety, the safety of their colleagues, and the safety of the public.

I have asked each agency to generate a list of their employees who have been to the facility in the past 2 weeks and which patients they contacted. This list will need to be communicated to Public Health. I have cc'd Meagan Kay and Vance Kawakami of Public Health.

https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html



Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with 2019 Novel Coronavirus (2019-nCoV) - cdc.gov

Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with 2019 Novel Coronavirus (2019-nCoV)

www.cdc.gov

I am on my cell and happy to discuss your concerns. I appreciate information is developing quickly. Really appreciate the efforts by all.

Tom Rea

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Tom Rea MD MPH

Professor of Medicine Medical Program Director

Harborview Medical Center EMS Division

University of Washington Public Health - King County

cell 206-255-5513

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From:	Seattle-EOC
To:	Addison, Pat; Anderson, Dan A; Clark, Jeanne; Colling, Sara; Cruz, Maribel; DOT_PSC; Drake, Lisa; Ducksworth, Adonis E; Dumpys, Christa; Podesta, Fred (Seattle Public Schools); Grayson, Kayla; JamesKr@SeahawksFGI.com; kirbytro@amazon.com; Marx, Heather; Matanza, Adrian_SCL_FAA02; McCormick, Dave; MOS_All_Staff; MOS_PIO_Contacts; Oberg, Eric N; OEM_Colleges_and_Universities; OEM_COOP_POC; OEM_DMC_Admin_Group; OEM_DMC_Committee_Group; OEM_DMC_Information_Group; OEM_Duty_Officer; OEM_EOC_Support_Team; OEM_LOS_Directors_and_alternates_Group; OEM_LOS_Points_of_contact_Group; OEM_Mayor_And_Council_Members_Group; OEM_Mayors_Emergency_Executive_Board_Assistants_Group; OEM_Mayors_Emergency_Executive_Board_Group; OEM_Mayors_Senior_Staff_Group; OEM_Seattle_800 MHz_Radio_Group; OEM_Strategic_Work_Group_of_DMC; Plusquellec, Scott; Reardon, Emily; Schwartz, Allison_DOT_PL114; Shepard, Meghan; sue.kuwahara@soundtransit.org; Verhoff, Jason; Anderson, Shanon (SPD); Arnone, Harvey; Barrett, Ty; Barrett, Ty; Bisping, Lori; Blackburn, Brad; Blankenship, Jeanette; Buechler, Chad M; Buehring, Audrey; Bull, Karina; Cari, AJ; Carr, Sue; Cheuvront, Erin; Clifton, JulieAnn; Cordner, Lesley; Crosier, Neil; Daoust, Deborah; David.Easton@enwave.com; Deherrera, Roque; Derrick, Anthony; Deyerin, Marcus; Dikeakos, Stephanie; Driskell, David; Edwards, John; Eichhorn, Lawrence; Eichhorn, Lawrence; Eichhorn, Lawrence; Elsenboss, Carina; Fiske-Zuniga, Anne; Fong, Michael; Foote, Candice L; Gowing, Stephanie; Greene, Richard; Griggs, Kyle; Groshong, Joseph; Hall, Heidi; Hansen, Randy; Higgins, Andy; Houghton, Matthew; Hovde, Bryan; Kaku, Clinton; Kaku, Clinton; Kelly, Jason W; Keppinger, Katie Jo; Klein, Denise; Kunselman, David; Kunselman, David; Lockhart, Mariko; Lumsden, Faith; Mantilla, Andres; McClain, Dwayne; McEvoy, Pegi; McNab, Susan; Miller, Austin; Susan Pelaez; Petesch, Patti; Plymale, Katie; Potter, Chris; Potter, Chris; Prentice, Mark; Quirk, Patti; Rick Sheridan; Rosete, Brian; Santana, Cynthia; Scriver, Cody; Simmons, Monica M; Smith, Gary; Southard, Laura; Staton, Scott; Uy, Joaquin; Watson, Jill; Wendland, Catherine; Worcester, Ned; Worden, Michael; Ybarra, Latrice
Subject:	Non-Pharmaceutical Intervention Guidance
Date:	Friday, February 28, 2020 1:50:18 PM
Attachments:	NPI Guidance - Intervention Overview and Implementation v1.0.pdf

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Greetings Partners and Stakeholders,

Attached is the guidance on non-pharmaceutical interventions (NPI) from Washington State Department of Health (DOH). The guidance includes an overview and implementation strategies for various NPIs.

Additionally, at 10:00 AM this morning DOH and Washington State Emergency Management Division (EMD) provided a webinar to introduce and highlight aspects of the guidance. Below are the notes.

What we'd like to emphasize are NPIs 1-5, these are actions that should be taken now, aggressively and broadly/by everyone.

Risk is low for people in the US at this time.
Goal is to slow the spread:

- to give healthcare system time to prepare
- prepare for implementation of NPIs and
- better understand the virus/disease

DOH released a document outlining 13 non-pharmaceutical intervention strategies. We should be prepared to implement ALL of the NPI strategies, beginning now and getting progressively more aggressive. The purpose of NPI is the slow the spread—spread it out overtime; we will not eliminate it. Do expect the disease will spread. Strategies should be focused on reducing spread and protecting the people at highest risk

Menu of NPI:

1. Increase handwashing and use of alcohol-based sanitizer

2. Respiratory hygiene and cough etiquette
3. Keep distance from others (> 6 feet)
4. Frequently clean and disinfect surfaces
5. Remain home during a respiratory illness
6. Voluntary isolation of sick persons
7. Voluntary quarantine of contacts of sick persons
8. Involuntary isolation of sick persons
9. Involuntary quarantine of contacts of sick persons
10. Recommend or order cancellation of major public and large private gatherings
11. Recommend or order closure of schools, child care facilities, workplaces, and public buildings
12. Prevent non-emergency travel outside of the home
13. Establish cordon sanitaire

Public health does not believe that most restrictive measures would be warranted for covid bc the fatality rate is not so high as to merit the societal/economic costs of these measures. The most restrictive approaches are unlikely to be reasonable for this incident

- NPIs 1-5 should be done now as broadly as possible. Re: social distancing, DOH is not recommending changes that will compromise the normal functions of society *at this point*, but asks us to think through what can be done to reduce density of people where possible—e.g. is there a way to add additional buses to decrease density.—for now, find the simple and unrestrictive ways.
- NPI 6-9 are already underway for directly impacted people
- DOH is putting together tiered implementation strategies for 10-13, targeted to the specifics of covid-19 and the populations most vulnerable. For example, covid19 symptoms appear to be universally mild and non-existent among children, might be better to target implementation to protect seniors rather than children (this is different than typical with influenza).
    - We requested that they also develop recommendations for tiered implementation of social distancing as well.
- Masks are not an effective strategy to prevent spread among general population, creates a drag on supply without reducing disease effectively.
- There are varying levels of severity when implementing cordon sanitaire—the implementation in China is much more restrictive than that being implemented in Italy. In Italy, they identified small and localized places of spread and targeted those locations with a minimally restrictive cordon. They set up checkpoints into and out of those areas. Asymptomatic individuals can leave if they have a good reason (e.g. an employee badge for critical infrastructure or healthcare). Asymptomatic people can come in for good reason (e.g. providing deliveries) but should minimize their contacts within the community.

Now is the time to further intensify collaboration between public health and EM in jurisdictions and elected officials.

Pardon any duplication.

Best Regards,

Ivan W Lee
Training & Exercise Coordinator
City of Seattle, Office of Emergency Management

Desk: 206-233-5096 | Main: 206-233-0076 | ivan.lee@seattle.gov
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Non-Pharmaceutical Interventions (NPI) Implementation Guide

NPIs are mitigation strategies to limit and prevent exposure to disease. These include personal protective steps for everyday use, community containment, and environmental measures to control viral disease outbreaks and pandemics.

This guide will help you decide what NPIs to consider implementing in an outbreak. Public health officials will need to determine the appropriate set of interventions to implement in combination for a given incident.

This guide is intended for an Incident Management Team, the Department of Health, multi-agency coordination policy groups, and local health officers.

FEBRUARY 2020

Contents

NPIs

This guide lists 13 interventions to mitigate the spread of a contagious disease, such as a novel virus. It is part of the state's Communicable Disease and Pandemic Response plan and includes personal, community, and environmental methods of control.

Its purpose is to help public health officials and partners choose which mitigation strategies to implement to limit and prevent the spread of novel respiratory diseases of concern.

The interventions included are:

1. Increase handwashing and use of alcohol-based sanitizer
2. Respiratory hygiene and cough etiquette
3. Keep distance from others (> 6 feet)
4. Frequently clean and disinfect surfaces
5. Remain home during a respiratory illness
6. Voluntary isolation of sick persons
7. Voluntary quarantine of contacts of sick persons
8. Involuntary isolation of sick persons
9. Involuntary quarantine of contacts of sick persons
10. Recommend or order cancellation of major public and large private gatherings
11. Recommend or order closure of schools, child care facilities, workplaces, and public buildings
12. Prevent non-emergency travel outside of the home
13. Establish cordon sanitaire

Table 1 lists expected results on the spread of disease if each intervention were to be used, and gives examples of how each of the interventions can be done.

Transmissibility, Severity

Each intervention lists a scaled measure of transmissibility and a scaled measure of clinical severity as identified by the CDC.

- **Transmissibility** is a scale of 1 to 5, with 5 being the most contagious
- **Clinical severity** is a scale of 1 to 7, with 7 being the most severe in terms of number of cases, number of hospitalizations, and fatality ratio.

The complexity of the interventions increases as transmissibility and clinical severity increase. **Table 1** connects these scales to each intervention and **Table 2** defines them.

ESF-8 Supporting Agencies

These Emergency Support Function 8 (ESF-8) supporting agencies contribute to public health response efforts, including community mitigation strategies, in collaboration with the Department of Health as the lead agency for ESF-8.

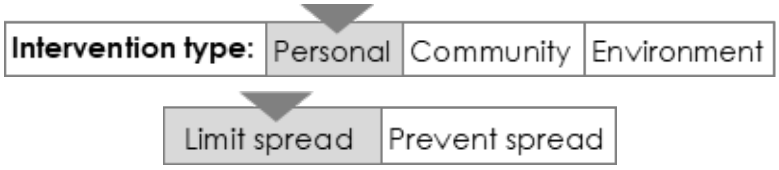
- Department of Agriculture
- Department of Ecology
- Department of Enterprise Services
- Department of Fish and Wildlife
- Department of Labor and Industries
- Department of Licensing
- Department of Social and Health Services
- Department of Transportation
- Washington Military Department
- Washington State Health Care Authority
- Washington State Patrol
- Washington State Pharmacy Association
- Washington State Office of the Attorney General
- Washington State Hospital Association
- Washington State Pharmacy Association
- Washington State Disaster Medical Advisory Committee
- Northwest Healthcare Response Network
- Local Health Officers
- Local Emergency Management Agencies
- Tribal Governments

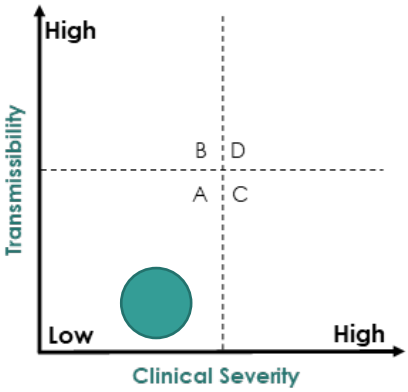
This guide was developed from the Communicable Disease and Pandemic Response Plan, Risk Matrix and Recommendations Table of Annex 4. (Document link — WA Emergency Management Division)

Intervention 1: Increase Handwashing and Use of Alcohol-Based Hand Sanitizer

Reduce probability of direct and indirect transmission of the disease by handwashing regularly with soap and water or using hand sanitizer.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Hand hygiene reduces the transmission of viruses that occurs when one person touches another with a contaminated hand, or when a person touches an object or surface that's been contaminated and then touches their own nose or face with that hand before washing it.

Success Factors: Success depends on public education effectiveness, public compliance, and access to handwashing facilities and sanitizing stations.

Possible Drawbacks: None anticipated, although there is a potential concern about the supply chain for hand sanitizer and soap.

Possible Benefits: Quick and easy to implement; effective at reducing illness due to direct/indirect contact.

Settings and Use

- Personal non-pharmaceutical interventions (NPIs) are everyday preventive actions that can help keep someone from getting and spreading respiratory illnesses transmitted by droplet routes.
- Use at homes, child care facilities, schools, workplaces, houses of worship, public transit, and other settings where people regularly gather.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers

State

Key Decision Makers: The Secretary of Health has the same authority as a local health officer (LHO) to control and prevent the spread of disease (under RCW 43.70.130), and may exercise the authority in an emergency, when LHOs agree, or when LHOs fail or are unable to act, per RCW 43.70.130(7). This includes the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Determine financial responsibility for providing handwashing stations and/or hand sanitizer.
- Research/discuss resource procurement needs:
    - Local/state/national partners
    - Private/public partners
- Develop communication strategies and communication plans.
- Engage community partnerships to promote message.

Implementation Methods

- **Create an inclusive public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.
    - Communicate on multiple platforms appropriate to the affected communities.
    - Connect with community leaders or representatives for advice and buy-in.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Provide consistent messaging throughout the state via media outreach.
    - Encourage workplaces to make handwashing a priority among employees.

- **Create and distribute accessible, public messaging**
    - Display culturally appropriate messaging in public places.
        - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.

- **Place hand-washing or hand sanitizer stations in accessible areas**
    - Deploy disinfectant stations in the following or similar locations: Bus stations, transit centers, transportation hubs, health care facilities, schools, shopping centers, entertainment venues, workplaces
        - Prioritize areas of known exposure or at increased risk of exposure.

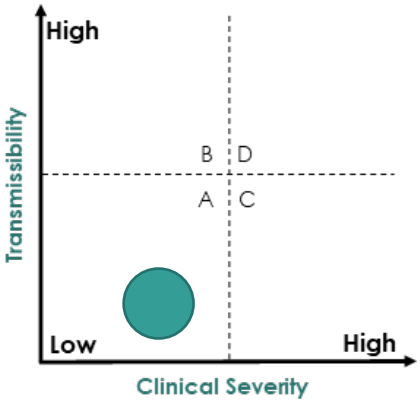
Intervention 2: Respiratory Hygiene/Cough Etiquette

Reduce probability of droplet transmission of the disease by reducing the range of respiratory droplets and aerosols from coughs, sneezes, and other sources.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D

Intervention type:	Personal	Community	Environment

Limit spread	Prevent spread



Rationale for Use as Public Health Strategy

Respiratory etiquette is widely supported in literature and by studies, and is recommended by experts as a way to control the spread of disease. Droplets from those who do not cover their coughs or sneezes can travel up to six feet. Studies of influenza transmission and practical experience in controlling influenza outbreaks reinforce that respiratory hygiene is an important factor in infection control.

Success Factors: Success depends on public education effectiveness and public compliance.

Possible Drawbacks: None anticipated. There could be potential concerns about supply chain for tissues/alcohol-based hand sanitizer.

Possible Benefits: Quick and easy to implement; effective at reducing illness due to droplet transmission.

Settings and Use

- Personal non-pharmaceutical interventions (NPIs) such as covering a cough are everyday preventive actions that can help keep persons from getting and spreading respiratory illnesses transmitted by droplets.
- Use at homes, child care facilities, schools, workplaces, houses of worship, public transit, and other settings where people regularly gather.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers

State

Key Decision Makers: The Secretary of Health also has the same authority as local health officers (LHO) to control and prevent the spread of disease (under RCW 43.70.130), and may exercise the authority in an emergency or when LHO(s) agree or fail or are unable to act, per RCW 43.70.130(7). This includes the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Determine financial responsibility for providing tissues, handwashing stations, and/or hand sanitizer.
- Research/discuss resource procurement needs:
    - Local/state/national partners
    - Private/public partners
- Develop communication strategies and communication plan.
- Engage community partnerships to promote key messages.

Implementation Methods

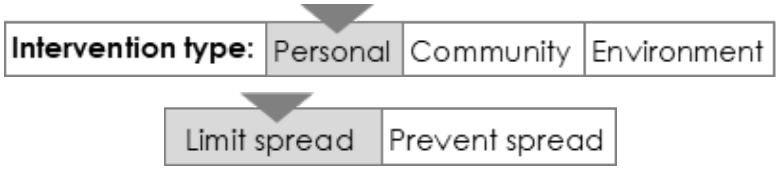
- **Create an inclusive public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.

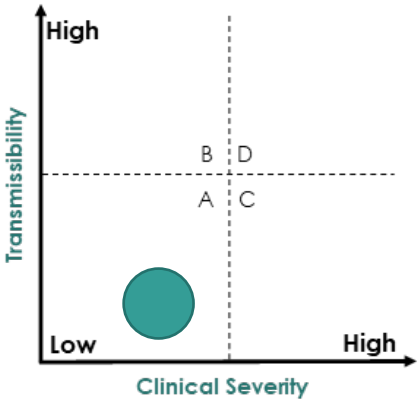
    - Communicate on multiple platforms appropriate to the affected communities
    - Connect with community leaders or representatives for advice and buy-in.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Provide consistent messaging throughout the state via media outreach.
- **Create and distribute accessible, public messaging**
    - Display culturally appropriate messaging in public places.
        - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
        - Flyers should be translated into locally appropriate languages.
- **Provide respiratory hygiene stations in accessible areas.**
    - Provide tissues and waste receptacle at every public hand sanitizer station in accessible areas.
    - Consider bus stations, transit centers, transportation hubs, health care facilities, schools, shopping centers, entertainment venues, etc.
        - Prioritize areas of known exposure or at increased risk of exposure.

Intervention 3: Keep distance from others (> 6 feet)

Reduce probability of direct and droplet transmission by reducing the number of interpersonal contacts.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Keeping distance from others is the most basic form of social distancing that reduce opportunities for person-to-person virus transmission and can help delay and slow the exponential growth of disease spread. It's a common-sense approach to limit disease spread by limiting contact and possible exposures. Droplets from those who do not cover their coughs or sneezes can travel up to six feet. Keeping distance from others if you are sick or from others who may be sick is limits possible spread.

Other more restrictive forms of social distancing are discussed in later interventions and include closure of buildings, isolation and quarantine. The optimal strategy may be to implement several social distancing measures simultaneously where groups of people gather.

Success Factors: Success depends on public education effectiveness and public compliance.

Possible Drawbacks: Certain cultural and religious groups may be unwilling or unable to comply due to conflict with cultural/religious norms or practices. Persons may feel anxious, worried, or fearsome due to being socially distant from others.

Possible Benefits: Quick and easy to implement; effective at reducing illness due to droplet transmission.

Settings and Use

- Personal NPIs such as keeping distance from others who may be sick are everyday preventive actions that can help keep persons from getting and spreading respiratory illnesses transmitted by droplets. Diseases are transmitted by direct contact, indirect contact, droplet, and/or airborne routes. Ill persons can spread illness everywhere they go and surfaces they touch.
- Use at homes, child care facilities, schools, workplaces, houses of worship, public transit, and other settings where people regularly gather.
- Examples that reduce in-person contact include: telecommuting instead of meeting in-person, staggering work hours, spacing workers further apart at the worksite, limiting non-essential travel, and avoiding close contact with people who are sick.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers

State

Key Decision Makers: The Secretary of Health also has the same authority as local health officers (LHO) to control and prevent the spread of disease (under RCW 43.70.130), and may exercise the authority in an emergency or when LHO(s) agree or fail or are unable to act, per RCW 43.70.130(7). This includes the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Implementation Methods

- **Create an inclusive public messaging campaign**
  - Work with communications team to create messages that:
    - Are culturally competent and at an appropriate reading level.
    - Are translated into the most spoken languages in the affected area.
    - Are relevant to the changing nature of the incident/outbreak.
  - Communicate on multiple platforms appropriate to the affected communities
  - Connect with community leaders or representatives for advice and buy-in.
  - Provide messages to LHJs and other partners to share with their constituents.
  - Provide consistent messaging throughout the state via media outreach.
- **Create and distribute accessible, public messaging**
  - Display culturally appropriate messaging in public places.
    - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
    - Connect with community leaders or representatives for advice.
    - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
    - Flyers should be translated into locally appropriate languages.

Decisional Objectives/Key Decision Points

- Communication strategies and communication plan
    - Outreach to major employers
    - Community and faith-based partners
    - Schools, child care facilities, and other settings where people regularly gather
- Social distancing on public transit
- Social distancing for ill persons or the public at large

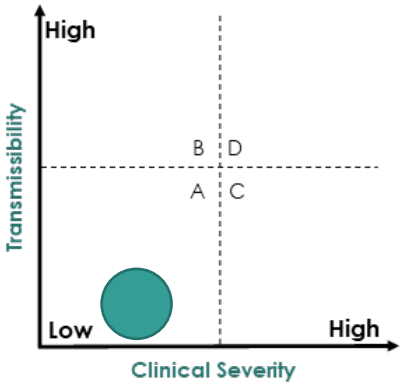
Intervention 4: Frequently Clean and Disinfect Personal Surfaces

Reduce probability of indirect transmission of the disease by disinfecting fomites, or objects that can carry infection. This includes doorknobs, phones, keyboards, etc.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D

Intervention type:	Personal	Community	Environment

Limit spread	Prevent spread



Rationale for Use as Public Health Strategy

Contact transmission (i.e., hand transfer of virus from contaminated objects to the eyes, nose, or mouth) is a recognized route of virus spread. The routine use of disinfection measures that eliminate viruses from contaminated surfaces might reduce the spread of viruses.

Success Factors: Success depends on public education effectiveness, public compliance, and access to appropriate disinfectants at home.

Possible Drawbacks: Lack of available cleaning supplies.

Possible Benefits: Environmental disinfection is effective at reducing illness due to indirect contacts (fomites).

Settings and Use

- Environmental NPIs include routine disinfection of surfaces that helps to eliminate viruses from frequently touched surfaces and objects, such as phones, toys, keyboards, desks, and doorknobs.
- Disinfect homes, child care facilities, schools, workplaces, houses of worship, other settings where people regularly gather, and all frequently touched surfaces with a disinfectant labeled to kill viruses and bacteria.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
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State

Key Decision Makers: The Secretary of Health also has the same authority as local health officers (LHO) to control and prevent the spread of disease (under RCW 43.70.130), and may exercise the authority in an emergency or when LHO(s) agree or fail or are unable to act, per RCW 43.70.130(7). This includes the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Determine communication strategies and communication plan.
  - Outreach to major employers
  - Community and faith-based partners
- Research/discuss resource procurement needs, including fiscal responsibility:
  - Local/state/national partners
  - Private/public partners
- Engage business and community partnerships to implement and promote messages.

Implementation Methods

- **Create an inclusive public messaging campaign**
  - Work with communications team to create messages that:
    - Are culturally competent and at an appropriate reading level.
    - Are translated into the most spoken languages in the affected area.
    - Are relevant to the changing nature of the incident/outbreak.
  - Communicate on multiple platforms appropriate to the affected communities
  - Connect with community leaders or representatives for advice and buy-in.
  - Provide messages to LHJs and other partners to share with their constituents.
- **Create and distribute accessible, public messaging**
  - Display culturally appropriate messaging in public places.
    - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.

        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
- **Distribute disinfectant in accessible locations**
    - Deploy disinfectant stations in the following locations: Bus stations, transit centers, transportation hubs, health care facilities, schools, shopping centers, grocery stores, entertainment venues, and other areas where community members gather.
        - Prioritize areas of known exposure or increased risk of exposure.

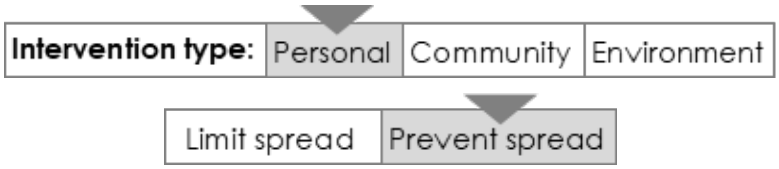
Decisional Objectives/Key Decision Points

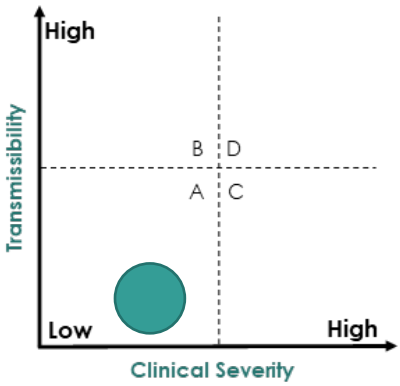
- Determine communication strategies and communication plan.
    - Outreach to major employers
    - Community and faith-based partners
- Research/discuss resource procurement needs, including fiscal responsibility:
    - Local/state/national partners
    - Private/public partners
- Engage business and community partnerships to implement and promote messages.

Intervention 5: Remain Home When Sick with Respiratory Illness

Reduce probability of transmission by preventing contacts between well and sick people.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Staying home while sick will prevent spreading illness to others in your community. You can also create social distance at home and prevent spreading the illness to others in your household by staying in a specific room and away from your household members as much as possible and using a separate bathroom (if available).

Success Factors: Success depends on the individual's willingness and ability to stay home from work/school/events including access to paid sick leave.

Possible Drawbacks: Many members of the public will be reluctant to stay home due to risk of lost wages and limited or no access to paid sick leave.

Possible Benefits: This is a form of voluntary isolation which is extremely effective in reducing the spread of illness if ill persons comply consistently.

Settings and Use

- Diseases are transmitted by direct contact, indirect contact, droplet, and/or airborne routes. Ill persons can spread illness everywhere they go and surfaces they touch.
- This NPI is used at home to stop spread of disease in public places. It can also be used by employers to request sick employees not come to work.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers

State

Key Decision Makers: The Secretary of Health also has the same authority as local health officers (LHO) to control and prevent the spread of disease (under RCW 43.70.130), and may exercise the authority in an emergency or when LHO(s) agree or fail or are unable to act, per RCW 43.70.130(7). This includes the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Communication strategies and communication plan.
    - Communicate with major employers.
    - Perform outreach to community and faith-based partners.
- Reference available guidance on duration of illness.
- Evaluate economic impact of ill persons without paid sick leave.

Implementation Methods

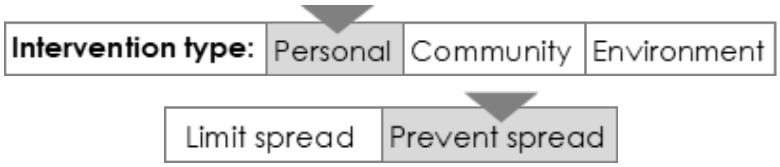
- **Create an inclusive public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.
    - Communicate on multiple platforms appropriate to the affected communities
    - Connect with community leaders or representatives for advice and buy-in.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Provide consistent messaging throughout the state via media outreach.
- **Create and distribute accessible, public messaging**
    - Display culturally appropriate messaging in public places.
        - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
    - Co-locate messaging or publications with sanitizer stations and tissues.
- **Work with employers**
    - Have employers review and communicate their sick leave policies, flexible leave policies, and alternate work schedules with employees to encourage sick employees to stay home and prevent the spread of illness at work.
    - Use current relationships with employers to ask employees to stay home if they are ill.

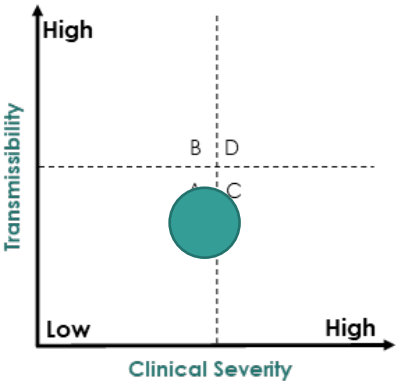
- Suggest allowing employees to work from home. If this is already an option, consider working with HR to be more flexible and inclusive.
- Consider an emergency/temporary change in sick leave policy; allowing an employee to use sick leave proactively and earn it back retroactively.
    - This can decrease the hesitancy on the employees' part to stay home and increase participation in voluntary quarantine.

Intervention 6: Voluntary Isolation of Sick Persons

Reduce probability of transmission by preventing contact between well and sick people.

Transmissibility (1-5)	2
Clinical severity (1-7)	2-5
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Personal non-pharmaceutical interventions are everyday preventive actions that can help keep persons from getting and spreading respiratory illnesses transmitted by droplets. Voluntary isolation is a form of social distancing and prevents a sick person from infecting other people outside of their isolation location. Historically, isolation measures can help prevent the spread of infectious diseases by stopping the person-to-person spread of virus via contaminated droplets generated by coughs and sneezes, and have been shown to delay the peak of an influenza pandemic.

Success Factors: Effective education and ability to comply with request. Material routine support and services (e.g. laundry, food) and working with the employer may help compliance.

Possible Drawbacks: Non-compliance with voluntary isolation increases risk of disease transmission; isolation is difficult to enforce.

Possible Benefits: Isolation is extremely effective in consistently reducing the spread of illness. Voluntary isolation is “less restrictive” and more acceptable to the public.

Settings and Use

- Voluntary isolation of a sick person involves remaining home, at a health care facility, or at another designated isolation facility.
- Isolation is used for persons infected with a contagious disease to separate them from people who are not sick.
- For isolation and quarantine measures, state law requires making reasonable efforts to obtain voluntary compliance unless doing so would create a risk of serious harm (WAC 246-100-040(1)(a)). It is good public health policy, and it's also legally required.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers:

Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Local health officers (and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7)) have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine

State

In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease and issue isolation and quarantine orders. The Secretary also has authority to investigate disease outbreaks and advise local health officers on measures to be taken in response.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)
- WAC 246-101-105 – Duties of the healthcare provider

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Decisional Objectives/Key Decision Points

- Create communication strategies and plan for:
  - Health care providers
  - Major employers
  - Community and faith-based partners
- Create guidance and/or education resources for patients and health care providers, including monitoring forms.
- Identify isolation facility for individual(s).
- Determine need for material support and services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing services.
- Movement plan for sick persons to a health care facility (if needed)
- Personal Protective Equipment (PPE) needed for persons providing support to sick persons in isolation.
- Determine type of monitoring:
  - Self-monitoring (what will be monitored, frequency, reporting)
  - Active monitoring (phone, video, or in-person; frequency; responsible staff)
  - Other type
- Plan the logistics for specimen collection and providing other medical services, if needed.
- Determine when to release from isolation and process for notification.

Implementation Methods

- **Health officer requests that a patient self-isolate**
  - Letter should be on official department letterhead, with a wet or electronic signature from the health officer. While a wet signature may be more impactful, it is not a legal requirement. It may be more efficient and avoid delay to use an e-signature under certain circumstances.
  - Letter should include additional information resources for providers, including phone numbers, websites, and other relevant resources.

- **Instruct health care providers to educate patients**
    - Work with communications teams to distribute a health alert to all providers in Washington.
        - Attach information or a publication to the alert that can be printed and displayed in waiting areas and treatment rooms.
        - Distribute a health alert to all relevant providers about the health officer's request.
- **Engage community organizations and faith-based organizations**
    - Work within already established relationships with community and faith-based partners.
        - If faith-based and community partners receive your health alerts, consider creating a separate alert for them with relevant information to the communities and individuals they serve.
        - Be willing to speak to their leadership/elders/members regarding the situation (within reason) and why we are making this ask.

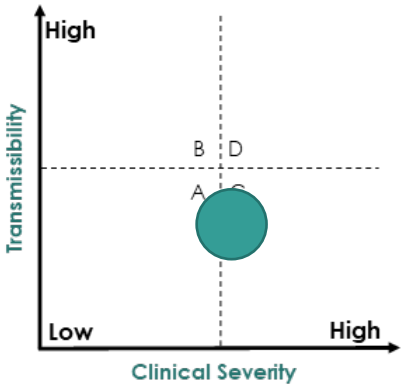
Intervention 7: Voluntary Quarantine of Contacts of Sick Persons

Reduce probability of transmission in the event that the contact becomes contagious before symptoms developed.

Transmissibility (1-5)	2
Clinical severity (1-7)	2-5
Recommend implementing at	A, B, C, D

Intervention type: Personal | Community | Environment

Limit spread | Prevent spread



Rationale for Use as Public Health Strategy

Quarantine refers to the separation and restriction of movement of persons who, while not yet ill, have been exposed to an infectious agent and therefore may become ill. Quarantine of exposed persons is a public health mitigation strategy intended to stop the spread of infectious disease. It is effective in protecting the public from disease.

Certain infected (but not yet symptomatic) individuals may spread illness and could unknowingly infect friends, neighbors, and others in the community before symptoms begin. Therefore, all contacts exposed to a sick person could be asked to voluntarily stay home for a specified period of time to assess for early signs of infection. If other household members of the contact become ill during this period, then the time for voluntary home quarantine may be extended for another incubation period. Quarantine at a designated facility (in lieu of home setting) also can be considered.

Success Factors: Effective contact tracing and individual ability to comply with request. Material support with material routine support and services (e.g. laundry, food) and working with the employer may help to encourage compliance.

Possible Drawbacks: Non-compliance increases risk of disease transmission.

Possible Benefits: Quarantine may allow quick identification of a suspect case and helps to prevent exposures early in the course of illness.

Settings and Use

- To avoid potential spread of the disease, consider use of voluntary quarantine for contacts who are exposed to a sick person but are not showing symptoms.
- Settings: At home or at a designated facility.
- For isolation and quarantine measures, state law requires making reasonable efforts to obtain voluntary compliance unless doing so would create a risk of serious harm (WAC 246-100-040(1)(a)). It is good public health policy, and it's also legally required.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Local health officers (and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7)) have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
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- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine
- WAC 246-101-105 – Duties of the healthcare provider

State

In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease and issue isolation and quarantine orders. The Secretary also has authority to investigate disease outbreaks and advise local health officers on measures to be taken in response.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)
- WAC 246-101-105 – Duties of the healthcare provider

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
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- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Decisional Objectives/Key Decision Points

- Definition of "close contact" (including length of exposure to ill person, travel history, etc.)
- Location(s) of quarantine facility (home, government facility, etc.)
- Length of quarantine
- Communication strategies and plan
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan for moving persons under quarantine to a health care facility if they develop symptoms
- Determine type of monitoring:
    - Self-monitoring (what will be monitored, frequency, reporting)
    - Active monitoring (phone, video, or in-person; frequency; responsible staff)
    - Other type
- Plan the logistics for specimen collection and providing other medical services, if needed.
- Determine when to release from quarantine and process for notification.

Implementation Methods

- **Health officer request for person to self-quarantine**
    - Letter should be on official department letterhead, with a wet or electronic signature from the health officer. While a wet signature may be more impactful, it is not a legal requirement. It may be more efficient and avoid delay to use an e-signature under certain circumstances.
    - The letter should include additional resources for providers, including phone numbers, websites, and other relevant resources.
- **Engage community-based and faith-based organizations to support**
    - Work within already established relationships with community-based and faith-based partners.
        - Consider creating and sending a custom health alert for them with relevant information to the communities and individuals they serve.
        - Be willing to speak to their leadership/elders/members regarding the situation (within reason) and why we are making this ask.
- **Work with employers**
    - Use current relationships with employers to support employees in voluntary quarantine due to exposure to sick contacts.

        - Suggest allowing employees to work from home. If this is already an option, consider working with human resources to be more flexible and inclusive.
        - Consider an emergency/temporary change in sick leave policy; allowing an employee to use sick leave proactively and earn it back retroactively.
            - This can decrease the hesitancy on the employees' part to stay home and increase participation in voluntary quarantine.
- **Create a public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.
    - Communicate on multiple platforms appropriate to the communities of affected persons.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Send a health alert to health care providers.

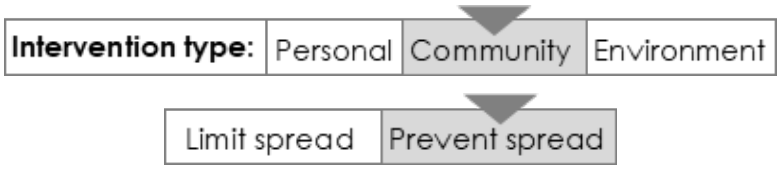
Special Considerations

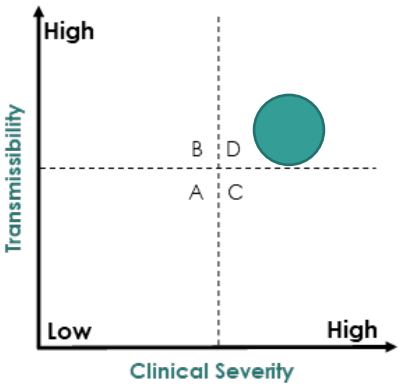
- Consider dedicating a phone line to answer questions that may follow the request for quarantine.
- Work with communications staff to translate materials as needed for community-based and faith-based organizations, community partners, and employers.
- Sovereign tribal nations may decide their own criteria for quarantine.
- Consider use of telemedicine options and home assessment teams for medical support and backup. The idea that medical health is available may help reduce anxiety.

Intervention 8: Involuntary Isolation of Sick Persons

Reduce probability of transmission by preventing contact between well and sick people.

Transmissibility (1-5)	3
Clinical severity (1-7)	5-6.5
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Isolation prevents a sick person from infecting others outside of their isolation location. Historically, isolation measures have helped to prevent the spread of infectious diseases, such as influenza, by stopping the person-to-person spread of virus via contaminated droplets from coughs and sneezes.

Success Factors: Success depends on health care facility and/or public health system ability to implement. Clearly communicate with affected communities about the rationale for use of isolation, and the responsibility for public officials to protect the safety and health of a community from communicable illnesses of high severity and high transmissibility.

Possible Drawbacks: Involuntary isolation is extremely restrictive and resource intensive. It limits personal liberties and can be controversial.

Possible Benefits: Isolation is effective in reducing the spread of illness. Use of involuntary isolation is a method to force compliance to the measure.

Settings and Use

- Isolation separates sick persons with a contagious disease from people who are not sick.
- Involuntary isolation is only recommended when an individual is not reliable or compliant with voluntary isolation for a disease that is highly severe and highly transmissible.
- For isolation and quarantine measures, state law requires making reasonable efforts to obtain voluntary compliance unless doing so would create a risk of serious harm (WAC 246-100-040(1)(a)). It is good public health policy, and it's also legally required.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: The local health officer and/or Secretary of Health may issue a detention order for involuntary isolation when they have reason to believe the person is infected with a communicable disease and poses a serious and imminent risk to the health and safety of others if not isolated. The local health officer must first make reasonable efforts to obtain voluntary

compliance, unless doing so would create a risk of serious harm. An order directly from a local health officer may last for up to 10 days. A court may order a longer period of isolation. Violation of an isolation order is a misdemeanor for which individuals may be arrested, fined, and imprisoned up to 90 days.

Local health officers, and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7), have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine
- WAC 246-100-070 – Enforcement of local health officer orders
- WAC 246-101-105 – Duties of the healthcare provider
- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- RCW 70.05.120(4) – Violations – Remedies - Penalties (misdemeanor for violation of an order)

Forms (find all instructions and forms on DOH's website):

- Emergency Involuntary Detention Order (Word)
  In addition to the form available at the link above, a COV-19 specific involuntary detention order is available. Please contact DOH for use.
- Confidential Schedule (Word)
  A local health officer may issue an isolation order immediately. Such an order is subject to court challenge. A court order is required to isolate an individual for longer than 10 days. Law enforcement may arrest an individual for violating a local health officer's or a court order. A court order is also enforceable through contempt proceedings.

  When no attempt is made to seek voluntary compliance due to the serious and imminent risk to the public, use the following forms:
- Summons (Word)
- Detention ex parte petition (Word)
- Confidential schedule (Word)
- Declaration supporting ex parte detention petition (Word)
- Order ex parte for involuntary detention (Word)

When voluntary compliance was sought, but the individual refused or otherwise indicated they would not comply, use the following forms:

- Summons (Word)
- Detention ex parte petition when voluntary detention refused (Word)
- Confidential schedule (Word)
- Declaration supporting ex parte detention petition when voluntary detention refused (Word)
- Order ex parte when voluntary detention refused (Word)

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. Tribal nations may decide their own criteria for isolation.

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Decisional Objectives/Key Decision Points

- Language for health officer order and involuntary detention court orders.
- Location(s) for isolation.
- Personal Protective Equipment (PPE) requirements for health care workers providing care for sick persons.
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan of moving sick persons under isolation to treatment facility, if isolated outside of a health care facility.
- Plans and logistics for specimen collection or providing other medical services, if needed.
- Communication strategies and plan to communicate decisions
    - Affected individuals and community members
    - Public, media, public officials
- Due process: understand and prepare for the rights of the affected patient if due process is initiated. Communicate steps for due process, such as administrative hearings, court review, or notification of right to object. Protect patient rights to privacy and restrictions on who can and cannot be notified (e.g., family member, employer)
- Plan to manage non-compliance with isolation. Identify progressively restrictive steps, up to court-ordered detention. Identify decision point for ordering person to a more restrictive location. Identify who will issue order and transport process.
- Determine when to release from isolation and process for notification.

Implementation Methods

- **Health officer order for emergency detention**
    - Once the person is ordered into isolation, the local health officer should seek a court order and must consider individual rights to due process. Seeking a court order quickly is a good idea if isolation sought is more than 10 days.
    - The needs of a person isolated or quarantined must be addressed to the greatest extent possible in a systematic and competent fashion, including, but not limited to, providing adequate food, clothing, shelter, means of communication with those in isolation or quarantine and outside these settings, medication, and competent medical care. Cultural and religious beliefs should be considered in addressing their needs.
- **Standing orders within a hospital**
    - Work with the hospital facility or designated health care provider and the health officer to create standing orders for the care of individuals in involuntary isolation.

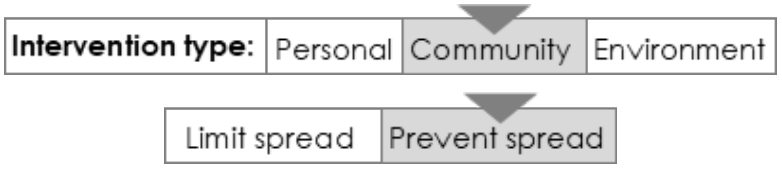
Special Considerations

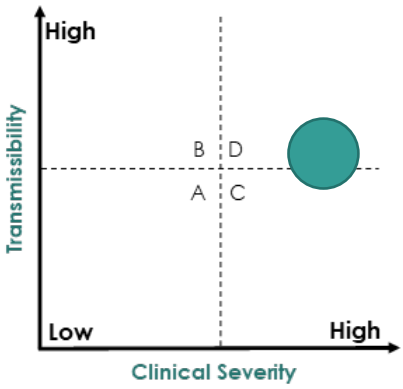
- Food, water, basic needs, and other support services for isolated patients.
- This intervention requires detailed coordination between state and local government officials.
- Court orders for involuntary isolation may be required.
- Tribal nations may decide their own criteria for isolation.
- When the individual is released, consider providing them with a letter that recognizes their release so they will not be mistakenly reported as not complying with the isolation order.

Intervention 9: Involuntary Quarantine of Contacts of Sick Persons

Reduce probability of transmission in the event that the contact becomes contagious before symptoms developed.

Transmissibility (1-5)	3
Clinical severity (1-7)	5-6.5
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Quarantine refers to the separation and restriction of movement of persons who, while not yet ill, have been exposed to an infectious agent and therefore may become infectious. Quarantine of exposed persons is a public health strategy intended to stop the spread of infectious disease. Quarantine is medically very effective in protecting the public from disease.

Certain infected but not yet symptomatic individuals may unknowingly infect friends, neighbors, and others in the community before becoming symptomatic.

In situations of highly transmissible and clinically severe infections where there are asymptomatic contacts who are not willing to quarantine, authorities may want to consider involuntary quarantine of contacts of sick persons to prevent possible disease spread, especially for novel pathogens of concern.

Success Factors: Success depends on health care facility and/or public health system ability to implement.

Possible Drawbacks: Involuntary quarantine is extremely restrictive and resource intensive.

Possible Benefits: Quarantine is extremely effective in reducing the spread of illness. Non-compliant persons can be prevented from spreading the disease.

Settings and Use

- Consider using involuntary quarantine for contacts who are not reliable or compliant and who were exposed to a sick person but are asymptomatic to avoid potential spread of disease.
- Involuntary quarantine at a designated facility is only recommended when an individual is not reliable or compliant.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: The local health officer and/or Secretary of Health may issue a detention order for involuntary quarantine when they have reason to believe the person is, or is suspected

to be, infected with or exposed to a communicable disease and poses a serious and imminent risk to the health and safety of others if not quarantined. The local health officer must first make reasonable efforts to obtain voluntary compliance, unless doing so would create a risk of serious harm. An order directly from a local health officer may last for up to 10 days. A court may order a longer period of quarantine. Violation of a quarantine order is a misdemeanor for which individuals may be arrested, fined, and imprisoned up to 90 days.

Local health officers, and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7), have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine
- WAC 246-100-070 – Enforcement of local health officer orders
- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- RCW 70.05.120(4) – Violations – Remedies - Penalties (misdemeanor for violation of an order)

Forms (find all instructions and forms on DOH's website):

- Emergency Involuntary Detention Order (Word)
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- Confidential Schedule (Word)
- A local health officer may issue an isolation order immediately. Such an order is subject to court challenge. A court order is required to isolate an individual for longer than 10 days. Law enforcement may arrest an individual for violating a local health officer's or a court order. A court order is also enforceable through contempt proceedings.

When no attempt is made to seek voluntary compliance due to the serious and imminent risk to the public, use the following forms:

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- Confidential schedule (Word)
- Declaration supporting ex parte detention petition (Word)

- Order ex parte for involuntary detention (Word)

When voluntary compliance was sought, but the individual refused or otherwise indicated that he or she would not comply, use the following forms:

- Summons (Word)
- Detention ex parte petition when voluntary detention refused (Word)
- Confidential schedule (Word)
- Declaration supporting ex parte detention petition when voluntary detention refused (Word)
- Order ex parte when voluntary detention refused (Word)

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Tribal

- Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. Tribal nations may decide their own criteria for isolation.

Decisional Objectives/Key Decision Points

- Language for health officer order and involuntary detention court orders.
- Definition of "close contact" (including length of exposure to ill person, travel history, etc.)
- Location(s) of quarantine facility (home, government facility, etc.)
- Length of quarantine
- Communication strategies and plan
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan to move persons under quarantine to a health care facility if they develop symptoms
- Plans and logistics for specimen collection or provision of other medical services, if needed.
- Active monitoring for persons under quarantine

Implementation Methods

- **Health officer order for emergency detention**
    - Once the person is ordered into quarantine, the local health officer should seek a court order and must consider individual rights to due process. Seeking a court order quickly is a good idea if isolation sought is more than 10 days.
    - The needs of a person isolated or quarantined must be addressed to the greatest extent possible in a systematic and competent fashion, including, but not limited to, providing adequate food, clothing, shelter, means of communication with those in isolation or

quarantine and outside these settings, medication, and competent medical care. Cultural and religious beliefs should be considered in addressing their needs.

- **Standing orders within a hospital**
    - Work with the hospital facility or designated health care provider and the health officer to create standing orders for the care of individuals in involuntary quarantine.

Special Considerations

- Food, water, basic needs, and other support services for quarantined individuals.
- This intervention will require detailed coordination between state and local government officials.
- Court orders for involuntary isolation may be required.
- Tribal nations may decide their own criteria for isolation.
- When the individual is released, consider providing them with a letter that recognizes their release so they will not be mistakenly reported as not complying with the quarantine order.

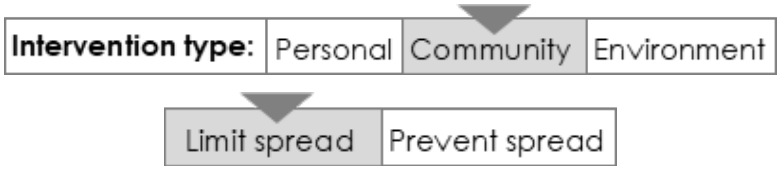
Decisional Objectives/Key Decision Points

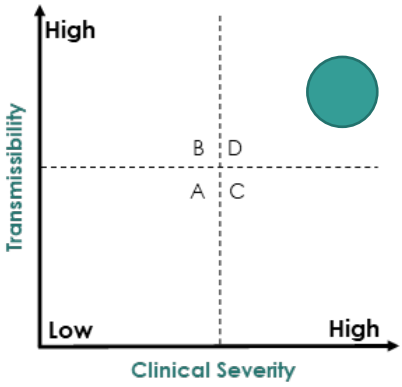
- Language for health officer order and involuntary detention court orders.
- Definition of “close contact” (including length of exposure to ill person, travel history, etc.)
- Location(s) of quarantine facility (home, government facility, etc.)
- Length of quarantine
- Communication strategies and plan
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan to move persons under quarantine to a health care facility if they develop symptoms
- Plans and logistics for specimen collection or provision of other medical services, if needed.
- Active monitoring for persons under quarantine

Intervention 10: Recommend or Order Cancellation of Major Public and Large Private Gatherings

Reduce probability of transmission by reducing the number of the interpersonal contacts.

Transmissibility (1-5)	4
Clinical severity (1-7)	5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Social distancing measures, such as cancellation or postponement of mass gatherings, reduce opportunities for person-to-person virus transmission and can help delay the spread and slow the exponential growth of disease spread. The optimal strategy is to implement these measures simultaneously in places where people gather.

Canceling mass gatherings, in combination with other social distancing measures (e.g., patient isolation, quarantine of exposed persons, and school closures), may help reduce virus transmission.

Success Factors: Success depends upon event sponsor compliance and authorities' ability to enforce effectively.

Possible Drawbacks: May result in revenue loss, public outrage, or political backlash, and may disproportionately affect certain cultural and community groups.

Possible Benefits: Reduces opportunities for widespread disease transmission by reducing interpersonal contacts and increasing social distance.

Settings and Use

- Social distancing measures can be implemented in a range of community settings, including public places where people gather (e.g., parks, houses of worship, theaters, sports arenas).
- Modifying, cancelling, or postponing events is an approach that might reduce face-to-face contact in community settings.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods. This includes issuing orders to cancel events.

Key Stakeholders: Decision should be made in coordination with local elected officials (such as mayor, city council, county council, and/or county executive), emergency managers, local law enforcement, impacted businesses, proprietors, cultural and religious leaders, event sponsors and event organizers.

Applicable Law(s) for Decision Makers:

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders

State

Key Decision Makers: In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease and issue orders to cancel events. The Secretary of Health also has the authority to promote public health activities and educational campaigns.

The Governor has broad authority to proclaim a state of emergency in order to preserve life, health, property, or the public peace (RCW 43.06.220). A governor declared emergency could trigger limitations such as curfews, prohibitions of people on streets and open areas, limit use of streets, highways or public ways; or other broad restrictions outlined by the law, such as prohibiting travel.

Washington's laws against discrimination are outlined in RCW 49.60. Public officials should consider how communities may be impacted and take action to remove stigma that may marginalize or discriminate against groups.

Applicable Law(s):

- RCW 43.06.220 – State of emergency – powers of governor pursuant to proclamation
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)
- RCW 49.60 – Discrimination – Human Rights Commission

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. They may decide their own criteria for canceling large gatherings.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders.

Applicable Law(s):

- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services

Decisional Objectives/Key Decision Points

- Establish guidance/requirements needed to request or order the cancellation of gatherings.
- Identify affected events and disproportionately impacted communities.
    - Research upcoming cultural and religious holidays, observances, and events.
    - Assess economic impact for both individuals and larger communities (loss of wages, tourism revenue)
- Plan community engagement efforts, methods, and approaches that are responsive to the needs, preferences, and values of the community.
- Develop strategies to gain buy-in from event organizers and leadership
- Plan for enforcement of cancellations
    - Partner with trusted community leaders
    - Assess need, benefit, and potential unintended consequences of working with law enforcement/security personnel.
    - Create mitigation strategies, as needed, to address any real, potential, or perceived issues or consequences of enforcement activities.
- Determine whether events should be pre-emptively canceled.
- Proactively address unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Healthcare Considerations

- Consider impact on the healthcare system and their current capacity and if the intervention would reduce or increase burden.
- Determine if implementation would mitigate burden on health care system to maintain essential medical services, especially for underserved populations.
- Identify if this would decrease or increase absenteeism among health care workers.
- Potential legal and ethical issues involving altered standards of care.

Implementation Methods

- **Health officer order or request that major government-sponsored events/gatherings be cancelled or postponed.**
    - Meet with event organizers, committees and employees.
        - Explain the situation
        - Offer alternatives, if any, including new location, rescheduling the event, or changing entrance rules.
    - Government-sponsored events or gatherings may be affected anyway due to the Continuity of Operations Plan.
    - Work with public information officers/communication teams to get the information out with relevant Q&As and FAQs
- **Create and distribute accessible, public messaging about closures**
    - General messaging about why these measures are being taken.

        - Work with communications team to create messages that:
            - Meet readability and accessibility guidelines.
            - Are culturally and linguistically relevant.
            - Are translated into the most spoken languages in the affected area.
            - Are relevant/adaptable to the changing nature of the incident/outbreak.
        - Communicate through multiple platforms and channels appropriate to the affected communities
        - Engage with community leaders or representatives for advice and buy-in.
        - Provide messages to LHJs and other partners to share with their constituents.
        - Provide consistent messaging throughout the state via media outreach.
        - Develop tailored messaging for disproportionately impacted communities.
    - Specific messaging about the cancellation of specific events.
        - Display appropriate messaging in places where attendees may see them.
        - Work with event organizers and to use their communication methods.

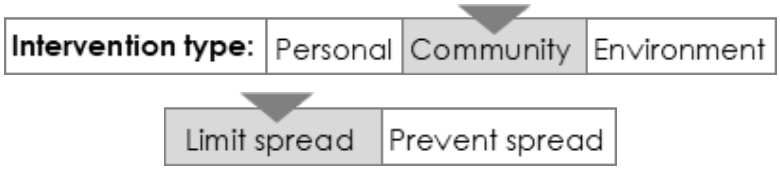
Special Considerations

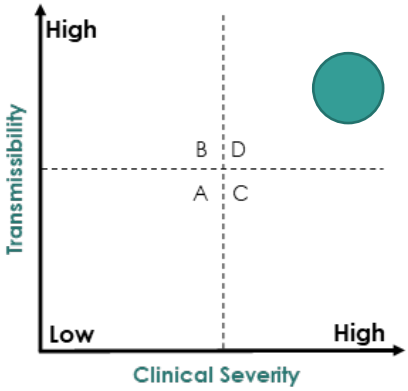
- Requires excellent and effective communication mechanisms to notify community of details and rationale. Communications must be culturally relevant and in a language and format that the audience can understand to be effective.
- Any attempts to implement social distancing in cultural & religious gatherings should be informed by cultural & religious leaders.
- Canceling events could affect civic participation and social cohesion. It could also create an opportunity for discrimination if only certain events are closed.
- Postponing the event may benefit or negatively impact employees as well as attendees or participants, depending on the event and the individual's role.
- This intervention will require detailed coordination between state, local government officials, and community organizations/leaders/groups.
- This intervention will require detailed coordination with the event organizers and planners.
- Cancellation of large events may affect individual income, revenue, employment, economic opportunity, and commerce.
- Coordination with the Office of the Governor and/or local government leadership may be needed.
- There should be consistency in which events are cancelled. Cancellation should not be based on the communities likely to attend or work at the event.
- Culturally and religiously diverse communities may be disproportionally impacted.
- Families on the brink of housing insecurity may be disproportionately impacted by loss of wages, potentially increasing risk of missing rent payments, potentially increasing risk of eviction and homelessness. Homeless individuals already experience barriers to health care, services, and information.
- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.

Intervention 11: Recommend or Order Closure of Public or Private Sites within impacted communities

Viruses quickly and easily spread in places where people gather in close contact, such as schools, child care facilities, workplaces, and public buildings. Dismissing or closing such facilities may be considered to limit disease spread by reducing the number of interpersonal contacts.

Transmissibility (1-5)	4
Clinical severity (1-7)	5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Social distancing measures, including closure of buildings, reduce opportunities for person-to-person virus transmission and can help delay the spread and slow the exponential growth of disease spread. If disease spread is occurring in a school, child care facility or public building, dismissing students, staff, or the public from these locations or closing the locations early can limit further spread. The optimal strategy may be to implement several social distancing steps simultaneously where large groups of people gather.

Success Factors: Early implementation of dismissals or closures to limit spread. Facility compliance and authorities' ability to enforce effectively.

Possible Drawbacks: May result in missed school days, revenue loss, public outrage, or political backlash. It may disproportionately affect certain cultural and community groups. Low income and other vulnerable communities may be put at risk for non-outbreak related harm if they are unsupervised, don't have access to an adult caretaker, or cannot communicate with the outside world if there is an emergency. It may cause disruption for families and communities. Adults may experience missed work and loss of income from their workplace closure or to stay home to care for children.

Possible Benefits: Reduces opportunities for widespread disease transmission by reducing interpersonal contacts and increasing social distance.

Settings and Use

Specific priority settings include schools, child cares, workplaces, meetings, and other places where people gather (e.g., parks, religious institutions, theaters, and sports arenas).

Early dismissal or closing facilities is a social distancing measure that may reduce face-to-face contact in community settings to reduce the spread of diseases transmitted by contact, droplets, or air. Choose social distancing measures depending on the severity of the disease.

School or child care: Examples of social distancing, closures and dismissals could include:

- Dismissing or cancelling classes and use web-based distance learning instead
- Pre-emptive, coordinated school closures or dismissals at child care facilities, K–12 schools, and institutions of higher education.
- Canceling school concerts, after-school programs, or sporting events.

Workplaces and public buildings: Many work settings involve shared work space, equipment, and face-to-face contact. Public buildings can bring many people into close contact. Examples of social distancing for these settings include telecommuting and remote-meeting options in workplaces.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

When there is a potential for an outbreak within a school or childcare center, local health officers have the authority to order school superintendents and childcare center administrators to close their facilities, cancel events, and/or exclude students, staff, and volunteers.

Key Stakeholders: Decision should be made in coordination with school superintendents, boards of education, local elected officials (such as mayor, city council, county council, and/or county executive), child care administrators, private sector, emergency managers, local law enforcement, impacted businesses, proprietors, event sponsors and event organizers.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders
- WAC 246-110-020 – Control of contagious disease (schools and childcare centers)

State

Key Decision Makers: In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease. The Secretary of Health also has the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department of Health created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)

- RCW 49.60 – Discrimination – Human Rights Commission

Tribal

- Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. They may decide their own criteria for canceling school, child care, and tribal facilities.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders.

Applicable Law(s):

- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services

Decisional Objectives/Key Decision Points

- Scale of closures (e.g. specific schools, districts, ages, geographic regions)
- Identify affected facilities
- Determine whether closure is limited to certain at-risk groups or applies to the general public.
- Length of closure
- Determine building cleaning protocols, if needed.
- Personal Protective Equipment (PPE), if any, for persons cleaning closed facilities
- Communication strategies and plan
- How to get employer engagement and buy-in

Healthcare Considerations

- Consider impact on the healthcare system and their current capacity and if the intervention would reduce or increase burden.
- Determine if implementation would mitigate burden on health care system to maintain essential medical services, especially for underserved populations.
- Increase in absenteeism among health care workers if schools and childcare are closed.
- Potential legal and ethical issues involving altered standards of care.

Implementation Methods

- **Local health officials and local school administrators work closely together in decision making to implement closures and dismissals**.
    - Include communication to parents and the public in case of school or child care closure.
    - Include communication to employees in case of a workplace closure.
- **Communicate to the media, partners, and the public about any facility or building closure.**
    - Create culturally relevant publications in all needed languages.
    - Work through the building or organization's communication channels.
    - Communicate on multiple platforms appropriate to the affected communities

- Provide consistent messaging throughout the state via media outreach.

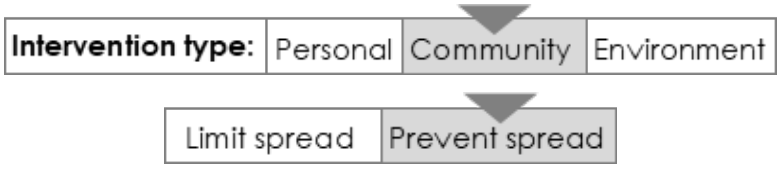
Special Considerations

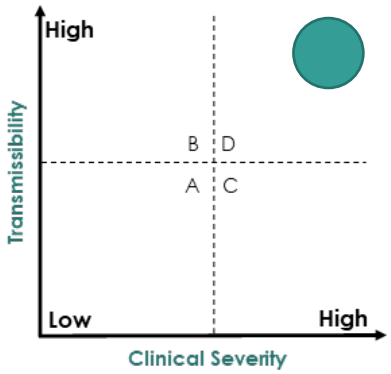
- Local health policies and risk communication strategies should take into account community attitudes and acceptance of preventive behaviors related to social distancing, which might differ across racial/ethnic, cultural, and economic groups.
- Strategies can be used in settings like schools (e.g., closure), workplaces (e.g., phone conferences instead of in-person meetings), and mass gatherings (e.g., postponement or cancellation) to reduce spread and infections. Multiple social distancing measures can be implemented simultaneously.
- Regarding school and child care closures, public officials should make decisions that balance local benefits and potential harms and consider timing, flexibility, and modifications to intervention based on the severity of local conditions.
- Requires advanced planning and preparation, as well as political leadership; collaboration between public health and emergency management agencies; coordination with schools, child care, businesses, nongovernmental organizations, and community- and faith-based organizations; and clear communication with the public.
- Cancelling school, child care facilities, workplaces, and public buildings would reduce income for staff working in those locations. Additionally, this could impact the income of working parents left without childcare and school and impact the ability for students to learn.
- Consider options for students who receive free or reduced-price student lunches to continue receiving meals during missed school days. Families experiencing housing insecurity or homelessness may need additional and proactive planning to ensure children are able to access alternative meals during closures.
- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Intervention 12: Prevent Non-Emergency Travel Outside the Home

Limiting travel outside of the home will reduce probability of the transmission by reducing the numbers of the interpersonal contacts. Travel should be restricted to emergency use only.

Transmissibility (1-5)	5
Clinical severity (1-7)	5.5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

This intervention is a more extreme measure of social distancing, which reduces occasions for person-to-person virus transmission to help delay the spread and slow the exponential growth of a pandemic.

Success Factors: Success depends upon compliance and authorities' ability to enforce effectively.

Possible Drawbacks: Will prevent the operation of public entities and private businesses; the effect will be felt economically by employees as loss of income, and the public as lack of commodity availability. Revenue loss; public outrage; and political backlash are possible. Travel restrictions may disproportionately affect certain cultural and community groups.

Possible Benefits: Reduces opportunities for direct or indirect disease spread, and may prevent a disease from entering new geographical region.

Settings and Use

- Travel restrictions are conditionally recommended during an early stage of a localized and extraordinarily severe pandemic for a limited period of time. Before implementing, consider cost, acceptability and feasibility, as well as ethical and legal considerations, in relation to this measure.
- This intervention should be considered when less-restrictive interventions have failed or to prevent disease introduction into new geographical areas.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: Local governments have police power to protect the public health under the U.S. Constitution's 10th Amendment, granting authority to implement restrictions on private rights for the sake of public welfare, order, and security. It also includes reasonable regulations to protect public health and safety. Under the 10th Amendment, police powers resides with state and local authorities unless specifically delegated to federal government. Local governments

may need to collaborate with state and federal partners as the complexity of the emergency increases. Local governments may request support from the state.

The Governor has broad authority to proclaim a state of emergency in order to preserve life, health, property, or the public peace (RCW 43.06.220). A governor declared emergency could trigger limitations such as curfews, prohibitions of people on streets and open areas, limit use of streets, highways or public ways; or other broad restrictions outlined by the law, such as prohibiting travel.

Washington's laws against discrimination are outlined in RCW 49.60. Public officials should consider how communities may be impacted and take action to remove stigma that may marginalize or discriminate against groups.

Key Stakeholders: Decision should be made in coordination with local elected officials (such as mayor, city council, county council, and/or county executive), private sector, emergency managers, local law enforcement, school superintendents, boards of education, health care, and transportation agencies.

Applicable Law(s):

- RCW 43.06.220 – State of emergency – powers of governor pursuant to proclamation
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- RCW 49.60 – Discrimination – Human Rights Commission
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders.

Applicable Law(s):

- 42 U.S.C. § 201 *et seq.* – Public Health Service Act
- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services
- Public Law No. 116-22 – 2019 Pandemic and All-Hazards Preparedness and Advancing Innovation Act (PAHPAIA)
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act

Decisional Objectives/Key Decision Points

- Define "essential travel"
- Define geographic location for ban on non-essential travel and length of ban.
- Communication strategies and communication plan
- Enforcement plan in coordination with law enforcement
    - Personal Protective Equipment (PPE) needed for enforcement officials
- Movement plan for individuals with essential travel needs
- Consider support of elected officials in issuing the order
- Consider how individual or community will access emergency services, if needed, during the restriction period
- Determine need for material support and services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing services.
- Plans and logistics for specimen collection or providing other medical services, if needed.

Healthcare Considerations

- Consider impact on the healthcare system and their current capacity and if the intervention would reduce or increase burden.
- Determine if implementation would mitigate burden on health care system to maintain essential medical services, especially for underserved populations.
- Increase in absenteeism among health care workers if schools and childcare are closed.
- Potential legal and ethical issues involving altered standards of care.

Implementation Methods

- Health officer order to the public to cease all non-essential travel.
- Work with law enforcement agencies to enforce.
    - Enforcement must be feasible and within the capabilities of the agency.
- Distribute messaging to help the public understand the reason for the measure and what to do.
    - Ensure messaging is culturally and linguistically appropriate for any groups disproportionately affected by the travel restriction. Ensure messaging is accessible for individuals with disabilities and available in alternative formats.

Special Considerations

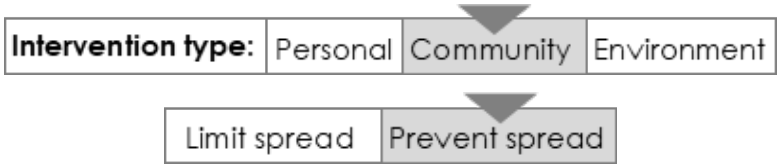
- Consider obtaining support of elected officials in issuing such a restrictive order.
- This intervention will require detailed coordination between state and local government officials.
- Law enforcement will be necessary to enforce the travel ban.
- Schools, transit services, and places of work will be affected.
- Sovereign tribal nations may decide their own criteria for non-emergency travel.
- Consider possible impacts to the health care system, such as an increase in people seeking care.
- Plan in advance any services needed to support the community during the restriction period.

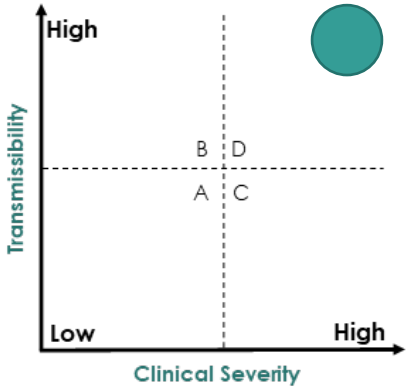
- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Intervention 13: Establish a Cordon Sanitaire

Contains a communicable disease within specific geographical boundaries. Legally enforceable order that restricts movement into or out of an area of quarantine to reduce spread in and to persons outside affected area.

Transmissibility (1-5)	5
Clinical severity (1-7)	5.5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

A cordon sanitaire is the restriction of movement of people in or out of the defined geographic area in order to contain disease within specific geographical boundaries. It is created around an area experiencing an outbreak or disease to prevent spread. This is a form of isolation and quarantine when applied to all inhabitants of an area as a sanitary barrier.

Success Factors: Success depends upon compliance and authorities' ability to enforce effectively. It also depends on engaging affected people to communicate the reason for the measure and gain their support for complying.

Possible Drawbacks: Controversial because it infringes on personal freedom of movement. May lead to feeling isolated or result in the isolation of an entire community. People could be stranded without support. Commerce will be heavily compromised. Revenue loss, public outrage, and political backlash are possible. It may disproportionately affect certain cultural and community groups, low-income families, rural and under-resourced communities, and individuals with un-related acute, chronic, or severe medical needs. May be difficult to solicit cooperation.

Possible Benefits: May contain a disease within the boundaries of the cordon. Reduces need for urgent evaluation of large numbers of potential contacts to determine indications for activity restrictions. May reduce transmission among groups without explicit activity restrictions.

Settings and Use

This strategy can be used when extensive transmission is occurring, a significant number of cases lack identifiable epidemiologic links at the time of evaluation, and/or restrictions placed on persons known to have been exposed are insufficient to prevent further spread.

Consider this intervention with highly transmissible and clinically severe disease that has requires geographic containment. This could apply to diseases that are easily transmitted

human-to-human via contact, droplet, and/or airborne routes when less-restrictive interventions have failed, or to prevent introduction into new geographical areas.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: Local governments have police power to protect the public health under the US Constitution's 10th Amendment, granting authority to implement restrictions on private rights for the sake of public welfare, order, and security. It also includes reasonable regulations to protect public health and safety. Under the 10th Amendment, police powers resides with state and local authorities unless specifically delegated to federal government. Local governments may need to collaborate with state and federal partners as the complexity of the emergency increases. Local governments may request support from the state.

The Governor has broad authority to proclaim a state of emergency in order to preserve life, health, property, or the public peace (RCW 43.06.220). A governor declared emergency could trigger limitations such as curfews, prohibitions of people on streets and open areas, limit use of streets, highways or public ways; or other broad restrictions outlined by the law, such as prohibiting travel.

Washington's laws against discrimination are outlined in RCW 49.60. Public officials should consider how communities may be impacted and take action to remove stigma that may marginalize or discriminate against groups.

Applicable Law(s):

- RCW 43.06.220 – State of emergency – powers of governor pursuant to proclamation
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
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- WAC 246-100-070 – Enforcement of local health officer orders

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders. HHS Secretary may declare a public health emergency under 42 USC sec. 247, which is a way to get Congress to fund a public health emergencies account, but declarations are often made receiving without associated Congressional funding.

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 201 *et seq.* – Public Health Service Act
- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law No. 116-22 – 2019 Pandemic and All-Hazards Preparedness and Advancing Innovation Act (PAHPAIA)
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act

Decisional Objectives/Key Decision Points

- Geographic location and timeframe of cordon sanitaire.
- Communication strategies and communication plan, including:
    - How affected community will receive updates
    - Whether to set up a call center
- Work with law enforcement to determine an enforcement strategy, including non-compliance.
    - Personal Protective Equipment (PPE) for officials enforcing the cordon sanitaire
- Movement of individuals and essential personnel into and out of the cordoned area for health and safety reasons
- Movement of materials (e.g. food, medical supplies/services, waste management) into and out of the cordoned area and providing essential services (e.g. utilities and water), and who will authorize providing services.
- Plan for health and emergency services in the cordoned area, such as mental health support, telehealth, and emergency medical transport
- Plans and logistics for specimen collection or providing other medical services, if needed.
- Identify communities that will be disproportionately impacted or burdened.
- Plan community engagement efforts, methods, and approaches that are responsive to the needs, preferences, and values of the community.
- Proactively address unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Implementation Methods

- **Health officer orders a cordon for a specific geographic area.**
    - Work with local health officer to determine best geographic area; work with the Washington State Department of Transportation and other transportation partners to transport cases and/or contacts to or from a geographic area.
- **Work with law enforcement agencies to enforce the cordon.**

    - Determine law enforcement needs and whether the agencies need additional officers.
- **Create and distribute accessible, public messaging,**
    - General messaging about why these measures are being taken.
        - Work with communications team to create messages that:
            - Meet readability and accessibility guidelines.
            - Are culturally and linguistically relevant.
            - Are translated into the most spoken languages in the affected area.
            - Are relevant/adaptable to the changing nature of the incident/outbreak.
        - Communicate through multiple platforms and channels appropriate to the affected communities
        - Engage with community leaders or representatives for advice and buy-in.
        - Provide messages to LHJs and other partners to share with their constituents.
        - Provide consistent messaging throughout the state via media outreach.
        - Develop tailored messaging for disproportionately impacted communities.

Special Considerations

- Requires excellent communication mechanisms to notify community of details and rationale.
- Low-income families, immigrant/refugee communities, communities of color, and individuals with criminal records may be disproportionally impacted by enforcement activities.
- Requires plans/protocols for providing essential services. Plan movement of materials (e.g., food, medical supplies/services, and waste management) into and out of the cordoned area and essential services (e.g., utilities and water) to avoid additional public health issues.
- Requires detailed coordination between state, local government officials, and community organizations/leaders/groups.
- Requires law enforcement to enforce travel restrictions and maintain security at borders, but their involvement may create stress, trauma/re-traumatization, and fear for certain communities.
- Heavily affects individual income, revenue, employment, economic opportunity, and commerce.
- Limits transportation for persons requiring medical evaluation, with appropriate infection control precautions. Consider use of telehealth resources to support this need, but that telehealth may not be an accessible resource for all individuals and communities in need.
- May disproportionately impact individuals with other, non-related chronic, severe, and acute medical conditions that require ongoing/follow-up treatment or management.
- Requires plan to divert flow of critical infrastructure supplies and materials that normally move through the cordoned area.
- Requires plan to provide mental health support.
- Risk of noncompliance, particularly as length of time increases. May require enforcement for noncompliance.
- When an entire community is involved, requires cooperation with neighboring jurisdictions that may not be using a similar intervention, particularly in situations where persons live in one city and work in another and only one locale is affected by the intervention.
- Coordination with the Office of the Governor and/or local government leadership may be needed.
- Tribal nations may decide their own criteria for cordoning and any relevant security concerns.
- Families on the brink of housing insecurity may be disproportionately impacted by loss of wages, potentially increasing risk of missing rent payments, potentially increasing risk of eviction and

homelessness. Homeless individuals already experience barriers to health care, services, and information.

- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

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To: promed-post@promedmail.org; promed-edr-post@promedmail.org; promed-ahead-post@promedmail.org
Subject: PRO/AH/EDR> COVID-19 update (22): global, more importations to new countries, 1st U.S. death, WHO
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CORONAVIRUS DISEASE 2019 UPDATE (22): GLOBAL, MORE IMPORTATIONS TO NEW
COUNTRIES, 1ST U.S. DEATH, WHO
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A ProMED-mail post
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In this update:
[1] Global update: Johns Hopkins CSSE [accessed at 8:00 p.m. GMT-5]
[2] China: China National Health Commission 28 Feb 2020
[3] Countries with notable local transmission (South Korea, Italy,
Iran)
[4] New countries confirming cases
[5] Austria: non-importation case
[6] Selected media reports of interest: 1st U.S. death (WA)
[7] WHO situation report 39 (as of 28 Feb 2020)

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[1] Global update: Johns Hopkins CSSE [accessed at 9 p.m. GMT-5]
Date: Sat 29 Feb 2020
Source: Johns Hopkins CSSE (Center for Systems Science and
Engineering) [edited]
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/ 285 / 355 / 454 / 542 / 621 / 634 / 634 / 634 / 691 / 691 / 691 /
705 / 705 / 705 / 705 / Others (Diamond Princess)

Total number of reported deaths: 2977
Deaths outside of Mainland China: 216 [including 6 from the Diamond
Princess]
Iran: 43
South Korea: 17
Hong Kong: 2
Italy: 29
Diamond Princess: 6
France: 2
Japan: 5
Philippines: 1
Taiwan: 1
USA: 1

Data sources: WHO, CDC, ECDC, NHC, and DXY

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[As mentioned previously, this website is constantly updated as new information comes in, so it is likely that when you read this post, the numbers will not match the linked numbers because they will have been updated since the post was prepared.

According to the data on the Johns Hopkins website, there are now a total of 7138 confirmed cases of COVID-19 reported from 63 countries/locations outside mainland China, representing an increase of 1835 cases reported in the past 24 hours, with South Korea accounting for 1189 of the newly reported cases, Italy accounting for 240 of the newly reported cases, and Iran accounting for 205 of the newly reported cases. There has been a global total of 2977 reported deaths, of which 107 were reported from outside of Mainland China. Other countries experiencing increases of more than 10 cases include Japan, 13 new cases; Germany, 31 cases; France, 43 new cases; and Spain, 13 new cases.

For the 4th consecutive day, more cases have been reported from outside of Mainland China than within Mainland China. - Mod.MPP]

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[2] China: China National Health Commission 28 Feb 2020
Date: Sun 1 Mar 2020
Source: China National Health Commission [in Chinese, machine trans. edited]
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.nhc.gov.cn%2Fxcs%2Fyqtb%2F202003%2F9d462194284840ad96ce75eb8e4c8039.shtml&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186349677467793&sdata=%2FkVlnjSNyazpspVyUdWDGYalUY8aXc1mJH1NKShuDjU%3D&reserved=0>

At 04:00 on [29 Feb 2020], 31 provinces (autonomous regions, municipalities) and the Xinjiang Production and Construction Corps reported 573 new confirmed cases, 35 new deaths (34 in Hubei and 1 in Henan), and 132 new suspected cases.

On the same day, 2623 cases were cured and discharged, 8620 were close contacts of medical observation, and 299 cases of severe cases were reduced.

As of 24:00 on [29 Feb 2020], according to reports from 31 provinces (autonomous regions and municipalities) and the Xinjiang Production and Construction Corps, there were 35 329 confirmed cases (of which 7365 were severe cases), 41 825 were cured and discharged, and 2870 were fatal cases. A total of 79 824 confirmed cases have been reported, and there are 851 suspected cases. A total of 660 716 close contacts were traced, and 51 856 close contacts were still in medical observation.

There were 570 new confirmed cases in Hubei (565 in Wuhan), 2292 new cured cases (1675 in Wuhan), 34 new deaths (26 in Wuhan), and 32 959 confirmed cases (27 700 in Wuhan). Among them, 7107 were severe cases (6393 in Wuhan). A total of 31 187 discharged patients were cured (19 227 in Wuhan); there were a total of 2761 deaths (2195 in Wuhan) and a total of 66 907 confirmed cases (49 122 in Wuhan). There were 64 new suspected cases (50 in Wuhan) and 646 suspected cases (393 in Wuhan).

A total of 144 confirmed cases were reported from Hong Kong, Macao, and Taiwan: 95 in the Hong Kong Special Administrative Region (33 discharged, 2 died), 10 in Macau Special Administrative Region (8 discharged), and 39 in Taiwan (9 discharged, 1 died).

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<promed@promedmail.org>
and
ProMED-mail Rapporteur Kunihiko Iizuka

[According to the report above, there have now been a total of 79 824 cases of confirmed COVID-19 reported from China, representing an increase of 573 cases in the past 24 hours, of which 570 (99.5%) were in Hubei province. In addition, there were 35 deaths reported, with 34 (97.1%) reported in Hubei. There was 1 new case reported from Hong Kong.

A good map of China showing provinces can be found at
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.chinadiscovery.com%2Fchina-maps%2Fchina-provincial-map.html&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186349677467793&sdata=HJxnqpcoM35RI0KuWn8KcwVKqvpt%2FEfyGGIPMfk49vc%3D&reserved=0>,
and a HealthMap/ProMED-mail map can be seen at
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fhealthmap.org%2Fpromed%2Fp%2F155&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186349677467793&sdata=QZD0rqgq7TepYfP%2FJwnQP0zpWeQPPK7yuTtxh8nJ3pY%3D&reserved=0>. - Mod.MPP]

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[3] Countries with notable local transmission (South Korea, Italy, Iran)
A. South Korea: 3150 total cases, 17 deaths
Official report from KCDC
Date: Sat 29 Feb 2020
Source: Ministry of Health and Welfare, Korean CDC [in Korean, machine trans., edited]
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.mohw.go.kr%2Freact%2Fal%2Fsal0301vw.jsp%3FPAR_MENU_ID%3D04%26MENU_ID%3D0403%26page%3D1%26CONT_SEQ%3D353256&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186349677467793&sdata=5V2tKdTBcbuYK%2B7%2Fpt7BE%2F6tT9eDJv0DB%2BfPTBsWNEE%3D&reserved=0>

Data taken from a table on the website of the Korean MOHW (Ministry of Health and Welfare). Data source: Korean CDC

Date and time:
[28 Feb 2020 16:00 (4:00 PM) KT 2337 confirmed cases, 13 deaths]
29 Feb 2020 9:00 AM KT 2931 confirmed cases, 16 deaths
29 Feb 2020 16:00 (4:00 PM) KT 3150 confirmed cases, 17 deaths

Change: 813 newly confirmed infections; 4 new deaths from 28 Feb 2020 16:00 (4 PM) reported cases, among previously confirmed cases

Distribution of cases by province: total case / change from 16:00 (4 PM) 28 Feb 2020 to 16:00 (4 PM) 29 Feb 2020
Seoul 77 / 15
Busan 80 / 15
Dae-gu 2296 / 717
Incheon 6 / 2
Gwangju 9 / 0
Daejeon 13 / -1 (changed from Daejeon to Dae-gu)
Ulsan 17 / 3
Sejong 1 / 0
Gangwan 7 / 0
Gyeonggi 82 / 10
Gyeongbuk 488 / 79
Gyeongnam 59 / 10
Chungbuk 10 / 1
Chungnam 48 / 13
Jeonbuk 5 / 0
Jeonnam 3 / 2
Jeju 2 / 0

Total: 3150 / 813

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[In the past 24 hours the tally of confirmed cases of COVID-19 in South Korea has increased by 813 cases and 4 deaths.

Dae-gu province and Gyeongbuk provinces have reported the highest number of cases, 2296 and 488, respectively. Dae-gu is completely surrounded by Gyeongbuk province in the central eastern part of South Korea. Dae-gu has been the epicenter of this ongoing outbreak.

A good map showing provinces in South Korea can be found at
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.nationsonline.org%2Foneworld%2Fmap%2Fkorea-south-administrative-map.htm&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186349677467793&sdata=7tp3C0dlzod4%2FJx5LPqNyCU5ieXeVs2a%2BYa%2Fdgs4j5M%3D&reserved=0>.
- Mod.MPP]

B. Italy: 1049 cases 29 deaths
Date: Sat 29 Feb 2020
Source: Italian Government Health Ministry [in Italian, machine trans, edited]
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.salute.gov.it%2Fportale%2Fnews%2Fp3_2_1_1_1.jsp%3Flingua%3Ditaliano%26menu%3Dnotizie%26p%3Ddalministero%26id%3D4133&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186349677467793&sdata=hdpydwWx5xyGrPQbcxXEB1p8g50RH53PyddgUjSOTfE%3D&reserved=0>

Regarding health monitoring relating to the spread of coronavirus on the national territory, 1049 people are currently positive for the virus.

There are 401 patients hospitalized with symptoms, with 105 in intensive care, while 543 are in home isolation. The number of people healed is 50. The dead are 29; this number, however, can be confirmed only after the Istituto Superiore di Sanita has established the actual cause of the death.

The number of people infected in the individual regions is as follows:
615 in Lombardy,
191 in Veneto,
217 in Emilia-Romagna,
42 in Liguria,
11 in Piedmont,
11 in Tuscany,
11 in the Marche,
4 in Sicily,
13 in Campania,
6 in Lazio,
3 in Puglia,
2 in Abruzzo,
1 in Calabria, and
1 in the Autonomous Province of Bolzano.

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[The current tally of confirmed cases of COVID-19 in Italy is now 1049, including 29 deaths, up from 888 cases and 21 deaths reported yesterday (28 Feb 2020).

Italy is a major tourist point for other Europeans, with Lombardy being a major commercial hub. In addition, Italians are highly mobile and travel throughout Europe, and Italy is a major tourist location for Europeans and the Americas. See section [6] below for imported cases from Italy to other countries in Europe, a sign of this mobility.

A map of Italy showing regions:
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.mapsofworld.com%2Fitaly%2Fregions.html&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186349677467793&sdata=WpYfiPfWx9m8aFRAkP2d2WFnPIb9Ou5p6YQf%2FeMdx%2FA%3D&reserved=0>. - Mod.MPP]

C. Iran: 593 cases, 43 deaths
Date: Sat 29 Feb 2020
Source: Medical Express [edited]
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fmedicalxpress.com%2Fnews%2F2020-02-iran-surge-coronavirus-cases.html&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186349677467793&sdata=wJh2slf3WSbbDg%2FIOjILPgFmvkQwDNJhFt%2FZxxeIUC8%3D&reserved=0>

Iran on Saturday [29 Feb 2020] reported a surge in new coronavirus cases as the number of deaths jumped to 43, but it dismissed as "rumours" a report the real toll was much higher. Since it announced its 1st deaths from COVID-19, Iran has scrambled to bring the outbreak under control, shutting schools, suspending cultural and sporting events, and halting meetings of the cabinet and parliament.

The health ministry on Saturday [29 Feb 2020] reported 9 new deaths and a 53% jump in infections over the previous 24 hours, taking the overall totals to 43 deaths among 593 cases. That was the highest number of new cases for a single day since [19 Feb 2020], when Iran announced its 1st 2 deaths in Qom, a centre for Islamic studies and pilgrimages, including from abroad.

Health ministry spokesman Kianoush Jahanpour accused foreign media of spreading misinformation about the outbreak. "Given the rumours and false and contradictory content that may be published from satellite networks or media, which are not well-intentioned towards Iranian people, I must say that what we publish as definitive statistics is based on the latest definitive findings of laboratory tests," he said.

Fear of the virus is palpable on the streets of Tehran, which have been less crowded than usual as people apparently stayed at home. Traffic was flowing more freely than normal in the capital on Saturday morning [29 Feb 2020], when it usually chokes the streets at the start of the working week. The office of Tehran's governor announced a reduction in working hours in a bid to reduce the chances of the virus spreading, state television reported.

Shops and pharmacies have been struggling to meet demand as people stock up on bleach, disinfectant wipes, face masks, and other sanitary products, as well as non-perishable food.

"Business... has hit rock bottom because of the coronavirus," said [H], owner of one of Tehran's now-empty restaurants. Large posters have gone up on advertising billboards in the capital urging people to follow hygiene guidelines such as washing hands and not touching handrails and other objects in public places.

Jahanpour said on Saturday [29 Feb 2020] that 205 cases had been

detected in the previous 24 hours, increasing the total of confirmed infections to 593. Among the latest infections were a new outbreak of 22 cases in Golestan, a northeastern province on the Caspian Sea coast.

Many of the country's neighbours have reported coronavirus infections in people linked to Iran, and most have imposed restrictions on travel to and from the Islamic republic. On Wednesday [26 Feb 2020], Iranian authorities announced domestic travel restrictions for people with confirmed or suspected infections.

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[In the past 24 hours, the number of cases of COVID-19 confirmed in Iran has grown from 388 to 593, an increase of 205 newly confirmed cases. The number of fatalities has also increased from 34 to 43, an increase of 9 new fatalities.

Qom, the apparent epicenter of this outbreak, is located to the southwest of Tehran in central Iran. A good map of Iran showing provinces can be found at
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.mapsofworld.com%2Firan%2Firan-political-map.html&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186349677477747&sdata=4y5%2FvthzMXCtIXFpnfRZGaEyHTuz947PG2qiO7uS730%3D&reserved=0>. A HealthMap/ProMED-mail map of Iran is available at
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fhealthmap.org%2Fpromed%2Fp%2F128&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186349677477747&sdata=RXs83iIcJpFeoywQjyJbw8eVOPeVTTEkE%2F5Bz0htOdA%3D&reserved=0>. - Mod.MPP]

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[4] New countries confirming cases
Date: Sat 29 Feb 2020

Qatar ex Iran
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fmenafn.com%2F1099777100%2FQatar-reports-first-case-of-coronavirus&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186349677477747&sdata=eqH9sL%2F%2BKodqohyA5UlziVlI8hV0egkIsIR1EVvJyrY%3D&reserved=0>
Ecuador ex Spain
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.fox5ny.com%2Fnews%2Fecuador-reports-1st-new-coronavirus-case-as-mexico-confirms-2-more&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186349677477747&sdata=skjSuME25Tk8uitSZatcl%2FL%2FEZ9WUfAXBZWfVnQ5Dhk%3D&reserved=0>
Luxembourg ex Italy
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fsunriseread.com%2Fluxembourg-reports-first-coronavirus-case-rtl%2F52723%2F&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186349677477747&sdata=qOBckCP1Ojm15PuPVLNrv9OBwhffEvCOnc6LmlOixEg%3D&reserved=0>
Ireland ex Italy
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.irishtimes.com%2Fnews%2Fhealth%2Fcoronavirus-first-case-of-covid-19-confirmed-in-republic-1.4189306&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186349677477747&sdata=oSfHBKPElnCUxZdShzZByXobFGa5PvtHYGbOB1pMJuU%3D&reserved=0>
Armenia ex Iran
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.facebook.com%2Fnikol.pashinyan%2Fposts%2F2569498986703814%3F__tn__%3D-R&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186349677477747&sdata=IF5vB0kqUaVMELT4NjrRmMSZuFi9N6wMdMCixF04cLs%3D&reserved=0>

[Our thanks to Ryan McGinnis for keeping us informed of new infected areas.

In the past 24 hours, there have been 4 new countries confirming cases of COVID-19: 3 related to transmission in Italy, and one related to transmission in Spain. - Mod.MPP]

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[5] Austria: non-importation case
Date: Sat 29 Feb 2020
From: Dr. Wolfgang Hoepler <w.hoepler@gmx.at>

1st case of an Austrian patient with COVID-19 requiring intensive care treatment due to ARDS

Tamara Seitz, Wolfgang Hoepler, Emanuela Friese, Sebastian Baumgartner, Christian Clodi, Iulia Niculescu, Viktor Lenhart, Alexander Zoufaly, Dorit Stahl, Taemi Yoshida, Lilian Schaeffl-Doweik, Drina Petener, Franz Weidinger, Christian Madl, Stephan Aberle, Elisabeth Puchhammer-Stoeckl, Alexander Indra, Daniela Schmid, Michael Binder, Christoph Wenisch, Hermann Laferl

We would like to report the 1st case of a critically ill Austrian patient with COVID-19 currently receiving treatment in the intensive care unit of our Department of Infectious Diseases in a negative pressure isolation room at the Kaiser Franz Josef Hospital in Vienna, Austria.

On the 13 Feb 2020, the 72-year-old patient, whose past medical history included hypertension, depression, hyperlipidemia, and resection of a carcinoma of the prostate in 2018, had developed fever and malaise, and the general practitioner referred him to a municipal hospital with suspected pneumonia on [17 Feb 2020].

Initial laboratory results showed reduced white blood cell count (WBC) of 3200 G/l with a normal lymphocyte count, thrombocytopenia (106 G/l) and a slightly elevated C-reactive protein (CRP) of 25 mg/l. The chest X-ray demonstrated bronchopneumonia in the left lower lobe. Therefore, antibiotic therapy with intravenous cefuroxime was started.

In the following days, the patient developed progressive dyspnea, and CRP levels rose up to 213 mg/l. Antibiotic therapy was switched to intravenous levofloxacin.

The patient denied having been abroad in the last few weeks.

Due to further respiratory deterioration, on [26 Feb 2020], the patient had to be transferred to the intensive care unit, where he had to be promptly intubated and mechanically ventilated. The CT scan revealed massive pneumonic consolidations in all lung lobes as in bilateral pneumonia plus ARDS (adult respiratory distress syndrome). Antibiotic therapy was escalated to meropenem plus doxycycline plus linezolid.

On [27 Feb 2020], the PCR from tracheal secretion turned out to be positive for SARS-CoV-2. Consequently, the patient was immediately transferred to our specialized department for isolation and further management.

At the time of admission to our ICU, he was mechanically ventilated with a fraction of inspired oxygen of 45%, PEEP 13, and Pmax 25 mbar; was sedated with moderate doses of propofol and remifentanyl; and received low-dose hemodynamic support with noradrenaline.

The laboratory workup showed normal absolute WBC, an increased neutrophil (82%), and a decreased lymphocyte count (10%), a normal platelet count, a falling CRP of 128 mg/l, and normal liver and kidney function tests.

We continued antibiotic therapy and established experimental antiviral therapy with hydroxychloroquine 500 mg bid (planned for 10 days) and lopinavir/ritonavir 400/100 mg bid. It has not been possible yet to administer remdesivir in a compassionate use program because of the study protocol.

The source of the infection has not yet been clearly defined; the patient owns a renowned company with many international clients.

So far, the PCR results from nasopharyngeal swabs of more than 90 contacts have all turned out negative. The patient himself continues in a critical condition, at the moment with no signs of further deterioration.

Communicated by:
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Vienna, Austria
<w.hoepler@gmx.at>

[HealthMap/ProMED-mail map:
Austria: <https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fhealthmap.org%2Fpromed%2Fp%2F109&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186349677477747&sdata=1vyZmHCIoLL7LCC7VHlpBg7cysjjp6EJadeDuyGioik%3D&reserved=0>]

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[6] Selected media reports of interest
A. USA, Washington state cases without epidemiologic links and 1st death
Date: Sat 29 Feb 2020
Source: King5 News [edited]
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.king5.com%2Farticle%2Fnews%2Fhealth%2Fcoronavirus%2Fcoronavirus-death-washington-state%2F281-5a511b20-4a3f-4380-8d79-15d7a1456887&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186349677477747&sdata=cHZMdeAoL%2Bg%2F1t56ExyAoxMu6v30%2F2C55DQ3HP97y48%3D&reserved=0>

A King County resident has died from the 2019 novel coronavirus, also known as COVID-19, health officials said Saturday [29 Feb 2020]. This is the 1st known death from COVID-19 in the United States.

There are currently 6 presumptively positive cases of COVID-19 in Washington state, according to State Health Officer Dr. Lofy. These patients include 3 new cases reported Saturday [29 Feb 2020], including the patient who died. It also includes a King County woman and a Snohomish County teenager whose tests came back positive on Friday [28 Feb 2020]. It also includes a Snohomish County man who was the 1st person to be diagnosed in the US in January [2020]. That person has since recovered.

The man who died was a patient at EvergreenHealth in Kirkland. He was admitted with serious respiratory issues and tested positive for the virus. He was in his 50s and had underlying health conditions, according to Dr. Jeff Duchin with Public Health Seattle & King County. The man had no history of travel outside of the US or known contact with anyone who had COVID-19.

The other 2 new patients are connected to the Life Care nursing facility in Kirkland. One is a woman in her 40s who is a healthcare worker at Life Care. She is in satisfactory condition at Overlake Hospital and hasn't had any travel outside of the US, Duchin said. The other is a woman in her 70s and a resident at Life Care. She is in serious condition at EvergreenHealth.

There are over 50 individuals associated with Life Care who have respiratory symptoms or are hospitalized with pneumonia or other conditions and are being tested for COVID-19, according to Duchin. Public Health officials are investigating this as a possible outbreak at Life Care Center. "Current residents and associates are being monitored closely, and any with symptoms or who are potentially exposed are quarantined. As a precaution, all visits to the facility from families, volunteers, or vendors are not allowed," said officials with Life Care Center of Kirkland.

The Centers for Disease Control and Prevention are sending a team of epidemiologists to King County to support local health experts as they work to identify and test new cases.

"While the vast majority of cases of COVID-19 are believed to be mild, the virus can be a very serious infection that can lead to death. Protecting the health of our community and supporting the care of healthcare workers is our top priority," said Duchin.

Gov. Jay Inslee declared a state of emergency on Saturday [29 Feb 2020] in response to the new cases of COVID-19 and directed state agencies to use all resources necessary to prepare and respond to the outbreak. "It is a sad day in our state as we learn that a Washingtonian has died from COVID-19. Our hearts go out to their family and friends. We will continue to work toward a day where no one dies from this virus," said Gov. Inslee. "In partnership with the Washington State Department of Health, the Washington State Department of Emergency Management, and local and community health partners, we are strengthening our preparedness and response efforts. I am committed to keeping Washingtonians healthy, safe, and informed."

The Centers for Disease Control and Prevention said Saturday [29 Feb 2020] there are 22 confirmed cases of COVID-19 across the US. As COVID-19 cases continue to be identified in the state and globally, health officials said it's important to maintain proper health hygiene. This means washing hands with soap and water; avoid touching eyes, nose, and mouth; avoiding large crowded areas if possible; and, most importantly, staying home from work or school if you're sick.

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Communicated by:
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[As mentioned in yesterday's moderator comment, "The identification of 3 cases without identifiable epidemiologic links strongly suggests that we are moving into the stage of "seek and ye shall find." It looks as though states are seeking and now finding. The silent transmission into these communities speaks for the likelihood of more mild clinical presentations and subclinical infections breaking the directly identifiable epidemiologic links.

The possible outbreak of COVID-19 in a long-term care facility with
many residents of increased age and with multiple pre-existing
co-morbidities is worrisome.

Washington state, like California and Oregon, is located along the
western part of the USA with a Pacific coastline. - Mod.MPP]

B. France ex Egypt
Date: Sat 29 Feb 2020
Source: Egypt Today [abridged, edited]
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.egypttoday.com%2FArticle%2F1%2F82137%2FWorkers-in-hotel-of-Coronavirus-infected-tourists-to-be-tested&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186349677477747&sdata=q6y00NFY4GyMQpNGjkNANuu8mpVe8K%2F78epkPzjCkSo%3D&reserved=0>

Prime Minister Mostafa Madbouly declared on Saturday [29 Feb 2020]
that workers in the hotel where 2 French tourists diagnosed with
coronavirus were staying will be tested.

The prime minister affirmed that Egyptian authorities had consulted
with French counterparts over the diagnosis of coronavirus of 2 French
tourists coming from Egypt. The 2 were part of a group of 6 who were
on holiday in Egypt between [5-16 Feb 2020]. Hence, their place of
residence was identified, and the workers will be tested.

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Communicated by:
ProMED-mail
<promed@promedmail.org>

[In yesterday's ProMED update, there was a report of a man returning
to Canada from Egypt, also positive for the SARS-CoV-2. At that point,
I commented "The question here is whether the infection was originally
acquired in Egypt or in Canada. There have been imported cases into
both countries. We await further information. In either location it
would signal beneath the "radarscope" transmission." The same applies
to returning tourists to France. Did the transmission occur in Egypt
or in France? - Mod.MPP]

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[7] WHO situation report 40, as of 29 Feb 2020
Date: Sat 29 Feb 2020
Source: WHO [edited]
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.who.int%2Fdocs%2Fdefault-source%2Fcoronaviruse%2Fsituation-reports%2F20200229-sitrep-40-covid-19.pdf%3Fsfvrsn%3D7203e653_2&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186349677477747&sdata=0PkfZkt17FvLV%2Fa2%2BwSBUuxLGiQ1vAanltolLSn0Y%2FY%3D&reserved=0>

*The situation report includes information provided by national
authorities as of 10 a.m. CET.

Highlights

- Two new Member States (Mexico and San Marino) reported cases of
COVID-19 in the past 24 hours.

- WHO has published the Rational use of personal protective equipment
for COVID-19
[<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fapps.who.int%2Firis%2Fbitstream%2Fhandle%2F10665%2F331215%2FWHO-2019-nCov-IPCPPE_use-2020.1-eng.pdf&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186349677477747&sdata=aHMgCUItQ9iICj2FFRY5ZutRQkGrETzn288O7CU%2B1Jw%3D&reserved=0>].
This document summarizes WHO recommendations for the appropriate use
of personal protective equipment (PPE) in healthcare and community
settings, including the handling of cargo. More information on
infection prevention and control (IPC) activities can be found in the
Subject in Focus.

Subject in Focus: Update on infection prevention and control
Infection prevention and control (IPC) is a major factor in preventive
and mitigation measures for COVID-19. To ensure evidence-based quality
guidance and prompt response to global demand for personal protective
equipment (PPE), WHO has convened the IPC expert global network of
specialists from around the world since the beginning of the outbreak.
Experts are members of the Global Infection Prevention and Control
Network (GIPCN) or members of relevant institutions caring for
COVID-19 patients. This network discusses technical aspects of IPC
measures and shares epidemiological updates and experiences across
affected countries. In consultation with this global IPC expert
network, WHO has released 3 key IPC interim guidance materials
(<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.who.int%2Femergencies%2Fdiseases%2Fnovel-coronavirus-2019%2Ftechnical-guidance%2Finfection-prevention-and-control&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186349677477747&sdata=eC33nhgQDX2mvpSjbEu6j1BBLvCRpSoyaZlhry9NiCs%3D&reserved=0>).

Updates on IPC activities include the following:
- Publishing the guidance document: Rational use of personal
protective equipment for COVID-19
(<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fapps.who.int%2Firis%2Fbitstream%2Fhandle%2F10665%2F331215%2FWHO-2019-nCov-IPCPPE_use-2020.1-eng.pdf&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186349677477747&sdata=aHMgCUItQ9iICj2FFRY5ZutRQkGrETzn288O7CU%2B1Jw%3D&reserved=0>).
This document summarizes WHO recommendations for the appropriate use
of PPE in healthcare and community settings, including the handling of
cargo.

- Deployment of IPC specialists to Italy to support the COVID-19
response and to facilitate IPC training in the European region.

- Development of frequently asked questions (FAQ) in response to
queries from the public and communities on blood safety, PPE for
specimen collection, cleaning & disinfection, self-isolation, and
self-monitoring.

- Launching the OpenWHO online course "Infection Prevention and
Control (IPC) for COVID-19"
(<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fopenwho.org%2Fcourses%2FCOVID-19-IPC-EN&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186349677487703&sdata=tgDPEkuivlQmd6CyWZk7ERVOYEz70sfVdLQcD1Jo4vs%3D&reserved=0>) on [25 Feb 2020]. The
course has been accessed by 15 391 users as of [28 Feb 2020] (see
Figure 1).

[The figures provided in the report below are the figures from the
National Health Commission of China from 28 Feb 2020. The 29 Feb 2020
figures are included in sections [1] and [2] above. They are usually
posted between 7 and 9 p.m. (GMT-5), which is 3 a.m. (GMT+1) in
Geneva. All figures from all countries are data reported to WHO. -
Mod.MPP]

Excerpted to show confirmed cases outside mainland China:

Countries, territories or areas outside China with reported
laboratory-confirmed COVID-19 cases and deaths. Data as of [29 Feb
2020]*

WHO region:
Country: Total confirmed cases (new)* / Total deaths (new) /
Transmission classification** / Days since last reported case

Western Pacific Region:
China: (includes clinical and laboratory confirmed): 79 394 (435) /
2838 (47)
Japan: 230 (20) / 5 (1) / Local transmission / 0
Republic of Korea: 3150 (813) / 17 (4) / Local transmission / 0
Viet Nam: 16 (0) / 0 (0) / Local transmission / 16
Singapore: 98 (2) / 0 (0) / Local transmission / 0
Australia: 24 (1) / 0 (0) / Local transmission / 0
Malaysia: 24 (0) / 0 (0) / Local transmission / 2
Cambodia: 1 (0) / 0 (0) / Imported cases only / 33
Philippines: 3 (0) / 1 (0) / Imported cases only / 25
New Zealand: 1 (0) / 0 (0) / Imported cases only / 1

Southeast Asia Region:
Thailand: 42 (2) / 0 (0) / Local transmission / 0
Nepal: 1 (0) / 0 (0) / Imported cases only / 47
Sri Lanka: 1 (0) / 0 (0) / Imported cases only / 33
India: 3 (0) / 0 (0) / Imported cases only / 26

Region of the Americas:
United States of America: 62 (3) / 0 (0) / Local transmission / 0
Canada: 14 (3) / 0 (0) / Imported cases only / 0
Brazil: 1 (0) / 0 / Imported cases only / 3
Mexico: 2 (2) / 0 (0) / Imported cases only / 0

European Region:
France: 57 (19) / 2 (0) / Local transmission / 0
Finland: 2 (0) / 0 (0) / Imported cases only / 3
Germany: 57 (31) / 0 (0) / Local transmission / 0
Italy: 888 (238) / 21 (4) / Local transmission / 0
Russian Federation: 2 (0) / 0 (0) / Imported cases only / 29
Spain: 32 (7) / 0 (0) / Local transmission / 0
Sweden: 12 (5) / 0 (0) / Imported cases only / 0
United Kingdom: 20 (4) / 0 (0) / Local transmission / 0
Belgium: 1 (0) / 0 (0) / Imported cases only / 25
Israel: 5 (2) / 0 / Imported cases only / 0
Austria: 5 (1) / 0 (0) / Imported cases only / 0
Croatia: 5 (2) / 0 / Local transmission / 0
Switzerland: 10 (4) / 0 / Imported cases only / 0
Denmark: 2 (1) / 0 (0) / Imported cases only / 0
Estonia: 1 (0) / 0 (0) / Imported cases only / 2
Georgia: 2 (1) / 0 (0) / Imported cases only / 0
Greece: 3 (0) / 0 (0) / Imported cases only / 2
North Macedonia: 1 (0) / 0 (0) / Imported cases only / 3
Norway: 6 (2) / 0 (0) / Imported cases only / 0
Romania: 3 (2) / 0 (0) / Imported cases only / 0
Belarus: 1 (0) / 0 (0) / Imported cases only / 1
Lithuania: 1 (0) / 0 (0) / Imported cases only / 1
Netherlands: 2 (1) / 0 (0) / Imported cases only / 0
San Marino: 1 (1) / 0 (0) / Local transmission / 0

Eastern Mediterranean Region:
United Arab Emirates: 19 (0) / 0 (0) / Local transmission / 2
Iran (Islamic Republic of): 388 (143) / 34 (8) / Local transmission /
0
Egypt: 1 (0) / 0 (0) / Imported cases only / 15
Lebanon: 2 (0) / 0 (0) / Imported cases only / 3
Kuwait: 45 (2) / 0 (0) / Imported cases only / 0
Bahrain: 38 (5) / 0 (0) / Imported cases only / 0
Oman: 6 (0) / 0 (0) / Imported cases only / 2
Afghanistan: 1 (0) / 0 (0) / Imported cases only / 5
Iraq: 8 (1) / 0 (0) / Imported cases only / 0
Pakistan: 2 (0) / 0 (0) / Imported cases only / 3

African Region:
Algeria: 1 (0) / 0 (0) / Imported cases only / 4
Nigeria: 1 (0) / 0 (0) / Imported cases only / 1

Other: Cases on an international conveyance (Diamond Princess)***: 705
(0) / 6 (2) / Local transmission / 3

Grand total****: 6009 (1318) / 86 (19)

*Case classifications are based on WHO case definitions for COVID-19.
**Transmission classification is based on WHO analysis of available
official data and may be subject to reclassification as additional
data become available. Countries/territories/areas experiencing
multiple types of transmission are classified in the highest category
for which there is evidence; they may be removed from a given category
if interruption of transmission can be demonstrated. It should be
noted that even within categories, different
countries/territories/areas may have differing degrees of transmission
as indicated by the differing numbers of cases and other factors. Not
all locations within a given country/territory/area are equally
affected.
Terms:
- Community transmission is evidenced by the inability to relate
confirmed cases through chains of transmission for a large number of
cases, or by increasing positive tests through routine screening of
sentinel samples.
- Local transmission indicates locations where the source of infection
is within the reporting location.
- Imported cases only indicates locations where all cases have been
acquired outside the location of reporting.
- Under investigation indicates locations where type of transmission
has not been determined for any cases.
- Interrupted transmission indicates locations where interruption of
transmission has been demonstrated (details to be determined).
***Cases identified on a cruise ship currently in Japanese territorial
waters.
****266 female/386 male/5357 unknown. 28 healthcare workers (5 female
/12 male / 11 unknown).

[There are excellent graphs and a map available at the source URL, as
well as strategic objectives and preparedness and response
information.

- Figure 1: Countries, territories or areas with reported confirmed
cases of COVID-19, 29 Feb 2020.
- Figure 2: Epidemic curve of confirmed COVID-19 cases (n=5173)
reported outside of China, by date of report and WHO region with
complete days of reporting through [28 Feb 2020] - Mod.MPP]

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Communicated by:
ProMED-mail
<promed@promedmail.com>

[The number of countries reporting confirmed cases of COVID-19 with transmission occurring outside China continues to grow and is now 53. This includes 9 countries from the Western Pacific region, 24 countries from the European region, 4 countries from the Southeast Asia region, 10 countries from the Eastern Mediterranean region, 4 countries from the Americas region, and 2 countries from the African region. There has also been local transmission noted on the cruise ship quarantined in Japan (the Diamond Princess).

The total number of cases reported from outside of China is now 6009 including 86 deaths.

At the same time, the daily number of reported cases and fatalities reported by China keeps decreasing from levels that were 2000-3000 cases daily to less than 500 cases per day.

It is clear that the number of reported confirmed cases differs from different reporting websites and is somewhat a function of time of day the website is updated. For example, I note the time I've accessed the Johns Hopkins website, but by the time the post is actually finished with the editing process, those numbers have at times significantly changed. Case counting is clearly a moving target, and, depending upon when the website updates, the numbers may be different. - Mod.MPP]

[See Also:
COVID-19 update (21): companion animals, dog susp, RFI
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200229.7036661&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (20): global, more importations, need for serosurveys,
WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200228.7035438&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (19): China, global, Italy, Iran, Nigeria, imported
cases, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200228.7032761&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (18): China, global, Iran, Italy imported cases, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200226.7026481&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (17): China, animal reservoir, wildlife trade &
consumption ban https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200225.7024245&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (16): China, global, Iran, Eastern Mediterranean
imported cases, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200224.7022200&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (15): China, global, Iran, Italy, returning cruise
evacuees, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200223.7017958&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (14): China, global, Iran, Italy, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200223.7015552&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (13): China, global, Iran, Lebanon, Israel, WHO, RFI
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200222.7013077&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (12): China, global, Iran, cruise ship epidemiology,
WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200220.7009533&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (11): animal reservoir, intermediate hosts, pangolin
susp. https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200220.7009213&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (10): China, global, Iran, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200219.7005749&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (09): China, global, pulmonary pathological findings,
WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200218.7002608&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (08): companion animals, RFI
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200218.7002276&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (07): China, global, comment, epidemiological
analysis, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200218.6999424&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (06): animal reservoir, intermediate hosts
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200217.6997782&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (05): China, global, Taiwan fatality, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200216.6995828&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (04): China, global, Thailand, cruise ships, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200215.6993525&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (03): China, global, Egypt, influenza surveillance,
WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200214.6991020&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (02): China, global, reporting criteria, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200214.6987678&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
COVID-19 update (01): China, global, EVZD, reporting criteria, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200213.6984084&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (42): China, global, COVID-19, SARS-CoV-2, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200211.6979942&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (41): China, global, clinical pics, asymptomatic
trans., WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200210.6976117&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (40): animal reservoir, pangolin poss intermediate
host, RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200210.6972104&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (39): China, global, false negative NAT tests, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200209.6972103&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (38): China, global, local transm, CFR, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200209.696999&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (37): China, global, cruise, clinical, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200208.6967526&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (36): China, global, incubation, airport screen, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200207.6963294&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (35): China, global, health workers, cruise, WHO,
RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200206.6959291&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (34): China, global, deaths, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200205.6955196&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (33): China, global, epidemic modeling interactive
tool available https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200204.6954575&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (32): China, global, management, research
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200204.6950903&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (31): China, Global,
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200202.6946685&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (30): updates, China, Viet Nam, research
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200202.6945658&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (29): updates, China, Philippines, USA, Canada,
Spain https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200202.6944056&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (28): China (HU) animal reservoir
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200201.6943858&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (27): updates, Africa
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200201.6943724&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (26): research, research, early spread in Wuhan,
China https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200201.6943519&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (25): updates, China, Italy, Russia, UK
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200131.6940058&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (24): updates, China, PHEIC, India, economy,
research https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200131.6937255&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (23): updates, China, UAE, Finland, ECDC, research
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200129.6929532&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (22): reservoir suggested, bats
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200129.6930718&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (21): China, Canada, Sri Lanka ex China
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200127.6918021&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (20): China, wildlife trade ban
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200127.6922060&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (19): China (HU) transmission dynamics
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200126.6918012&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (18): China (HU) animal reservoir
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200125.6915411&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (17): China (HU), France, USA ex China, Viet Nam p2p
trans. https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200125.6914553&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (16): China (HU), Viet Nam, Singapore ex China, IHR
committee WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200123.6910685&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (15): China (HU) wild animal sources
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200123.6909913&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (14): China (HU), Hong Kong, Macau ex China
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200122.6907971&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (13): China (HU) USA ex China
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200121.6903878&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (12): China (HU) new fatality, healthcare workers,
WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200121.6901757&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (11): China (HU), South Korea ex China
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200120.6899007&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (10): China (HU, GD, BJ)
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200119.6898567&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (09): China, 1st diagnostic test
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200119.6897998&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (08): China (HU) more cases, Nepal susp, modeling
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200118.6897282&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (07): China (HU), Thailand ex China, Japan ex China,
WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200117.6895647&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (06): China (HU) fatality, Japan ex China,
antipyretic use https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200116.6893471&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (05): China (HU), Japan ex China
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200115.6891515&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (04): China (HU), Thailand ex China, .6889527
Novel coronavirus (03): China (HU) animal reservoir suggested, RFI
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200114.6887480&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (02): Thailand ex China (HU) WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200113.6886644&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Novel coronavirus (01): China (HU) WHO, phylogenetic tree
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200112.6885385&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Undiagnosed pneumonia - China (HU) (10): genome available, Hong Kong
surveill. https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200111.6883998&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Undiagnosed pneumonia - China (HU) (09): novel coronavirus, more info,
fatality https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200110.6883253&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Undiagnosed pneumonia - China (HU) (08): novel coronavirus, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200110.6881082&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Undiagnosed pneumonia - China (HU) (07): official confirmation of
novel coronavirus https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200108.6878869&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Undiagnosed pneumonia - China (06): (HU) Hong Kong surveillance, USA
CDC alert https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200108.6876648&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Undiagnosed pneumonia - China (05): (HU) novel coronavirus identified
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200108.6877694&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Undiagnosed pneumonia - China (04): (HU) Hong Kong surveillance
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200106.6874277&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Undiagnosed pneumonia - China (03): (HU) updates, SARS, MERS ruled
out, WHO, RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200105.6872267&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Undiagnosed pneumonia - China (02): (HU) updates, other country
responses, RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200103.6869668&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
Undiagnosed pneumonia - China (01): (HU) wildlife sales, market
closed, RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200102.6866757&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]
2019

Undiagnosed pneumonia - China (HU): RFI
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20191230.6864153&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C3defe784c89a4f0226dc08d7bd9bea9f%7Cbae5059a76f049d7999672dfe95d69c7%7C[illegible]]
....sb/mpp/lxl

From: promed-bounces@promedmail.org on behalf of promed-request@promedmail.org
To: promed@promedmail.org
Subject: ProMED Digest, Vol 93, Issue 1
Date: Saturday, February 29, 2020 8:55:17 PM

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Today's Topics:

1. PRO/EDR> Measles update (08) (promed@promedmail.org)
2. PRO/AH/EDR> COVID-19 update (22): global, more importations
   to new countries, 1st U.S. death, WHO (promed@promedmail.org)

Message: 1
Date: Sat, 29 Feb 2020 23:50:53 +0000
From: promed@promedmail.org
Subject: PRO/EDR> Measles update (08)
To: promed-post@promedmail.org, promed-edr-post@promedmail.org
Message-ID:
<01000170935c205b-d8e9ae49-256d-443c-b4eb-955a056669c7-000000@email.amazonses.com>

Content-Type: text/plain; charset=UTF-8

MEASLES UPDATE (08)
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A ProMED-mail post
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.promedmail.org&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166908076&sdata=VfhoFDUx%2Fipb%2F84bak3g6J2y2McGApJI7Zw%2BsYz39O0%3D&reserved=0>
ProMED-mail is a program of the
International Society for Infectious Diseases
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.isid.org&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166908076&sdata=coUa%2BML3oGLZJl3SJ%2F0gdFnMyG0BWmdVshgl0HBVidE%3D&reserved=0>

In this update:

Asia and Pacific
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[1] Fiji ex Philippines
[2] Pakistan (Khyber Pakhtunkhwa)

Europe
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[3] Croatia (Dubrovnik-Neretva County)

Americas
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[4] South America (Brazil)
[5] USA (Los Angeles County)

Africa
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[6] DR Congo

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[1] Fiji ex Philippines
Date: Wed 19 Feb 2020
Source: FBC News [abridged, edited]
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.fbcnews.com.fj%2Fnews%2Fhealth%2Fwoman-diagnosed-with-measles-after-arrival%2F&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166908076&sdata=BvYzxWYJtS2ZdQ9ELmyvYWWaRBWThTQ7qsGoiWoE7pQ%3D&reserved=0>

A woman has been placed in home isolation in Suva after having developed measles after arriving into the country from the Philippines on the 9th of this month [February 2020]. This is the 1st case of the disease since 6 Jan [2020], and the Ministry of Health says the patient's husband and son have also been placed on home isolation.

The 35-year-old was well during a health screening at Nadi Airport but developed symptoms of measles the day after her arrival [10 Feb 2020].

The Ministry says that with the Philippines having an ongoing outbreak of measles, it is clear that she became infected with measles in the Philippines and not in Fiji.

[See URL above for locations/times of possible exposure.]

The latest case brings to 28 the total number of cases for the outbreak that began on November 7th last year [2019].

[Byline: Indra Singh]

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[2] Pakistan (Khyber Pakhtunkhwa)
Date: Thu 20 Feb 2020
Source: MENAFN - Tribal News Network [abridged, edited]
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fmenafn.com%2F1099732817%2FPakistan-Measles-rears-its-ugly-head-in-KP&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166908076&sdata=M8jggVdfqPaElGpvOpJWFz5HtNgw9Gev9QPYfNu7cls%3D&reserved=0>

Measles has reared its ugly head in Khyber Pakhtunkhwa again as 104 children have been diagnosed with the disease so far this year [2020], while 218 more suspect cases are under scrutiny.

These figures have been compiled from official data of the Health Department provided by different government hospitals, while the actual number of infected children may be much higher. According to the Health Department, a total of 13 229 measles cases were reported in KP in 2018, among which the virus was confirmed in 1515 children. As many as 20 children died of the disease that year [2018]. The last year [2019] saw marked improvement in measles cases as only 288 cases were reported with 3 deaths.

The administration of Hayatabad Medical Complex (HMC) said 6 children died of measles in the hospital during the last 3 months. This year [2020], 46 confirmed cases of measles have been registered by the hospital. The emergence of 104 new measles cases during the last 1.5 months has left the health authorities and parents extremely concerned.

One man from the Razmak area of North Waziristan said, while talking to TNN, that his one-year-old daughter 1st had a cough and then a high fever. He said he admitted his daughter to Razmak Hospital, where she was diagnosed with measles and died 6 days after diagnosis despite proper treatment. He said that earlier his 2-year-old niece also died from the disease.

Dr Bilal, trainee registrar at HMC Peshawar, said the measles vaccine is 1st administered to children at the age of 9 months, which produces 70% resistance in the body against the disease. However, he said, a one-year-old child can contract measles if resistance in the body decreases.

Some parents said their children contracted measles despite [receiving the] vaccination. Dr Bilal said the wrong management of the vaccination, such as [improper] storage or administration, may render it ineffective. He said some parents don't administer to their children the 2nd measles vaccine, which is given at the age of 15 months and produces 90% resistance against the disease.

A resident of Charsadda said his 8-month-old son died of measles, as it could not be diagnosed timely.

Dr Bilal said an affected child has a high fever and rashes in the mouth. The body of the affected child is also covered by small red-colored pimples (rash). He said it is an RNA virus, and even doctors cannot diagnose it until the skin of the infected child turns red.

Dr Bilal said the virus becomes active in its season and mostly affects children below one year of age or those who did not get vaccine. He said children with continuous fever and runny nose and eyes must immediately consult a doctor, and such children must be kept separate from other children to avoid spread of the disease.

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ProMED-mail from HealthMap Alerts
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[3] Croatia (Dubrovnik-Neretva County)
Date: Fri 21 Feb 2020
Source: Eurosurveillance [abridged, edited]
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.eurosurveillance.org%2Fcontent%2F10.2807%2F1560-
7917.ES.2020.25.7.1900434%23abstract_content&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166908076&sdata=wRAsgdmBWehVSN7RlxjXCeAziM2Wctzk%2B2M5M%2BQvAbY%3D&reserved=0>

Selection from Eurosurveillance for week 08 [2020]

Citation: Tomljenovic M, Lakic M, Vilibic-Cavlek T, et al.: Measles outbreak in Dubrovnik-Neretva County, Croatia, May to June 2018. Euro Surveill. 2020; 25(7): pii: 1900434. DOI:
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fdoi.org%2F10.2807%2F1560-7917.ES.2020.25.7.1900434&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166908076&sdata=wstIoKX9T8dkoV%2FAi%2B4aqqck9huE46YUciaeJmeQY14%3D&reserved=0>.

Abstract

In May 2018, measles was introduced in the Dubrovnik region by an adult who recently travelled to Kosovo*. Control measures and an outbreak investigation were implemented: 15 epidemiologically linked cases met the outbreak case definition of a visitor/resident of Dubrovnik-Neretva County with laboratory-confirmed measles and symptom onset beginning on 19 May [2018]. New cases were identified through hospitals and primary care physicians. Throat swabs, urine, and/or serum samples were collected from outbreak cases. RT-PCR detection of viral RNA and IgM/IgG was used to confirm infection. The median age of cases was 33 years, with one 8-month-old infant. Vaccination status was unknown for 9 cases, 3 were unvaccinated, one case had a history of one dose, and 2 cases reported receiving 2 doses of measles-containing vaccine.

There were 11 hospitalisations, and one person developed pneumonia.

Control teams undertook an extensive search of contacts and implemented a range of control measures. Despite the outbreak occurring at the beginning of the summer tourism season, it was contained and did not spread to neighbouring regions. With continuing measles transmission in Europe, even small outbreaks create a burden on the health system in countries that have eliminated measles and illustrate the importance of maintaining high immunisation coverage.

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[4] South America [Brazil]
Date: Fri 28 Feb 2020
Source: PAHO WHO [abridged, edited]
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Freliefweb.int%2Freport%2Fbrazil%2Fepidemiological-update-measles-28-february-2020&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166908076&sdata=Ev%2F8R69M4Xxb2GX1VWTQ5JTupz%2F9ab2On6hHLmpSriw%3D&reserved=0>

ReliefWeb epidemiological update - measles - 28 Feb 2020

Between 1 Jan and 22 Feb 2020, 6 countries have reported confirmed cases in the Region of the Americas: Argentina (45 cases, including 1 death), Brazil (338 cases, including 1 death), Canada (1 case), Chile (2 cases), the United States of America (5 cases), and Uruguay (2 cases).

In 2019, a total of 20 554 confirmed cases of measles, including 19 deaths, were reported in 14 countries and territories of the Region of the Americas (Ref. 1): Argentina (107 cases), the Bahamas (3 cases), Brazil (18 203 cases, including 15 deaths), Canada (113 cases), Chile (11 cases), Colombia (244 cases, including 1 death), Costa Rica (10 cases), Cuba (1 case), Curacao (1 case), Mexico (20 cases), Peru (2 cases), the United States of America (1282 cases), Uruguay (9 cases), and the Bolivarian Republic of Venezuela (548 cases, including 3 deaths).

The following is a summary of the epidemiological situation of measles
for countries that have reported confirmed measles cases in 2020.

In Argentina, a total of 107 confirmed measles cases had rash onset in 2019, and 45 confirmed cases had rash onset in 2020 (Figure 1).

The current epidemic outbreak began in epidemiological week (EW) 35 of 2019 and, as of EW 7 of 2020, there have been 145 confirmed measles cases reported, including one death. Of the 145 cases, 3 were imported from the United States and 4 were imported from Brazil; genotype and lineage are under investigation. For the 138 remaining cases, the origin could not be established, and they are part of the same outbreak.

With respect to the distribution of cases by place of residence, one case is a resident of Cordoba Province (with travel history to Brazil), 118 cases (81.4%) are residents of Buenos Aires Province (including 2 cases imported from the United States), and 26 cases (17.9%) are residents of the city of Buenos Aires (including 4 imported cases).

Among the 145 confirmed cases, 92 (63%) were unvaccinated, 14 (10%) were vaccinated with one dose, and 11 (8%) were vaccinated with 2 doses (Ref. 2). For 28 cases (19%), no information regarding vaccination status was available.

The highest incidence rates are all among children aged less than 5 years: under one-year-olds (4.06 cases per 100 000 population); one-year-olds (2.00 cases per 100 000 population); and 2-4-year-olds (0.80 cases per 100 000 population).

Genotype D8, lineage MVs/Gir Somnath.IND/42.16, has been identified in this outbreak.

Onset of rash for the most recent confirmed case was 16 Feb 2020.

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[See PDF at URL above for informative figures and tables, as well as references.]

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[5] USA (Los Angeles County)
Date: Fri 28 Feb 2020
Source: New University [abridged, edited]
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.newuniversity.org%2F2020%2F02%2F28%2Ffive-people-infected-with-measles-in-la-county%2F&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166908076&sdata=J9Xf0QninhIhH7SbCGFro4Ql1Qyusp8jVxqKlWCDU2c%3D&reserved=0>

Five people were infected with measles in Los Angeles County after being in contact with an infected international tourist, according to the Los Angeles County Department of Public Health.

LA Public Health accumulated a list of places that the infected patient visited between 26 Jan and 1 Feb [2020]. Doctors recommend that those who have been exposed to the measles virus to contact a doctor if they are experiencing symptoms and are not immunized.

In 2019, there were only 20 confirmed cases of measles in [Los Angeles County].

>From 2000 to 2018, it has been estimated that 23 million deaths were prevented worldwide due to the vaccination. There is a very low chance of getting infected with measles, as most people are vaccinated at a young age. The Center of Disease Control recommends getting 2 doses of the measles vaccination, which is 97% effective against the virus.

If a person is unsure if they are up to date on their shots, it is suggested to find their vaccination record or record of immunization of measles immunity. If there is no record available, it is recommended to get the measles-mumps-rubella [MMR] vaccination. There are no negative repercussions if you get a 2nd dosage of this vaccine.

New and returning college students, healthcare workers, and international travelers are more susceptible to measles, and it is recommended that they get the vaccine.

For more information, please visit
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.cdc.gov%2Fmeasles%2Findex.html&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166918031&sdata=IZzVvyLVD091RlGU5uKW%2B5X7%2BCFiDoQt9DwlXSeemkc%3D&reserved=0>.

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[6] Africa (DR Congo)
Date: Mon 24 Feb 2020
Source: Outbreak News Today [abridged, edited]
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Foutbreaknewstoday.com%2Fdrc-reports-252-measles-deaths-since-beginning-of-the-year-81463%2F&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186353166918031&sdata=Aab9zHlEf%2BkJxDn%2FJ3NGuwGRO9ciKdQ44h%2B31NEUuHs%3D&reserved=0>

The measles outbreak that affected more than 300 000 people, killing more than 6000, in the Democratic Republic of the Congo (DRC) last year [2019] continues into 2020, albeit slowing.

Since the beginning of the year [2020], 20 475 measles cases and 252 deaths have been reported. The World Health Organization (WHO) says while the overall situation remains serious, the weekly incidence of cases and deaths has continued to reduce in the past 10 weeks.

Children under the age of 5 years remain the most affected in all provinces, accounting for 71% of all confirmed cases.

Reactive vaccination campaigns have reached 5 789 008 children aged 6-59 months in 179/261 health zones. In addition, 18 million children aged 6-59 months have been vaccinated in supplementary vaccination activities.

WHO [cautions against complacency] as multiple operational challenges confound the ongoing response: mobilization of resources, issues around provision of free medical care in affected areas, and communication issues.

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[See Also:
Measles update (07) https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200220.7006260&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166918031&sdata=dvQNylfwlepehf0ORNOwINznc08z3V29HbOBBNKbLGw%3D&reserved=0
Measles update (06) https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200216.6995462&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166918031&sdata=5H3VJ9P9PcGGEQ6%2FOHSfvaK2hPiaXu7UB4YpSekFylM%3D&reserved=0
Measles update (05) https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200209.6972156&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166918031&sdata=20iv8IHRc6V2Ztj5nG3PIwLgt%2BjVz8faTzT%2B97FHT7Y%3D&reserved=0
Measles update (04) https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200206.6958610&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166918031&sdata=6uNi9mPyiJgbaRylU7vpFacI8gdtwe0nOJ02kWYCzmI%3D&reserved=0
Measles update (03) https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200201.6943677&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166918031&sdata=cmFmWcOJTJfgDUZk5gDp%2BlG4EZRbzDesJrX0R7gxpAc%3D&reserved=0
Measles update (02) https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200110.6882684&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166918031&sdata=YTbEPBBpL2n%2BjqjLfR8b6XKmEh3PdPYtQ0o%2FLQV0nNQ%3D&reserved=0
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Measles update (41) https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20190610.6512991&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166937944&sdata=PozzAnmhMUbfIjQRHbVOIF9vUKhrOEnfpMeAUBgjB4I%3D&reserved=0
Measles update (40) https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20190607.6509364&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166937944&sdata=qwuj8MzUKvKWkUA633sz%2FEpK4aI1%2B4oJVNdpcjye3dY%3D&reserved=0
Measles update (30) https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20190430.6449873&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166937944&sdata=10FNjiqbDiHWd1i4eV2rYZId0uMlh0oxCi%2B7xJWAHOM%3D&reserved=0
Measles update (20) https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20190323.6382433&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166937944&sdata=3vMoiiwz1GLndFwxadzhU0W5C9oeMSsw0vktGFhWmkc%3D&reserved=0
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Measles update (01): Americas, Africa, Southeast Asia
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20190102.6240858&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166937944&sdata=lQt9TAqIegszKqEDESI1XVdOcluO3FE6u3wk%2B%2FRXq7Q%3D&reserved=0]
....sb/lk/tw/lxl

Message: 2
Date: Sun, 1 Mar 2020 04:48:26 +0000
From: promed@promedmail.org
Subject: PRO/AH/EDR> COVID-19 update (22): global, more importations
to new countries, 1st U.S. death, WHO
To: promed-post@promedmail.org, promed-edr-post@promedmail.org,
promed-ahead-post@promedmail.org
Message-ID:
<01000170946c8c4d-d3e59d27-f9c5-479f-87d6-b96576e238a9-000000@email.amazonses.com>

Content-Type: text/plain; charset=UTF-8

CORONAVIRUS DISEASE 2019 UPDATE (22): GLOBAL, MORE IMPORTATIONS TO NEW COUNTRIES, 1ST U.S. DEATH, WHO
****
A ProMED-mail post
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.promedmail.org&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166937944&sdata=hY2dxiF5VaoiJv9WU2n9qnNfehmvYZWFE4fLlTpenPs%3D&reserved=0>
ProMED-mail is a program of the
International Society for Infectious Diseases
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.isid.org&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166937944&sdata=Gg0MnNq2Xp0Ujmjr0xPu0Ly5HwUSpEM3B1gHt%2FBgAPA%3D&reserved=0>

In this update:
[1] Global update: Johns Hopkins CSSE [accessed at 8:00 p.m. GMT-5]
[2] China: China National Health Commission 28 Feb 2020
[3] Countries with notable local transmission (South Korea, Italy, Iran)
[4] New countries confirming cases
[5] Austria: non-importation case
[6] Selected media reports of interest: 1st U.S. death (WA)
[7] WHO situation report 39 (as of 28 Feb 2020)

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[1] Global update: Johns Hopkins CSSE [accessed at 9 p.m. GMT-5]
Date: Sat 29 Feb 2020
Source: Johns Hopkins CSSE (Center for Systems Science and Engineering) [edited]
<https://gcc01.safelinks.protection.outlook.com/?
url=https%3A%2F%2Fgisanddata.maps.arcgis.com%2Fapps%2Fopsdashboard%2Findex.html%23%2Fbda7594740fd40299423467b48e9ecf6&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166947901&sdata=68EeDUH0Hri8n%2Bs0XEeMv1pz1Lq90lw7C842bvbcXYs%3D&reserved=0>

Confirmed cases 2 Feb 2020 / 3 Feb 2020 / 4 Feb 2020 (early) / 4 Feb 2020 (end of day) / 5 Feb 2020 / 6 Feb 2020 / 7 Feb 2020 / 8 Feb 2020 / 9 Feb 2020 early / 9 Feb 2020 late / 10 Feb 2020 / 11 Feb 2020 / 12 Feb 2020 / 13 Feb 2020 / 14 Feb 2020 / 15 Feb 2020 / 16 Feb 2020 / 17 Feb 2020 / 18 Feb 2020 / 19 Feb 2020 / 20 Feb 2020 / 21 Feb 2020 / 22 Feb 2020 / 23 Feb 2020 / 24 Feb 2020 / 25 Feb 2020 / 26 Feb 2020/ 27

Feb 2020 / 28 Feb 2020 / 29 Feb 2020 / Country / Region

17 187 / 19 693 / 20 636 / 23 746 / 27 396 / 30 553 / 34 524 / 37 174 / 37 199 / 40 157 / 42 310 / 44 414 / 59 789 / 63 842 / 66 343 / 68 386 / 70 510 / 72 365 / 74 135 / 74 576 / 75 004 / 75 906 / 76 936 / 76 944 / 77 657 / 77 663 / 78,486 / 78 817 / 79 251 / 79 822 / Mainland China
20 / 20 / 20 / 22 / 22 / 45 / 25 / 25 / 26 / 26 / 26 / 26 / 26 / 28 / 28 / 29 / 43 / 59 / 66 / 74 / 84 / 94 / 105 / 122 / 147 / 159 / 170 / 189 / 214 / 228 / 241 / Japan
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Total number of reported deaths: 2977
Deaths outside of Mainland China: 216 [including 6 from the Diamond Princess]
Iran: 43
South Korea: 17
Hong Kong: 2
Italy: 29
Diamond Princess: 6
France: 2
Japan: 5
Philippines: 1
Taiwan: 1
USA: 1

Data sources: WHO, CDC, ECDC, NHC, and DXY

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Communicated by:
ProMED-mail
<promed@promedmail.org>

[As mentioned previously, this website is constantly updated as new information comes in, so it is likely that when you read this post, the numbers will not match the linked numbers because they will have been updated since the post was prepared.

According to the data on the Johns Hopkins website, there are now a total of 7138 confirmed cases of COVID-19 reported from 63 countries/locations outside mainland China, representing an increase of 1835 cases reported in the past 24 hours, with South Korea accounting for 1189 of the newly reported cases, Italy accounting for 240 of the newly reported cases, and Iran accounting for 205 of the newly reported cases. There has been a global total of 2977 reported deaths, of which 107 were reported from outside of Mainland China. Other countries experiencing increases of more than 10 cases include Japan, 13 new cases; Germany, 31 cases; France, 43 new cases; and Spain, 13 new cases.

For the 4th consecutive day, more cases have been reported from outside of Mainland China than within Mainland China. - Mod.MPP]

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[2] China: China National Health Commission 28 Feb 2020
Date: Sun 1 Mar 2020
Source: China National Health Commission [in Chinese, machine trans. edited]
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.nhc.gov.cn%2Fxcs%2Fyqtb%2F202003%2F9d462194284840ad96ce75eb8e4c8039.shtml&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166947901&sdata=Nxy4dvzGJXoHmdSgq3PGlw5w%2FUIA%2FVFD84q%2B5Wn6Vgw%3D&reserved=0>

At 04:00 on [29 Feb 2020], 31 provinces (autonomous regions, municipalities) and the Xinjiang Production and Construction Corps reported 573 new confirmed cases, 35 new deaths (34 in Hubei and 1 in Henan), and 132 new suspected cases.

On the same day, 2623 cases were cured and discharged, 8620 were close contacts of medical observation, and 299 cases of severe cases were reduced.

As of 24:00 on [29 Feb 2020], according to reports from 31 provinces (autonomous regions and municipalities) and the Xinjiang Production and Construction Corps, there were 35 329 confirmed cases (of which 7365 were severe cases), 41 825 were cured and discharged, and 2870 were fatal cases. A total of 79 824 confirmed cases have been reported, and there are 851 suspected cases. A total of 660 716 close contacts were traced, and 51 856 close contacts were still in medical observation.

There were 570 new confirmed cases in Hubei (565 in Wuhan), 2292 new cured cases (1675 in Wuhan), 34 new deaths (26 in Wuhan), and 32 959 confirmed cases (27 700 in Wuhan). Among them, 7107 were severe cases (6393 in Wuhan). A total of 31 187 discharged patients were cured (19 227 in Wuhan); there were a total of 2761 deaths (2195 in Wuhan) and a total of 66 907 confirmed cases (49 122 in Wuhan). There were 64 new suspected cases (50 in Wuhan) and 646 suspected cases (393 in Wuhan).

A total of 144 confirmed cases were reported from Hong Kong, Macao, and Taiwan: 95 in the Hong Kong Special Administrative Region (33 discharged, 2 died), 10 in Macau Special Administrative Region (8 discharged), and 39 in Taiwan (9 discharged, 1 died).

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Communicated by:
ProMED-mail
<promed@promedmail.org>
and
ProMED-mail Rapporteur Kunihiko Iizuka

[According to the report above, there have now been a total of 79 824 cases of confirmed COVID-19 reported from China, representing an increase of 573 cases in the past 24 hours, of which 570 (99.5%) were in Hubei province. In addition, there were 35 deaths reported, with 34 (97.1%) reported in Hubei. There was 1 new case reported from Hong Kong.

A good map of China showing provinces can be found at
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.chinadiscovery.com%2Fchina-maps%2Fchina-provincial-map.html&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166947901&sdata=sgzzlC%2FncVtgCQBUaf0Qz4CoW6LyITkbhtoKmDVsHMw%3D&reserved=0>,
and a HealthMap/ProMED-mail map can be seen at
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fhealthmap.org%2Fpromed%2Fp%2F155&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186353166947901&sdata=3y%2FprrS%2FFlfjEcFGYc8jXvSNfKpVu90CVRlrRgblA8k%3D&reserved=0>. - Mod.MPP]

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[3] Countries with notable local transmission (South Korea, Italy, Iran)
A. South Korea: 3150 total cases, 17 deaths
Official report from KCDC
Date: Sat 29 Feb 2020
Source: Ministry of Health and Welfare, Korean CDC [in Korean, machine trans., edited]
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.mohw.go.kr%2Freact%2Fal%2Fsal0301vw.jsp%3FPAR_MENU_ID%3D04%26MENU_ID%3D0403%26page%3D1%26CONT_SEQ%3D353256&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166947901&sdata=NPTdojk%2B23HYWPp%2Bv9nrhw8xpj9%2B5Bc8tMncMB%2BZX%2F4%3D&reserved=0>

Data taken from a table on the website of the Korean MOHW (Ministry of Health and Welfare). Data source: Korean CDC

Date and time:
[28 Feb 2020 16:00 (4:00 PM) KT 2337 confirmed cases, 13 deaths]
29 Feb 2020 9:00 AM KT 2931 confirmed cases, 16 deaths
29 Feb 2020 16:00 (4:00 PM) KT 3150 confirmed cases, 17 deaths

Change: 813 newly confirmed infections; 4 new deaths from 28 Feb 2020 16:00 (4 PM) reported cases, among previously confirmed cases

Distribution of cases by province: total case / change from 16:00 (4 PM) 28 Feb 2020 to 16:00 (4 PM) 29 Feb 2020
Seoul 77 / 15
Busan 80 / 15
Dae-gu 2296 / 717
Incheon 6 / 2
Gwangju 9 / 0
Daejeon 13 / -1 (changed from Daejeon to Dae-gu)
Ulsan 17 / 3
Sejong 1 / 0
Gangwan 7 / 0
Gyeonggi 82 / 10
Gyeongbuk 488 / 79
Gyeongnam 59 / 10
Chungbuk 10 / 1
Chungnam 48 / 13
Jeonbuk 5 / 0
Jeonnam 3 / 2
Jeju 2 / 0

Total: 3150 / 813

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[In the past 24 hours the tally of confirmed cases of COVID-19 in South Korea has increased by 813 cases and 4 deaths.

Dae-gu province and Gyeongbuk provinces have reported the highest number of cases, 2296 and 488, respectively. Dae-gu is completely surrounded by Gyeongbuk province in the central eastern part of South Korea. Dae-gu has been the epicenter of this ongoing outbreak.

A good map showing provinces in South Korea can be found at
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.nationsonline.org%2Foneworld%2Fmap%2Fkorea-south-administrative-map.htm&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166947901&sdata=SKmM6tkAQAY9Q4gUBZ3RzJRz031492vgWvmQIwYPapQ%3D&reserved=0>.
- Mod.MPP]

B. Italy: 1049 cases 29 deaths
Date: Sat 29 Feb 2020
Source: Italian Government Health Ministry [in Italian, machine trans, edited]
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.salute.gov.it%2Fportale%2Fnews%2Fp3_2_1_1_1.jsp%3Flingua%3Ditaliano%26menu%3Dnotizie%26p%3Ddalministero%26id%3D4133&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166947901&sdata=0%2B15Qutm02eZfg7Mhi9ecN%2Fl%2BnR7dUUlZnuBiaLyi6c%3D&reserved=0>

Regarding health monitoring relating to the spread of coronavirus on the national territory, 1049 people are currently positive for the virus.

There are 401 patients hospitalized with symptoms, with 105 in intensive care, while 543 are in home isolation. The number of people healed is 50. The dead are 29; this number, however, can be confirmed only after the Istituto Superiore di Sanita has established the actual cause of the death.

The number of people infected in the individual regions is as follows:
615 in Lombardy,
191 in Veneto,
217 in Emilia-Romagna,
42 in Liguria,
11 in Piedmont,
11 in Tuscany,
11 in the Marche,
4 in Sicily,
13 in Campania,
6 in Lazio,
3 in Puglia,
2 in Abruzzo,
1 in Calabria, and
1 in the Autonomous Province of Bolzano.

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[The current tally of confirmed cases of COVID-19 in Italy is now 1049, including 29 deaths, up from 888 cases and 21 deaths reported yesterday (28 Feb 2020).

Italy is a major tourist point for other Europeans, with Lombardy being a major commercial hub. In addition, Italians are highly mobile and travel throughout Europe, and Italy is a major tourist location for Europeans and the Americas. See section [6] below for imported cases from Italy to other countries in Europe, a sign of this mobility.

A map of Italy showing regions:
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.mapsofworld.com%2Fitaly%2Fregions.html&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166947901&sdata=BcfH7LiYQas6s5lKv%2BlnIoiSl%2FT1B8XowfCURRc1JQQ%3D&reserved=0>. - Mod.MPP]

C. Iran: 593 cases, 43 deaths
Date: Sat 29 Feb 2020
Source: Medical Express [edited]
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fmedicalxpress.com%2Fnews%2F2020-02-iran-surge-coronavirus-cases.html&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186353166947901&sdata=Mv6k0Pw4aVCpErZHmCYLi0Moxh3p2CRhPC0AUBPCskQ%3D&reserved=0>

Iran on Saturday [29 Feb 2020] reported a surge in new coronavirus cases as the number of deaths jumped to 43, but it dismissed as "rumours" a report the real toll was much higher. Since it announced its 1st deaths from COVID-19, Iran has scrambled to bring the outbreak under control, shutting schools, suspending cultural and sporting events, and halting meetings of the cabinet and parliament.

The health ministry on Saturday [29 Feb 2020] reported 9 new deaths and a 53% jump in infections over the previous 24 hours, taking the overall totals to 43 deaths among 593 cases. That was the highest number of new cases for a single day since [19 Feb 2020], when Iran announced its 1st 2 deaths in Qom, a centre for Islamic studies and pilgrimages, including from abroad.

Health ministry spokesman Kianoush Jahanpour accused foreign media of spreading misinformation about the outbreak. "Given the rumours and false and contradictory content that may be published from satellite networks or media, which are not well-intentioned towards Iranian people, I must say that what we publish as definitive statistics is based on the latest definitive findings of laboratory tests," he said.

Fear of the virus is palpable on the streets of Tehran, which have been less crowded than usual as people apparently stayed at home. Traffic was flowing more freely than normal in the capital on Saturday morning [29 Feb 2020], when it usually chokes the streets at the start of the working week. The office of Tehran's governor announced a reduction in working hours in a bid to reduce the chances of the virus spreading, state television reported.

Shops and pharmacies have been struggling to meet demand as people stock up on bleach, disinfectant wipes, face masks, and other sanitary products, as well as non-perishable food.

"Business... has hit rock bottom because of the coronavirus," said [H], owner of one of Tehran's now-empty restaurants. Large posters have gone up on advertising billboards in the capital urging people to follow hygiene guidelines such as washing hands and not touching handrails and other objects in public places.

Jahanpour said on Saturday [29 Feb 2020] that 205 cases had been detected in the previous 24 hours, increasing the total of confirmed infections to 593. Among the latest infections were a new outbreak of 22 cases in Golestan, a northeastern province on the Caspian Sea coast.

Many of the country's neighbours have reported coronavirus infections in people linked to Iran, and most have imposed restrictions on travel to and from the Islamic republic. On Wednesday [26 Feb 2020], Iranian authorities announced domestic travel restrictions for people with confirmed or suspected infections.

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[In the past 24 hours, the number of cases of COVID-19 confirmed in Iran has grown from 388 to 593, an increase of 205 newly confirmed cases. The number of fatalities has also increased from 34 to 43, an increase of 9 new fatalities.

Qom, the apparent epicenter of this outbreak, is located to the southwest of Tehran in central Iran. A good map of Iran showing provinces can be found at
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.mapsofworld.com%2Firan%2Firan-political-map.html&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166947901&sdata=G1OWPOQKXul5GJApF9l2IDNyqB7mnG2jhd%2B0v32Bwo4%3D&reserved=0>. A HealthMap/ProMED-mail map of Iran is available at
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fhealthmap.org%2Fpromed%2Fp%2F128&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186353166947901&sdata=B%2B6LHkcqJ0EtUtJrrwHEy99UGbRyMP21bg3j217oCJk%3D&reserved=0>. - Mod.MPP]

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[4] New countries confirming cases
Date: Sat 29 Feb 2020

Qatar ex Iran
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fmenafn.com%2F1099777100%2FQatar-reports-first-case-of-coronavirus&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166947901&sdata=RDYQjrifzIt1Qk0hddrkwqrW98eBeY943JD8Ve0PDFo%3D&reserved=0>
Ecuador ex Spain
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.fox5ny.com%2Fnews%2Fecuador-reports-1st-new-coronavirus-case-as-mexico-confirms-2-more&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166947901&sdata=Knj1DqGzM8oEmudm9aqy85iw2MUf6It5WvCu5T6V0D0%3D&reserved=0>
Luxembourg ex Italy
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fsunriseread.com%2Fluxembourg-reports-first-coronavirus-case-rtl%2F52723%2F&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186353166947901&sdata=OBAwr%2F8I8uFuD5s5BKQhKtobp2LCKzfIfPK2xKTu1bY%3D&reserved=0>
Ireland ex Italy
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.irishtimes.com%2Fnews%2Fhealth%2Fcoronavirus-first-case-of-covid-19-confirmed-in-republic-1.4189306&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166947901&sdata=xwYQYotybUDVEmac92QFjR6Yk2piidDwdb4JvcK2juQ%3D&reserved=0>
Armenia ex Iran
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.facebook.com%2Fnikol.pashinyan%2Fposts%2F2569498986703814%3F__tn__%3D-R&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166957857&sdata=Vi2r9E0dTmof4hwhlfVoHeys21Dfnfh6gy1VTxaoY9k%3D&reserved=0>

[Our thanks to Ryan McGinnis for keeping us informed of new infected areas.

In the past 24 hours, there have been 4 new countries confirming cases of COVID-19: 3 related to transmission in Italy, and one related to transmission in Spain. - Mod.MPP]

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[5] Austria: non-importation case
Date: Sat 29 Feb 2020
From: Dr. Wolfgang Hoepler <w.hoepler@gmx.at>

1st case of an Austrian patient with COVID-19 requiring intensive care treatment due to ARDS

Tamara Seitz, Wolfgang Hoepler, Emanuela Friese, Sebastian Baumgartner, Christian Clodi, Iulia Niculescu, Viktor Lenhart, Alexander Zoufaly, Dorit Stahl, Taemi Yoshida, Lilian Schaeffl-Doweik, Drina Petener, Franz Weidinger, Christian Madl, Stephan Aberle, Elisabeth Puchhammer-Stoeckl, Alexander Indra, Daniela Schmid, Michael Binder, Christoph Wenisch, Hermann Laferl

We would like to report the 1st case of a critically ill Austrian patient with COVID-19 currently receiving treatment in the intensive care unit of our Department of Infectious Diseases in a negative pressure isolation room at the Kaiser Franz Josef Hospital in Vienna, Austria.

On the 13 Feb 2020, the 72-year-old patient, whose past medical history included hypertension, depression, hyperlipidemia, and resection of a carcinoma of the prostate in 2018, had developed fever and malaise, and the general practitioner referred him to a municipal hospital with suspected pneumonia on [17 Feb 2020].

Initial laboratory results showed reduced white blood cell count (WBC) of 3200 G/l with a normal lymphocyte count, thrombocytopenia (106 G/l) and a slightly elevated C-reactive protein (CRP) of 25 mg/l. The chest X-ray demonstrated bronchopneumonia in the left lower lobe. Therefore, antibiotic therapy with intravenous cefuroxime was started.

In the following days, the patient developed progressive dyspnea, and CRP levels rose up to 213 mg/l. Antibiotic therapy was switched to intravenous levofloxacin.

The patient denied having been abroad in the last few weeks.

Due to further respiratory deterioration, on [26 Feb 2020], the patient had to be transferred to the intensive care unit, where he had to be promptly intubated and mechanically ventilated. The CT scan revealed massive pneumonic consolidations in all lung lobes as in bilateral pneumonia plus ARDS (adult respiratory distress syndrome). Antibiotic therapy was escalated to meropenem plus doxycycline plus linezolid.

On [27 Feb 2020], the PCR from tracheal secretion turned out to be positive for SARS-CoV-2. Consequently, the patient was immediately transferred to our specialized department for isolation and further management.

At the time of admission to our ICU, he was mechanically ventilated with a fraction of inspired oxygen of 45%, PEEP 13, and Pmax 25 mbar; was sedated with moderate doses of propofol and remifentanyl; and received low-dose hemodynamic support with noradrenaline.

The laboratory workup showed normal absolute WBC, an increased neutrophil (82%), and a decreased lymphocyte count (10%), a normal platelet count, a falling CRP of 128 mg/l, and normal liver and kidney function tests.

We continued antibiotic therapy and established experimental antiviral therapy with hydroxychloroquine 500 mg bid (planned for 10 days) and lopinavir/ritonavir 400/100 mg bid. It has not been possible yet to administer remdesivir in a compassionate use program because of the study protocol.

The source of the infection has not yet been clearly defined; the patient owns a renowned company with many international clients.

So far, the PCR results from nasopharyngeal swabs of more than 90 contacts have all turned out negative. The patient himself continues in a critical condition, at the moment with no signs of further deterioration.

Communicated by:
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[HealthMap/ProMED-mail map:
Austria: <https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fhealthmap.org%2Fpromed%2Fp%2F109&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186353166957857&sdata=5r7BBaNoJb2dwKuzsX0eVlqsGScbSh8YNYJf6MMedkM%3D&reserved=0>]

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[6] Selected media reports of interest
A. USA, Washington state cases without epidemiologic links and 1st death
Date: Sat 29 Feb 2020
Source: King5 News [edited]
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.king5.com%2Farticle%2Fnews%2Fhealth%2Fcoronavirus%2Fcoronavirus-death-washington-state%2F281-5a511b20-4a3f-4380-8d79-15d7a1456887&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166957857&sdata=xW5PNEyM4qSJtM1BMWEcIhTkB%2BdYBbZxoRw9oo8TBQo%3D&reserved=0>

A King County resident has died from the 2019 novel coronavirus, also known as COVID-19, health officials said Saturday [29 Feb 2020]. This is the 1st known death from COVID-19 in the United States.

There are currently 6 presumptively positive cases of COVID-19 in Washington state, according to State Health Officer Dr. Lofy. These patients include 3 new cases reported Saturday [29 Feb 2020], including the patient who died. It also includes a King County woman and a Snohomish County teenager whose tests came back positive on Friday [28 Feb 2020]. It also includes a Snohomish County man who was the 1st person to be diagnosed in the US in January [2020]. That person has since recovered.

The man who died was a patient at EvergreenHealth in Kirkland. He was admitted with serious respiratory issues and tested positive for the virus. He was in his 50s and had underlying health conditions, according to Dr. Jeff Duchin with Public Health Seattle & King County. The man had no history of travel outside of the US or known contact with anyone who had COVID-19.

The other 2 new patients are connected to the Life Care nursing facility in Kirkland. One is a woman in her 40s who is a healthcare worker at Life Care. She is in satisfactory condition at Overlake Hospital and hasn't had any travel outside of the US, Duchin said. The other is a woman in her 70s and a resident at Life Care. She is in serious condition at EvergreenHealth.

There are over 50 individuals associated with Life Care who have respiratory symptoms or are hospitalized with pneumonia or other conditions and are being tested for COVID-19, according to Duchin. Public Health officials are investigating this as a possible outbreak at Life Care Center. "Current residents and associates are being monitored closely, and any with symptoms or who are potentially exposed are quarantined. As a precaution, all visits to the facility from families, volunteers, or vendors are not allowed," said officials with Life Care Center of Kirkland.

The Centers for Disease Control and Prevention are sending a team of epidemiologists to King County to support local health experts as they work to identify and test new cases.

"While the vast majority of cases of COVID-19 are believed to be mild, the virus can be a very serious infection that can lead to death. Protecting the health of our community and supporting the care of healthcare workers is our top priority," said Duchin.

Gov. Jay Inslee declared a state of emergency on Saturday [29 Feb 2020] in response to the new cases of COVID-19 and directed state agencies to use all resources necessary to prepare and respond to the outbreak. "It is a sad day in our state as we learn that a Washingtonian has died from COVID-19. Our hearts go out to their family and friends. We will continue to work toward a day where no one dies from this virus," said Gov. Inslee. "In partnership with the Washington State Department of Health, the Washington State Department of Emergency Management, and local and community health partners, we are strengthening our preparedness and response efforts. I am committed to keeping Washingtonians healthy, safe, and informed."

The Centers for Disease Control and Prevention said Saturday [29 Feb 2020] there are 22 confirmed cases of COVID-19 across the US. As COVID-19 cases continue to be identified in the state and globally, health officials said it's important to maintain proper health hygiene. This means washing hands with soap and water; avoid touching eyes, nose, and mouth; avoiding large crowded areas if possible; and, most importantly, staying home from work or school if you're sick.

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[As mentioned in yesterday's moderator comment, "The identification of 3 cases without identifiable epidemiologic links strongly suggests that we are moving into the stage of "seek and ye shall find." It looks as though states are seeking and now finding. The silent transmission into these communities speaks for the likelihood of more mild clinical presentations and subclinical infections breaking the directly identifiable epidemiologic links.

The possible outbreak of COVID-19 in a long-term care facility with many residents of increased age and with multiple pre-existing co-morbidities is worrisome.

Washington state, like California and Oregon, is located along the western part of the USA with a Pacific coastline. - Mod.MPP]

B. France ex Egypt
Date: Sat 29 Feb 2020
Source: Egypt Today [abridged, edited]
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.egypttoday.com%2FArticle%2F1%2F82137%2FWorkers-in-hotel-of-Coronavirus-infected-tourists-to-be-tested&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166957857&sdata=VpsqPrSUBKvOgxQ4Lt8KZ%2BIuIC18gM4TfkNTS%2FnHVAk%3D&reserved=0>

Prime Minister Mostafa Madbouly declared on Saturday [29 Feb 2020] that workers in the hotel where 2 French tourists diagnosed with coronavirus were staying will be tested.

The prime minister affirmed that Egyptian authorities had consulted with French counterparts over the diagnosis of coronavirus of 2 French tourists coming from Egypt. The 2 were part of a group of 6 who were on holiday in Egypt between [5-16 Feb 2020]. Hence, their place of residence was identified, and the workers will be tested.

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[In yesterday's ProMED update, there was a report of a man returning to Canada from Egypt, also positive for the SARS-CoV-2. At that point, I commented "The question here is whether the infection was originally acquired in Egypt or in Canada. There have been imported cases into both countries. We await further information. In either location it would signal beneath the "radarscope" transmission." The same applies to returning tourists to France. Did the transmission occur in Egypt or in France? - Mod.MPP]

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[7] WHO situation report 40, as of 29 Feb 2020
Date: Sat 29 Feb 2020
Source: WHO [edited]
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.who.int%2Fdocs%2Fdefault-source%2Fcoronaviruse%2Fsituation-reports%2F20200229-sitrep-40-covid-

19.pdf%3Fsfvrsn%3D7203e653_2&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186353166957857&sdata=XcaVPgRCSw2jDNj24wX34GZZ8w%2F7TsBcLQMtSLu123U%3D&reserved=0>

*The situation report includes information provided by national
authorities as of 10 a.m. CET.

Highlights

- Two new Member States (Mexico and San Marino) reported cases of
COVID-19 in the past 24 hours.

- WHO has published the Rational use of personal protective equipment
for COVID-19
[<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fapps.who.int%2Firis%2Fbitstream%2Fhandle%2F10665%2F331215%2FWHO-2019-nCov-IPCPPE_use-2020.1-
eng.pdf&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186353166957857&sdata=ZWSM9SUM6tJ7dkPR%2FmMaLO53f9gdivpD52hS9tWwrG4%3D&reserved=0>].
This document summarizes WHO recommendations for the appropriate use
of personal protective equipment (PPE) in healthcare and community
settings, including the handling of cargo. More information on
infection prevention and control (IPC) activities can be found in the
Subject in Focus.

Subject in Focus: Update on infection prevention and control
Infection prevention and control (IPC) is a major factor in preventive
and mitigation measures for COVID-19. To ensure evidence-based quality
guidance and prompt response to global demand for personal protective
equipment (PPE), WHO has convened the IPC expert global network of
specialists from around the world since the beginning of the outbreak.
Experts are members of the Global Infection Prevention and Control
Network (GIPCN) or members of relevant institutions caring for
COVID-19 patients. This network discusses technical aspects of IPC
measures and shares epidemiological updates and experiences across
affected countries. In consultation with this global IPC expert
network, WHO has released 3 key IPC interim guidance materials
(<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.who.int%2Femergencies%2Fdiseases%2Fnovel-coronavirus-2019%2Ftechnical-guidance%2Finfection-prevention-and-
control&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166957857&sdata=PxrUIzD1MdFBg37rMqxJPN1%2FPUGYn0SMQeYJ5f1esV8%3D&reserved=0>).

Updates on IPC activities include the following:
- Publishing the guidance document: Rational use of personal
protective equipment for COVID-19
(<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fapps.who.int%2Firis%2Fbitstream%2Fhandle%2F10665%2F331215%2FWHO-2019-nCov-IPCPPE_use-2020.1-
eng.pdf&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186353166957857&sdata=ZWSM9SUM6tJ7dkPR%2FmMaLO53f9gdivpD52hS9tWwrG4%3D&reserved=0>).
This document summarizes WHO recommendations for the appropriate use
of PPE in healthcare and community settings, including the handling of
cargo.

- Deployment of IPC specialists to Italy to support the COVID-19
response and to facilitate IPC training in the European region.

- Development of frequently asked questions (FAQ) in response to
queries from the public and communities on blood safety, PPE for
specimen collection, cleaning & disinfection, self-isolation, and
self-monitoring.

- Launching the OpenWHO online course "Infection Prevention and
Control (IPC) for COVID-19"
(<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fopenwho.org%2Fcourses%2FCOVID-19-IPC-EN&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186353166957857&sdata=bdlslCSie%2FAHf3nhGvnea3xT5YkY1EUSXSfFdTpxP6o%3D&reserved=0>) on [25 Feb 2020]. The
course has been accessed by 15 391 users as of [28 Feb 2020] (see
Figure 1).

[The figures provided in the report below are the figures from the
National Health Commission of China from 28 Feb 2020. The 29 Feb 2020
figures are included in sections [1] and [2] above. They are usually
posted between 7 and 9 p.m. (GMT-5), which is 3 a.m. (GMT+1) in
Geneva. All figures from all countries are data reported to WHO. -
Mod.MPP]

Excerpted to show confirmed cases outside mainland China:

Countries, territories or areas outside China with reported
laboratory-confirmed COVID-19 cases and deaths. Data as of [29 Feb
2020]*

WHO region:
Country: Total confirmed cases (new)* / Total deaths (new) /
Transmission classification** / Days since last reported case

Western Pacific Region:
China: (includes clinical and laboratory confirmed): 79 394 (435) /
2838 (47)
Japan: 230 (20) / 5 (1) / Local transmission / 0
Republic of Korea: 3150 (813) / 17 (4) / Local transmission / 0
Viet Nam: 16 (0) / 0 (0) / Local transmission / 16
Singapore: 98 (2) / 0 (0) / Local transmission / 0
Australia: 24 (1) / 0 (0) / Local transmission / 0
Malaysia: 24 (0) / 0 (0) / Local transmission / 2
Cambodia: 1 (0) / 0 (0) / Imported cases only / 33
Philippines: 3 (0) / 1 (0) / Imported cases only / 25
New Zealand: 1 (0) / 0 (0) / Imported cases only / 1

Southeast Asia Region:
Thailand: 42 (2) / 0 (0) / Local transmission / 0
Nepal: 1 (0) / 0 (0) / Imported cases only / 47
Sri Lanka: 1 (0) / 0 (0) / Imported cases only / 33
India: 3 (0) / 0 (0) / Imported cases only / 26

Region of the Americas:
United States of America: 62 (3) / 0 (0) / Local transmission / 0
Canada: 14 (3) / 0 (0) / Imported cases only / 0
Brazil: 1 (0) / 0 / Imported cases only / 3
Mexico: 2 (2) / 0 (0) / Imported cases only / 0

European Region:
France: 57 (19) / 2 (0) / Local transmission / 0
Finland: 2 (0) / 0 (0) / Imported cases only / 3
Germany: 57 (31) / 0 (0) / Local transmission / 0
Italy: 888 (238) / 21 (4) / Local transmission / 0
Russian Federation: 2 (0) / 0 (0) / Imported cases only / 29
Spain: 32 (7) / 0 (0) / Local transmission / 0
Sweden: 12 (5) / 0 (0) / Imported cases only / 0
United Kingdom: 20 (4) / 0 (0) / Local transmission / 0
Belgium: 1 (0) / 0 (0) / Imported cases only / 25
Israel: 5 (2) / 0 / Imported cases only / 0
Austria: 5 (1) / 0 (0) / Imported cases only / 0
Croatia: 5 (2) / 0 / Local transmission / 0
Switzerland: 10 (4) / 0 / Imported cases only / 0
Denmark: 2 (1) / 0 (0) / Imported cases only / 0
Estonia: 1 (0) / 0 (0) / Imported cases only / 2
Georgia: 2 (1) / 0 (0) / Imported cases only / 0
Greece: 3 (0) / 0 (0) / Imported cases only / 2
North Macedonia: 1 (0) / 0 (0) / Imported cases only / 3
Norway: 6 (2) / 0 (0) / Imported cases only / 0
Romania: 3 (2) / 0 (0) / Imported cases only / 0
Belarus: 1 (0) / 0 (0) / Imported cases only / 1
Lithuania: 1 (0) / 0 (0) / Imported cases only / 1
Netherlands: 2 (1) / 0 (0) / Imported cases only / 0
San Marino: 1 (1) / 0 (0) / Local transmission / 0

Eastern Mediterranean Region:
United Arab Emirates: 19 (0) / 0 (0) / Local transmission / 2
Iran (Islamic Republic of): 388 (143) / 34 (8) / Local transmission /
0
Egypt: 1 (0) / 0 (0) / Imported cases only / 15
Lebanon: 2 (0) / 0 (0) / Imported cases only / 3
Kuwait: 45 (2) / 0 (0) / Imported cases only / 0
Bahrain: 38 (5) / 0 (0) / Imported cases only / 0
Oman: 6 (0) / 0 (0) / Imported cases only / 2
Afghanistan: 1 (0) / 0 (0) / Imported cases only / 5
Iraq: 8 (1) / 0 (0) / Imported cases only / 0
Pakistan: 2 (0) / 0 (0) / Imported cases only / 3

African Region:
Algeria: 1 (0) / 0 (0) / Imported cases only / 4
Nigeria: 1 (0) / 0 (0) / Imported cases only / 1

Other: Cases on an international conveyance (Diamond Princess)***: 705
(0) / 6 (2) / Local transmission / 3

Grand total****: 6009 (1318) / 86 (19)

*Case classifications are based on WHO case definitions for COVID-19.
**Transmission classification is based on WHO analysis of available
official data and may be subject to reclassification as additional
data become available. Countries/territories/areas experiencing
multiple types of transmission are classified in the highest category
for which there is evidence; they may be removed from a given category
if interruption of transmission can be demonstrated. It should be
noted that even within categories, different
countries/territories/areas may have differing degrees of transmission
as indicated by the differing numbers of cases and other factors. Not
all locations within a given country/territory/area are equally
affected.
Terms:
- Community transmission is evidenced by the inability to relate
confirmed cases through chains of transmission for a large number of
cases, or by increasing positive tests through routine screening of
sentinel samples.
- Local transmission indicates locations where the source of infection
is within the reporting location.
- Imported cases only indicates locations where all cases have been
acquired outside the location of reporting.
- Under investigation indicates locations where type of transmission
has not been determined for any cases.
- Interrupted transmission indicates locations where interruption of
transmission has been demonstrated (details to be determined).
***Cases identified on a cruise ship currently in Japanese territorial
waters.
****266 female/386 male/5357 unknown. 28 healthcare workers (5 female
/12 male / 11 unknown).

[There are excellent graphs and a map available at the source URL, as
well as strategic objectives and preparedness and response
information.
- Figure 1: Countries, territories or areas with reported confirmed
cases of COVID-19, 29 Feb 2020.
- Figure 2: Epidemic curve of confirmed COVID-19 cases (n=5173)
reported outside of China, by date of report and WHO region with
complete days of reporting through [28 Feb 2020] - Mod.MPP]

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Communicated by:
ProMED-mail
<promed@promedmail.com>

[The number of countries reporting confirmed cases of COVID-19 with
transmission occurring outside China continues to grow and is now 53.
This includes 9 countries from the Western Pacific region, 24
countries from the European region, 4 countries from the Southeast
Asia region, 10 countries from the Eastern Mediterranean region, 4
countries from the Americas region, and 2 countries from the African
region. There has also been local transmission noted on the cruise
ship quarantined in Japan (the Diamond Princess).

The total number of cases reported from outside of China is now 6009
including 86 deaths.

At the same time, the daily number of reported cases and fatalities
reported by China keeps decreasing from levels that were 2000-3000
cases daily to less than 500 cases per day.

It is clear that the number of reported confirmed cases differs from
different reporting websites and is somewhat a function of time of day
the website is updated. For example, I note the time I've accessed the
Johns Hopkins website, but by the time the post is actually finished
with the editing process, those numbers have at times significantly
changed. Case counting is clearly a moving target, and, depending upon
when the website updates, the numbers may be different. - Mod.MPP]

[See Also:
COVID-19 update (21): companion animals, dog susp, RFI
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200229.7036661&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166957857&sdata=tbEDGly0bppsF2KmbNSEn6%2BZIz%2B6VLgaFz8jw1alvRk%3D&reserved=0
COVID-19 update (20): global, more importations, need for serosurveys,
WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200228.7035438&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166957857&sdata=l%2BXS3OWZUgjaEiPlYyR1B3%2FGCh774Ak21Mcw0e2qa5o%3D&reserved=0
COVID-19 update (19): China, global, Italy, Iran, Nigeria, imported
cases, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200228.7032761&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166957857&sdata=nBr9iAwYNoKkD0U2MlTzJ1TYBLKDawEtEx7%2B5U2JF1A%3D&reserved=0
COVID-19 update (18): China, global, Iran, Italy imported cases, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200226.7026481&data=02%7C01%7Cjeff.duchin%40kingcounty.gov%7C990efd8e5d4b43d9aef208d7bd9cba2e%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186353166957857&sdata=WnAnJhF2n8tbyUJtl%2FKqdILoEmtviGayq0nQOa2UxIs%3D&reserved=0
COVID-19 update (17): China, animal reservoir, wildlife trade &

consumption ban https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200225.7024245&data=[illegible]
COVID-19 update (16): China, global, Iran, Eastern Mediterranean
imported cases, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200224.7022200&data=[illegible]
COVID-19 update (15): China, global, Iran, Italy, returning cruise
evacuees, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200223.7017958&data=[illegible]
COVID-19 update (14): China, global, Iran, Italy, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200223.7015552&data=[illegible]
COVID-19 update (13): China, global, Iran, Lebanon, Israel, WHO, RFI
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200222.7013077&data=[illegible]
COVID-19 update (12): China, global, Iran, cruise ship epidemiology,
WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200220.7009533&data=[illegible]
COVID-19 update (11): animal reservoir, intermediate hosts, pangolin
susp. https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200220.7009213&data=[illegible]
COVID-19 update (10): China, global, Iran, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200219.7005749&data=[illegible]
COVID-19 update (09): China, global, pulmonary pathological findings,
WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200218.7002608&data=[illegible]
COVID-19 update (08): companion animals, RFI
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200218.7002276&data=[illegible]
COVID-19 update (07): China, global, comment, epidemiological
analysis, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200218.6999424&data=[illegible]
COVID-19 update (06): animal reservoir, intermediate hosts
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200217.6997782&data=[illegible]
COVID-19 update (05): China, global, Taiwan fatality, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200216.6995828&data=[illegible]
COVID-19 update (04): China, global, Thailand, cruise ships, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200215.6993525&data=[illegible]
COVID-19 update (03): China, global, Egypt, influenza surveillance,
WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200214.6991020&data=[illegible]
COVID-19 update (02): China, global, reporting criteria, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200214.6987678&data=[illegible]
COVID-19 update (01): China, global, EVZD, reporting criteria, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200213.6984084&data=[illegible]
Novel coronavirus (42): China, global, COVID-19, SARS-CoV-2, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200211.6979942&data=[illegible]
Novel coronavirus (41): China, global, clinical pics, asymptomatic
trans., WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200210.6976117&data=[illegible]
Novel coronavirus (40): animal reservoir, pangolin poss intermediate
host, RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200210.6972104&data=[illegible]
Novel coronavirus (39): China, global, false negative NAT tests, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200209.6972103&data=[illegible]
Novel coronavirus (38): China, global, local transm, CFR, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200209.696999&data=[illegible]
Novel coronavirus (37): China, global, cruise, clinical, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200208.6967526&data=[illegible]
Novel coronavirus (36): China, global, incubation, airport screen, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200207.6963294&data=[illegible]
Novel coronavirus (35): China, global, health workers, cruise, WHO,
RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200206.6959291&data=[illegible]
Novel coronavirus (34): China, global, deaths, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200205.6955196&data=[illegible]
Novel coronavirus (33): China, global, epidemic modeling interactive
tool available https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200204.6954575&data=[illegible]
Novel coronavirus (32): China, global, management, research
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200204.6950903&data=[illegible]
Novel coronavirus (31): China, Global,
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200202.6946685&data=[illegible]
Novel coronavirus (30): updates, China, Viet Nam, research
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200202.6945658&data=[illegible]
Novel coronavirus (29): updates, China, Philippines, USA, Canada,
Spain https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200202.6944056&data=[illegible]
Novel coronavirus (28): China (HU) animal reservoir
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200201.6943858&data=[illegible]
Novel coronavirus (27): updates, Africa
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200201.6943724&data=[illegible]
Novel coronavirus (26): research, research, early spread in Wuhan,
China https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200201.6943519&data=[illegible]
Novel coronavirus (25): updates, China, Italy, Russia, UK
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200131.6940058&data=[illegible]
Novel coronavirus (24): updates, China, PHEIC, India, economy,
research https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200131.6937255&data=[illegible]
Novel coronavirus (23): updates, China, UAE, Finland, ECDC, research
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200129.6929532&data=[illegible]
Novel coronavirus (22): reservoir suggested, bats
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200129.6930718&data=[illegible]
Novel coronavirus (21): China, Canada, Sri Lanka ex China
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200127.6918021&data=[illegible]
Novel coronavirus (20): China, wildlife trade ban
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200127.6922060&data=[illegible]
Novel coronavirus (19): China (HU) transmission dynamics
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200126.6918012&data=[illegible]
Novel coronavirus (18): China (HU) animal reservoir
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200125.6915411&data=[illegible]
Novel coronavirus (17): China (HU), France, USA ex China, Viet Nam p2p
trans. https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200125.6914553&data=[illegible]
Novel coronavirus (16): China (HU), Viet Nam, Singapore ex China, IHR
committee WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200123.6910685&data=[illegible]
Novel coronavirus (15): China (HU) wild animal sources
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200123.6909913&data=[illegible]
Novel coronavirus (14): China (HU), Hong Kong, Macau ex China
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200122.6907971&data=[illegible]
Novel coronavirus (13): China (HU) USA ex China
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200121.6903878&data=[illegible]
Novel coronavirus (12): China (HU) new fatality, healthcare workers,
WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200121.6901757&data=[illegible]
Novel coronavirus (11): China (HU), South Korea ex China
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200120.6899007&data=[illegible]
Novel coronavirus (10): China (HU, GD, BJ)
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200119.6898567&data=[illegible]
Novel coronavirus (09): China, 1st diagnostic test
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200119.6897998&data=[illegible]
Novel coronavirus (08): China (HU) more cases, Nepal susp, modeling
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200118.6897282&data=[illegible]
Novel coronavirus (07): China (HU), Thailand ex China, Japan ex China,
WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200117.6895647&data=[illegible]
Novel coronavirus (06): China (HU) fatality, Japan ex China,
antipyretic use https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200116.6893471&data=[illegible]
Novel coronavirus (05): China (HU), Japan ex China
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200115.6891515&data=[illegible]
Novel coronavirus (04): China (HU), Thailand ex China, .6889527
Novel coronavirus (03): China (HU) animal reservoir suggested, RFI
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200114.6887480&data=[illegible]
Novel coronavirus (02): Thailand ex China (HU) WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200113.6886644&data=[illegible]
Novel coronavirus (01): China (HU) WHO, phylogenetic tree
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200112.6885385&data=[illegible]
Undiagnosed pneumonia - China (HU) (10): genome available, Hong Kong
surveill. https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200111.6883998&data=[illegible]
Undiagnosed pneumonia - China (HU) (09): novel coronavirus, more info,
fatality https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200110.6883253&data=[illegible]
Undiagnosed pneumonia - China (HU) (08): novel coronavirus, WHO
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200110.6881082&data=[illegible]
Undiagnosed pneumonia - China (HU) (07): official confirmation of
novel coronavirus https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200108.6878869&data=[illegible]
Undiagnosed pneumonia - China (06): (HU) Hong Kong surveillance, USA
CDC alert https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200108.6876648&data=[illegible]
Undiagnosed pneumonia - China (05): (HU) novel coronavirus identified
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200108.6877694&data=[illegible]
Undiagnosed pneumonia - China (04): (HU) Hong Kong surveillance
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200106.6874277&data=[illegible]
Undiagnosed pneumonia - China (03): (HU) updates, SARS, MERS ruled
out, WHO, RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200105.6872267&data=[illegible]
Undiagnosed pneumonia - China (02): (HU) updates, other country
responses, RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200103.6869668&data=[illegible]
Undiagnosed pneumonia - China (01): (HU) wildlife sales, market
closed, RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200102.6866757&data=[illegible]
2019

Undiagnosed pneumonia - China (HU): RFI
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20191230.6864153&data=[illegible]
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List-Unsubscribe: https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fjoin.isid.org%2Fpromed%2F&data=[illegible]

End of ProMED Digest, Vol 93, Issue 1
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From: promed-ahead-bounces@promedmail.org on behalf of promed-ahead-request@promedmail.org
To: promed-ahead@promedmail.org
Subject: ProMED-ahead Digest, Vol 92, Issue 1
Date: Saturday, February 29, 2020 8:50:40 PM

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Today's Topics:

1. PRO/AH/EDR> COVID-19 update (22): global, more importations
to new countries, 1st U.S. death, WHO (promed-ahead@promedmail.org)

Message: 1
Date: Sun, 1 Mar 2020 04:48:26 +0000
From: promed-ahead@promedmail.org
Subject: PRO/AH/EDR> COVID-19 update (22): global, more importations
to new countries, 1st U.S. death, WHO
To: promed-post@promedmail.org, promed-edr-post@promedmail.org,
promed-ahead-post@promedmail.org
Message-ID:
<01000170946c8c4d-d3e59d27-f9c5-479f-87d6-b96576e238a9-000000@email.amazonses.com>

Content-Type: text/plain; charset=UTF-8

CORONAVIRUS DISEASE 2019 UPDATE (22): GLOBAL, MORE IMPORTATIONS TO NEW
COUNTRIES, 1ST U.S. DEATH, WHO
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A ProMED-mail post
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.promedmail.org&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389555518&sdata=lFEbEgpIsug1Qiq%2BqGzNMBhzg0f%2FMXnSWFNCskU4O2s%3D&reserved=0>
ProMED-mail is a program of the
International Society for Infectious Diseases
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.isid.org&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389555518&sdata=gOXB8zSNlBEjF%2F8MdL1sb%2B7xGBYON7f7SIPmMi2LB%2Fs%3D&reserved=0>

In this update:
[1] Global update: Johns Hopkins CSSE [accessed at 8:00 p.m. GMT-5]
[2] China: China National Health Commission 28 Feb 2020
[3] Countries with notable local transmission (South Korea, Italy,
Iran)
[4] New countries confirming cases
[5] Austria: non-importation case
[6] Selected media reports of interest: 1st U.S. death (WA)
[7] WHO situation report 39 (as of 28 Feb 2020)

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[1] Global update: Johns Hopkins CSSE [accessed at 9 p.m. GMT-5]
Date: Sat 29 Feb 2020
Source: Johns Hopkins CSSE (Center for Systems Science and
Engineering) [edited]
<https://gcc01.safelinks.protection.outlook.com/?
url=https%3A%2F%2Fgisanddata.maps.arcgis.com%2Fapps%2Fopsdashboard%2Findex.html%23%2Fbda7594740fd40299423467b48e9ecf6&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389555518&sdata=9NaAUct3wWQW9Qap%2BolBkOqxf1Y5QEXEMm8MbH%2Fc91M%3D&reserved=0>

Confirmed cases 2 Feb 2020 / 3 Feb 2020 / 4 Feb 2020 (early) / 4 Feb
2020 (end of day) / 5 Feb 2020 / 6 Feb 2020 / 7 Feb 2020 / 8 Feb 2020
/ 9 Feb 2020 early / 9 Feb 2020 late / 10 Feb 2020 / 11 Feb 2020 / 12
Feb 2020 / 13 Feb 2020 / 14 Feb 2020 / 15 Feb 2020 / 16 Feb 2020 / 17
Feb 2020 / 18 Feb 2020 / 19 Feb 2020 / 20 Feb 2020 / 21 Feb 2020 / 22
Feb 2020 / 23 Feb 2020 / 24 Feb 2020 / 25 Feb 2020 / 26 Feb 2020/ 27
Feb 2020 / 28 Feb 2020 / 29 Feb 2020 / Country / Region

17 187 / 19 693 / 20 636 / 23 746 / 27 396 / 30 553 / 34 524 / 37 174
/ 37 199 / 40 157 / 42 310 / 44 414 / 59 789 / 63 842 / 66 343 / 68
386 / 70 510 / 72 365 / 74 135 / 74 576 / 75 004 / 75 906 / 76 936 /
76 944 / 77 657 / 77 663 / 78,486 / 78 817 / 79 251 / 79 822 /
Mainland China
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94 / 95 / Hong Kong
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62 / 70 / USA
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/ 285 / 355 / 454 / 542 / 621 / 634 / 634 / 634 / 691 / 691 / 691 /
705 / 705 / 705 / 705 / Others (Diamond Princess)

Total number of reported deaths: 2977
Deaths outside of Mainland China: 216 [including 6 from the Diamond
Princess]
Iran: 43
South Korea: 17
Hong Kong: 2
Italy: 29
Diamond Princess: 6
France: 2
Japan: 5
Philippines: 1
Taiwan: 1

USA: 1

Data sources: WHO, CDC, ECDC, NHC, and DXY

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Communicated by:
ProMED-mail
<promed@promedmail.org>

[As mentioned previously, this website is constantly updated as new information comes in, so it is likely that when you read this post, the numbers will not match the linked numbers because they will have been updated since the post was prepared.

According to the data on the Johns Hopkins website, there are now a total of 7138 confirmed cases of COVID-19 reported from 63 countries/locations outside mainland China, representing an increase of 1835 cases reported in the past 24 hours, with South Korea accounting for 1189 of the newly reported cases, Italy accounting for 240 of the newly reported cases, and Iran accounting for 205 of the newly reported cases. There has been a global total of 2977 reported deaths, of which 107 were reported from outside of Mainland China. Other countries experiencing increases of more than 10 cases include Japan, 13 new cases; Germany, 31 cases; France, 43 new cases; and Spain, 13 new cases.

For the 4th consecutive day, more cases have been reported from outside of Mainland China than within Mainland China. - Mod.MPP]

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[2] China: China National Health Commission 28 Feb 2020
Date: Sun 1 Mar 2020
Source: China National Health Commission [in Chinese, machine trans. edited]
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.nhc.gov.cn%2Fxcs%2Fyqtb%2F202003%2F9d462194284840ad96ce75eb8e4c8039.shtml&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389565472&sdata=bKAeFoiV3yq1OgbwVtyilpISzTYCkZjqq9vcPsKEu40%3D&reserved=0>

At 04:00 on [29 Feb 2020], 31 provinces (autonomous regions, municipalities) and the Xinjiang Production and Construction Corps reported 573 new confirmed cases, 35 new deaths (34 in Hubei and 1 in Henan), and 132 new suspected cases.

On the same day, 2623 cases were cured and discharged, 8620 were close contacts of medical observation, and 299 cases of severe cases were reduced.

As of 24:00 on [29 Feb 2020], according to reports from 31 provinces (autonomous regions and municipalities) and the Xinjiang Production and Construction Corps, there were 35 329 confirmed cases (of which 7365 were severe cases), 41 825 were cured and discharged, and 2870 were fatal cases. A total of 79 824 confirmed cases have been reported, and there are 851 suspected cases. A total of 660 716 close contacts were traced, and 51 856 close contacts were still in medical observation.

There were 570 new confirmed cases in Hubei (565 in Wuhan), 2292 new cured cases (1675 in Wuhan), 34 new deaths (26 in Wuhan), and 32 959 confirmed cases (27 700 in Wuhan). Among them, 7107 were severe cases (6393 in Wuhan). A total of 31 187 discharged patients were cured (19 227 in Wuhan); there were a total of 2761 deaths (2195 in Wuhan) and a total of 66 907 confirmed cases (49 122 in Wuhan). There were 64 new suspected cases (50 in Wuhan) and 646 suspected cases (393 in Wuhan).

A total of 144 confirmed cases were reported from Hong Kong, Macao, and Taiwan: 95 in the Hong Kong Special Administrative Region (33 discharged, 2 died), 10 in Macau Special Administrative Region (8 discharged), and 39 in Taiwan (9 discharged, 1 died).

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Communicated by:
ProMED-mail
<promed@promedmail.org>
and
ProMED-mail Rapporteur Kunihiko Iizuka

[According to the report above, there have now been a total of 79 824 cases of confirmed COVID-19 reported from China, representing an increase of 573 cases in the past 24 hours, of which 570 (99.5%) were in Hubei province. In addition, there were 35 deaths reported, with 34 (97.1%) reported in Hubei. There was 1 new case reported from Hong Kong.

A good map of China showing provinces can be found at
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.chinadiscovery.com%2Fchina-maps%2Fchina-provincial-map.html&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389565472&sdata=cnVykEnAXuMg1yRIFzpOI0%2BSMPBTfu5Qm6ynTGn%2BRMo%3D&reserved=0>,
and a HealthMap/ProMED-mail map can be seen at
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fhealthmap.org%2Fpromed%2Fp%2F155&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186350389565472&sdata=NvOD8bj%2BLlp5aMKw5ACNR6BubiojNxc7EBVPXEw7RhA%3D&reserved=0>. - Mod.MPP]

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[3] Countries with notable local transmission (South Korea, Italy, Iran)
A. South Korea: 3150 total cases, 17 deaths
Official report from KCDC
Date: Sat 29 Feb 2020
Source: Ministry of Health and Welfare, Korean CDC [in Korean, machine trans., edited]
<https://gcc01.safelinks.protection.outlook.com/?
url=http%3A%2F%2Fwww.mohw.go.kr%2Freact%2Fal%2Fsal0301vw.jsp%3FPAR_MENU_ID%3D04%26MENU_ID%3D0403%26page%3D1%26CONT_SEQ%3D353256&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389565472&sdata=v3CObEq5kL%2FPnulMMb00HfpahNGamyHq7WfE1xamlSs%3D&reserved=0>

Data taken from a table on the website of the Korean MOHW (Ministry of Health and Welfare). Data source: Korean CDC

Date and time:
[28 Feb 2020 16:00 (4:00 PM) KT 2337 confirmed cases, 13 deaths]
29 Feb 2020 9:00 AM KT 2931 confirmed cases, 16 deaths
29 Feb 2020 16:00 (4:00 PM) KT 3150 confirmed cases, 17 deaths

Change: 813 newly confirmed infections; 4 new deaths from 28 Feb 2020 16:00 (4 PM) reported cases, among previously confirmed cases

Distribution of cases by province: total case / change from 16:00 (4 PM) 28 Feb 2020 to 16:00 (4 PM) 29 Feb 2020
Seoul 77 / 15
Busan 80 / 15
Dae-gu 2296 / 717
Incheon 6 / 2
Gwangju 9 / 0
Daejeon 13 / -1 (changed from Daejeon to Dae-gu)
Ulsan 17 / 3
Sejong 1 / 0
Gangwan 7 / 0
Gyeonggi 82 / 10
Gyeongbuk 488 / 79
Gyeongnam 59 / 10
Chungbuk 10 / 1
Chungnam 48 / 13
Jeonbuk 5 / 0
Jeonnam 3 / 2
Jeju 2 / 0

Total: 3150 / 813

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Communicated by:
ProMED-mail
<promed@promedmail.org>

[In the past 24 hours the tally of confirmed cases of COVID-19 in South Korea has increased by 813 cases and 4 deaths.

Dae-gu province and Gyeongbuk provinces have reported the highest number of cases, 2296 and 488, respectively. Dae-gu is completely surrounded by Gyeongbuk province in the central eastern part of South Korea. Dae-gu has been the epicenter of this ongoing outbreak.

A good map showing provinces in South Korea can be found at
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.nationsonline.org%2Foneworld%2Fmap%2Fkorea-south-administrative-map.htm&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389565472&sdata=MyaVg%2FfyLaEzGmvAQmcT2Umwe5%2BYEctIe6uosJriu8k%3D&reserved=0>.
- Mod.MPP]

B. Italy: 1049 cases 29 deaths
Date: Sat 29 Feb 2020
Source: Italian Government Health Ministry [in Italian, machine trans, edited]
<https://gcc01.safelinks.protection.outlook.com/?
url=http%3A%2F%2Fwww.salute.gov.it%2Fportale%2Fnews%2Fp3_2_1_1_1.jsp%3Flingua%3Ditaliano%26menu%3Dnotizie%26p%3Ddalministero%26id%3D4133&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389565472&sdata=y%2FXurlEEar%2Bf3lD%2FGcph7GYmMhaRl5qO2eUL%2FkiNE5w%3D&reserved=0>

Regarding health monitoring relating to the spread of coronavirus on the national territory, 1049 people are currently positive for the virus.

There are 401 patients hospitalized with symptoms, with 105 in intensive care, while 543 are in home isolation. The number of people healed is 50. The dead are 29; this number, however, can be confirmed only after the Istituto Superiore di Sanita has established the actual cause of the death.

The number of people infected in the individual regions is as follows:
615 in Lombardy,
191 in Veneto,
217 in Emilia-Romagna,
42 in Liguria,
11 in Piedmont,
11 in Tuscany,
11 in the Marche,
4 in Sicily,
13 in Campania,
6 in Lazio,
3 in Puglia,
2 in Abruzzo,
1 in Calabria, and
1 in the Autonomous Province of Bolzano.

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[The current tally of confirmed cases of COVID-19 in Italy is now 1049, including 29 deaths, up from 888 cases and 21 deaths reported yesterday (28 Feb 2020).

Italy is a major tourist point for other Europeans, with Lombardy being a major commercial hub. In addition, Italians are highly mobile and travel throughout Europe, and Italy is a major tourist location for Europeans and the Americas. See section [6] below for imported cases from Italy to other countries in Europe, a sign of this mobility.

A map of Italy showing regions:
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.mapsofworld.com%2Fitaly%2Fregions.html&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389565472&sdata=Ig%2F5qP4VWG020pZ6Jj0usFH3dfxpTnR6YNlsmJzbEJ8%3D&reserved=0>. - Mod.MPP]

C. Iran: 593 cases, 43 deaths
Date: Sat 29 Feb 2020
Source: Medical Express [edited]
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fmedicalxpress.com%2Fnews%2F2020-02-iran-surge-coronavirus-cases.html&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186350389565472&sdata=71W9m97srZpq8lmUcalXk25mDek0RbxtavFw9fpqf10%3D&reserved=0>

Iran on Saturday [29 Feb 2020] reported a surge in new coronavirus cases as the number of deaths jumped to 43, but it dismissed as "rumours" a report the real toll was much higher. Since it announced its 1st deaths from COVID-19, Iran has scrambled to bring the outbreak under control, shutting schools, suspending cultural and sporting events, and halting meetings of the cabinet and parliament.

The health ministry on Saturday [29 Feb 2020] reported 9 new deaths and a 53% jump in infections over the previous 24 hours, taking the overall totals to 43 deaths among 593 cases. That was the highest number of new cases for a single day since [19 Feb 2020], when Iran

announced its 1st 2 deaths in Qom, a centre for Islamic studies and pilgrimages, including from abroad.

Health ministry spokesman Kianoush Jahanpour accused foreign media of spreading misinformation about the outbreak. "Given the rumours and false and contradictory content that may be published from satellite networks or media, which are not well-intentioned towards Iranian people, I must say that what we publish as definitive statistics is based on the latest definitive findings of laboratory tests," he said.

Fear of the virus is palpable on the streets of Tehran, which have been less crowded than usual as people apparently stayed at home. Traffic was flowing more freely than normal in the capital on Saturday morning [29 Feb 2020], when it usually chokes the streets at the start of the working week. The office of Tehran's governor announced a reduction in working hours in a bid to reduce the chances of the virus spreading, state television reported.

Shops and pharmacies have been struggling to meet demand as people stock up on bleach, disinfectant wipes, face masks, and other sanitary products, as well as non-perishable food.

"Business... has hit rock bottom because of the coronavirus," said [H], owner of one of Tehran's now-empty restaurants. Large posters have gone up on advertising billboards in the capital urging people to follow hygiene guidelines such as washing hands and not touching handrails and other objects in public places.

Jahanpour said on Saturday [29 Feb 2020] that 205 cases had been detected in the previous 24 hours, increasing the total of confirmed infections to 593. Among the latest infections were a new outbreak of 22 cases in Golestan, a northeastern province on the Caspian Sea coast.

Many of the country's neighbours have reported coronavirus infections in people linked to Iran, and most have imposed restrictions on travel to and from the Islamic republic. On Wednesday [26 Feb 2020], Iranian authorities announced domestic travel restrictions for people with confirmed or suspected infections.

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[In the past 24 hours, the number of cases of COVID-19 confirmed in Iran has grown from 388 to 593, an increase of 205 newly confirmed cases. The number of fatalities has also increased from 34 to 43, an increase of 9 new fatalities.

Qom, the apparent epicenter of this outbreak, is located to the southwest of Tehran in central Iran. A good map of Iran showing provinces can be found at
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.mapsofworld.com%2Firan%2Firan-political-map.html&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389565472&sdata=dfCc2EHutcGoR5naM8oNEphJypr0kR7OuEIuLMpjd0U%3D&reserved=0>. A HealthMap/ProMED-mail map of Iran is available at
<https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fhealthmap.org%2Fpromed%2Fp%2F128&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186350389565472&sdata=5etpr9A0jw0vRCD%2FrU75NNWWwxtjis%2BYgOvTfctYij4%3D&reserved=0>. - Mod.MPP]

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[4] New countries confirming cases
Date: Sat 29 Feb 2020

Qatar ex Iran
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fmenafn.com%2F1099777100%2FQatar-reports-first-case-of-coronavirus&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389565472&sdata=qdNIOOqBuUnUnEoeBukyv5R8h8k3Zr1GhTZIuUNR7IM%3D&reserved=0>
Ecuador ex Spain
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.fox5ny.com%2Fnews%2Fecuador-reports-1st-new-coronavirus-case-as-mexico-confirms-2-more&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389565472&sdata=ubUSPmPerDE%2FctE87SQi49PHAz7FUIVolTsc4eVak58%3D&reserved=0>
Luxembourg ex Italy
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fsunriseread.com%2Fluxembourg-reports-first-coronavirus-case-rtl%2F52723%2F&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186350389565472&sdata=w%2FafzFfjxcI89jMbS5cB1jqfGh8ifXsRxye29jUVQ7Y%3D&reserved=0>
Ireland ex Italy
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.irishtimes.com%2Fnews%2Fhealth%2Fcoronavirus-first-case-of-covid-19-confirmed-in-republic-1.4189306&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389565472&sdata=gyCTr8j3oHYRvnuUJfN9KML8HHjYRUQejYJIxGqmdRk%3D&reserved=0>
Armenia ex Iran
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.facebook.com%2Fnikol.pashinyan%2Fposts%2F2569498986703814%3F__tn__%3D-R&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389565472&sdata=2qAIjd4OhcODZHGXpyAU4i9vAK2WLsxljToW%2B3Q5TvQ%3D&reserved=0>

[Our thanks to Ryan McGinnis for keeping us informed of new infected areas.

In the past 24 hours, there have been 4 new countries confirming cases of COVID-19: 3 related to transmission in Italy, and one related to transmission in Spain. - Mod.MPP]

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[5] Austria: non-importation case
Date: Sat 29 Feb 2020
From: Dr. Wolfgang Hoepler <w.hoepler@gmx.at>

1st case of an Austrian patient with COVID-19 requiring intensive care treatment due to ARDS

Tamara Seitz, Wolfgang Hoepler, Emanuela Friese, Sebastian Baumgartner, Christian Clodi, Iulia Niculescu, Viktor Lenhart, Alexander Zoufaly, Dorit Stahl, Taemi Yoshida, Lilian Schaeffl-Doweik, Drina Petener, Franz Weidinger, Christian Madl, Stephan Aberle, Elisabeth Puchhammer-Stoeckl, Alexander Indra, Daniela Schmid, Michael Binder, Christoph Wenisch, Hermann Laferl

We would like to report the 1st case of a critically ill Austrian patient with COVID-19 currently receiving treatment in the intensive care unit of our Department of Infectious Diseases in a negative pressure isolation room at the Kaiser Franz Josef Hospital in Vienna, Austria.

On the 13 Feb 2020, the 72-year-old patient, whose past medical history included hypertension, depression, hyperlipidemia, and resection of a carcinoma of the prostate in 2018, had developed fever and malaise, and the general practitioner referred him to a municipal hospital with suspected pneumonia on [17 Feb 2020].

Initial laboratory results showed reduced white blood cell count (WBC) of 3200 G/l with a normal lymphocyte count, thrombocytopenia (106 G/l) and a slightly elevated C-reactive protein (CRP) of 25 mg/l. The chest X-ray demonstrated bronchopneumonia in the left lower lobe. Therefore, antibiotic therapy with intravenous cefuroxime was started.

In the following days, the patient developed progressive dyspnea, and CRP levels rose up to 213 mg/l. Antibiotic therapy was switched to intravenous levofloxacin.

The patient denied having been abroad in the last few weeks.

Due to further respiratory deterioration, on [26 Feb 2020], the patient had to be transferred to the intensive care unit, where he had to be promptly intubated and mechanically ventilated. The CT scan revealed massive pneumonic consolidations in all lung lobes as in bilateral pneumonia plus ARDS (adult respiratory distress syndrome). Antibiotic therapy was escalated to meropenem plus doxycycline plus linezolid.

On [27 Feb 2020], the PCR from tracheal secretion turned out to be positive for SARS-CoV-2. Consequently, the patient was immediately transferred to our specialized department for isolation and further management.

At the time of admission to our ICU, he was mechanically ventilated with a fraction of inspired oxygen of 45%, PEEP 13, and Pmax 25 mbar; was sedated with moderate doses of propofol and remifentanyl; and received low-dose hemodynamic support with noradrenaline.

The laboratory workup showed normal absolute WBC, an increased neutrophil (82%), and a decreased lymphocyte count (10%), a normal platelet count, a falling CRP of 128 mg/l, and normal liver and kidney function tests.

We continued antibiotic therapy and established experimental antiviral therapy with hydroxychloroquine 500 mg bid (planned for 10 days) and lopinavir/ritonavir 400/100 mg bid. It has not been possible yet to administer remdesivir in a compassionate use program because of the study protocol.

The source of the infection has not yet been clearly defined; the patient owns a renowned company with many international clients.

So far, the PCR results from nasopharyngeal swabs of more than 90 contacts have all turned out negative. The patient himself continues in a critical condition, at the moment with no signs of further deterioration.

Communicated by:
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[HealthMap/ProMED-mail map:
Austria: <https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fhealthmap.org%2Fpromed%2Fp%2F109&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186350389575428&sdata=HbV%2ByO5sm%2FYXscVX1WUZZM9bo8RurBeLNaZwZHuRddI%3D&reserved=0>]

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[6] Selected media reports of interest
A. USA, Washington state cases without epidemiologic links and 1st death
Date: Sat 29 Feb 2020
Source: King5 News [edited]
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.king5.com%2Farticle%2Fnews%2Fhealth%2Fcoronavirus%2Fcoronavirus-death-washington-state%2F281-5a511b20-4a3f-4380-8d79-15d7a1456887&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389575428&sdata=5BShn2j1dS5X8k37%2Fbwz%2BTUibM3SoRd%2FFIKcO1Ed%2BcI%3D&reserved=0>

A King County resident has died from the 2019 novel coronavirus, also known as COVID-19, health officials said Saturday [29 Feb 2020]. This is the 1st known death from COVID-19 in the United States.

There are currently 6 presumptively positive cases of COVID-19 in Washington state, according to State Health Officer Dr. Lofy. These patients include 3 new cases reported Saturday [29 Feb 2020], including the patient who died. It also includes a King County woman and a Snohomish County teenager whose tests came back positive on Friday [28 Feb 2020]. It also includes a Snohomish County man who was the 1st person to be diagnosed in the US in January [2020]. That person has since recovered.

The man who died was a patient at EvergreenHealth in Kirkland. He was admitted with serious respiratory issues and tested positive for the virus. He was in his 50s and had underlying health conditions, according to Dr. Jeff Duchin with Public Health Seattle & King County. The man had no history of travel outside of the US or known contact with anyone who had COVID-19.

The other 2 new patients are connected to the Life Care nursing facility in Kirkland. One is a woman in her 40s who is a healthcare worker at Life Care. She is in satisfactory condition at Overlake Hospital and hasn't had any travel outside of the US, Duchin said. The other is a woman in her 70s and a resident at Life Care. She is in serious condition at EvergreenHealth.

There are over 50 individuals associated with Life Care who have respiratory symptoms or are hospitalized with pneumonia or other conditions and are being tested for COVID-19, according to Duchin. Public Health officials are investigating this as a possible outbreak at Life Care Center. "Current residents and associates are being monitored closely, and any with symptoms or who are potentially exposed are quarantined. As a precaution, all visits to the facility from families, volunteers, or vendors are not allowed," said officials with Life Care Center of Kirkland.

The Centers for Disease Control and Prevention are sending a team of epidemiologists to King County to support local health experts as they work to identify and test new cases.

"While the vast majority of cases of COVID-19 are believed to be mild, the virus can be a very serious infection that can lead to death.

Protecting the health of our community and supporting the care of
healthcare workers is our top priority," said Duchin.

Gov. Jay Inslee declared a state of emergency on Saturday [29 Feb 2020] in response to the new cases of COVID-19 and directed state agencies to use all resources necessary to prepare and respond to the outbreak. "It is a sad day in our state as we learn that a Washingtonian has died from COVID-19. Our hearts go out to their family and friends. We will continue to work toward a day where no one dies from this virus," said Gov. Inslee. "In partnership with the Washington State Department of Health, the Washington State Department of Emergency Management, and local and community health partners, we are strengthening our preparedness and response efforts. I am committed to keeping Washingtonians healthy, safe, and informed."

The Centers for Disease Control and Prevention said Saturday [29 Feb 2020] there are 22 confirmed cases of COVID-19 across the US. As COVID-19 cases continue to be identified in the state and globally, health officials said it's important to maintain proper health hygiene. This means washing hands with soap and water; avoid touching eyes, nose, and mouth; avoiding large crowded areas if possible; and, most importantly, staying home from work or school if you're sick.

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[As mentioned in yesterday's moderator comment, "The identification of 3 cases without identifiable epidemiologic links strongly suggests that we are moving into the stage of "seek and ye shall find." It looks as though states are seeking and now finding. The silent transmission into these communities speaks for the likelihood of more mild clinical presentations and subclinical infections breaking the directly identifiable epidemiologic links.

The possible outbreak of COVID-19 in a long-term care facility with many residents of increased age and with multiple pre-existing co-morbidities is worrisome.

Washington state, like California and Oregon, is located along the western part of the USA with a Pacific coastline. - Mod.MPP]

B. France ex Egypt
Date: Sat 29 Feb 2020
Source: Egypt Today [abridged, edited]
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.egypttoday.com%2FArticle%2F1%2F82137%2FWorkers-in-hotel-of-Coronavirus-infected-tourists-to-be-tested&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389575428&sdata=uLsQtDX8E1GU5thCiWGFPLGU7mgaJ%2B615OeiZjPQgVk%3D&reserved=0>

Prime Minister Mostafa Madbouly declared on Saturday [29 Feb 2020] that workers in the hotel where 2 French tourists diagnosed with coronavirus were staying will be tested.

The prime minister affirmed that Egyptian authorities had consulted with French counterparts over the diagnosis of coronavirus of 2 French tourists coming from Egypt. The 2 were part of a group of 6 who were on holiday in Egypt between [5-16 Feb 2020]. Hence, their place of residence was identified, and the workers will be tested.

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[In yesterday's ProMED update, there was a report of a man returning to Canada from Egypt, also positive for the SARS-CoV-2. At that point, I commented "The question here is whether the infection was originally acquired in Egypt or in Canada. There have been imported cases into both countries. We await further information. In either location it would signal beneath the "radarscope" transmission." The same applies to returning tourists to France. Did the transmission occur in Egypt or in France? - Mod.MPP]

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[7] WHO situation report 40, as of 29 Feb 2020
Date: Sat 29 Feb 2020
Source: WHO [edited]
<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.who.int%2Fdocs%2Fdefault-source%2Fcoronaviruse%2Fsituation-reports%2F20200229-sitrep-40-covid-19.pdf%3Fsfvrsn%3D7203e653_2&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186350389575428&sdata=sXTjuoweO81%2BaDicaNqbLAg%2Fuzd1bbES7HfIxmk3qhw%3D&reserved=0>

*The situation report includes information provided by national authorities as of 10 a.m. CET.

Highlights

- Two new Member States (Mexico and San Marino) reported cases of COVID-19 in the past 24 hours.

- WHO has published the Rational use of personal protective equipment for COVID-19 [<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fapps.who.int%2Firis%2Fbitstream%2Fhandle%2F10665%2F331215%2FWHO-2019-nCov-IPCPPE_use-2020.1-eng.pdf&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186350389575428&sdata=jq87YCeZx1XayW0CYyREFe4Cj4m1KjdXBsBBKTdpo6M%3D&reserved=0>]. This document summarizes WHO recommendations for the appropriate use of personal protective equipment (PPE) in healthcare and community settings, including the handling of cargo. More information on infection prevention and control (IPC) activities can be found in the Subject in Focus.

Subject in Focus: Update on infection prevention and control
Infection prevention and control (IPC) is a major factor in preventive and mitigation measures for COVID-19. To ensure evidence-based quality guidance and prompt response to global demand for personal protective equipment (PPE), WHO has convened the IPC expert global network of specialists from around the world since the beginning of the outbreak. Experts are members of the Global Infection Prevention and Control Network (GIPCN) or members of relevant institutions caring for COVID-19 patients. This network discusses technical aspects of IPC measures and shares epidemiological updates and experiences across affected countries. In consultation with this global IPC expert network, WHO has released 3 key IPC interim guidance materials (<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.who.int%2Femergencies%2Fdiseases%2Fnovel-coronavirus-2019%2Ftechnical-guidance%2Finfection-prevention-and-control&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389575428&sdata=i9%2BJu9x%2F8ftS6e1ytdrX%2B4Hh7rJlKQd7ZOcIvDrG2D0%3D&reserved=0>).

Updates on IPC activities include the following:
- Publishing the guidance document: Rational use of personal protective equipment for COVID-19 (<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fapps.who.int%2Firis%2Fbitstream%2Fhandle%2F10665%2F331215%2FWHO-2019-nCov-IPCPPE_use-2020.1-eng.pdf&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186350389575428&sdata=jq87YCeZx1XayW0CYyREFe4Cj4m1KjdXBsBBKTdpo6M%3D&reserved=0>). This document summarizes WHO recommendations for the appropriate use of PPE in healthcare and community settings, including the handling of cargo.

- Deployment of IPC specialists to Italy to support the COVID-19 response and to facilitate IPC training in the European region.

- Development of frequently asked questions (FAQ) in response to queries from the public and communities on blood safety, PPE for specimen collection, cleaning & disinfection, self-isolation, and self-monitoring.

- Launching the OpenWHO online course "Infection Prevention and Control (IPC) for COVID-19" (<https://gcc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fopenwho.org%2Fcourses%2FCOVID-19-IPC-EN&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C1%7C637186350389575428&sdata=cKGjRk%2B40VgUkCGInYFxheLkkH5cvXO%2Fb%2BsC2SvY0Ek%3D&reserved=0>) on [25 Feb 2020]. The course has been accessed by 15 391 users as of [28 Feb 2020] (see Figure 1).

[The figures provided in the report below are the figures from the National Health Commission of China from 28 Feb 2020. The 29 Feb 2020 figures are included in sections [1] and [2] above. They are usually posted between 7 and 9 p.m. (GMT-5), which is 3 a.m. (GMT+1) in Geneva. All figures from all countries are data reported to WHO. - Mod.MPP]

Excerpted to show confirmed cases outside mainland China:

Countries, territories or areas outside China with reported laboratory-confirmed COVID-19 cases and deaths. Data as of [29 Feb 2020]*

WHO region:
Country: Total confirmed cases (new)* / Total deaths (new) / Transmission classification** / Days since last reported case

Western Pacific Region:
China: (includes clinical and laboratory confirmed): 79 394 (435) / 2838 (47)
Japan: 230 (20) / 5 (1) / Local transmission / 0
Republic of Korea: 3150 (813) / 17 (4) / Local transmission / 0
Viet Nam: 16 (0) / 0 (0) / Local transmission / 16
Singapore: 98 (2) / 0 (0) / Local transmission / 0
Australia: 24 (1) / 0 (0) / Local transmission / 0
Malaysia: 24 (0) / 0 (0) / Local transmission / 2
Cambodia: 1 (0) / 0 (0) / Imported cases only / 33
Philippines: 3 (0) / 1 (0) / Imported cases only / 25
New Zealand: 1 (0) / 0 (0) / Imported cases only / 1

Southeast Asia Region:
Thailand: 42 (2) / 0 (0) / Local transmission / 0
Nepal: 1 (0) / 0 (0) / Imported cases only / 47
Sri Lanka: 1 (0) / 0 (0) / Imported cases only / 33
India: 3 (0) / 0 (0) / Imported cases only / 26

Region of the Americas:
United States of America: 62 (3) / 0 (0) / Local transmission / 0
Canada: 14 (3) / 0 (0) / Imported cases only / 0
Brazil: 1 (0) / 0 / Imported cases only / 3
Mexico: 2 (2) / 0 (0) / Imported cases only / 0

European Region:
France: 57 (19) / 2 (0) / Local transmission / 0
Finland: 2 (0) / 0 (0) / Imported cases only / 3
Germany: 57 (31) / 0 (0) / Local transmission / 0
Italy: 888 (238) / 21 (4) / Local transmission / 0
Russian Federation: 2 (0) / 0 (0) / Imported cases only / 29
Spain: 32 (7) / 0 (0) / Local transmission / 0
Sweden: 12 (5) / 0 (0) / Imported cases only / 0
United Kingdom: 20 (4) / 0 (0) / Local transmission / 0
Belgium: 1 (0) / 0 (0) / Imported cases only / 25
Israel: 5 (2) / 0 / Imported cases only / 0
Austria: 5 (1) / 0 (0) / Imported cases only / 0
Croatia: 5 (2) / 0 / Local transmission / 0
Switzerland: 10 (4) / 0 / Imported cases only / 0
Denmark: 2 (1) / 0 (0) / Imported cases only / 0
Estonia: 1 (0) / 0 (0) / Imported cases only / 2
Georgia: 2 (1) / 0 (0) / Imported cases only / 0
Greece: 3 (0) / 0 (0) / Imported cases only / 2
North Macedonia: 1 (0) / 0 (0) / Imported cases only / 3
Norway: 6 (2) / 0 (0) / Imported cases only / 0
Romania: 3 (2) / 0 (0) / Imported cases only / 0
Belarus: 1 (0) / 0 (0) / Imported cases only / 1
Lithuania: 1 (0) / 0 (0) / Imported cases only / 1
Netherlands: 2 (1) / 0 (0) / Imported cases only / 0
San Marino: 1 (1) / 0 (0) / Local transmission / 0

Eastern Mediterranean Region:
United Arab Emirates: 19 (0) / 0 (0) / Local transmission / 2
Iran (Islamic Republic of): 388 (143) / 34 (8) / Local transmission / 0
Egypt: 1 (0) / 0 (0) / Imported cases only / 15
Lebanon: 2 (0) / 0 (0) / Imported cases only / 3
Kuwait: 45 (2) / 0 (0) / Imported cases only / 0
Bahrain: 38 (5) / 0 (0) / Imported cases only / 0
Oman: 6 (0) / 0 (0) / Imported cases only / 2
Afghanistan: 1 (0) / 0 (0) / Imported cases only / 5
Iraq: 8 (1) / 0 (0) / Imported cases only / 0
Pakistan: 2 (0) / 0 (0) / Imported cases only / 3

African Region:
Algeria: 1 (0) / 0 (0) / Imported cases only / 4

Nigeria: 1 (0) / 0 (0) / Imported cases only / 1

Other: Cases on an international conveyance (Diamond Princess)***: 705 (0) / 6 (2) / Local transmission / 3

Grand total****: 6009 (1318) / 86 (19)

*Case classifications are based on WHO case definitions for COVID-19.
**Transmission classification is based on WHO analysis of available official data and may be subject to reclassification as additional data become available. Countries/territories/areas experiencing multiple types of transmission are classified in the highest category for which there is evidence; they may be removed from a given category if interruption of transmission can be demonstrated. It should be noted that even within categories, different countries/territories/areas may have differing degrees of transmission as indicated by the differing numbers of cases and other factors. Not all locations within a given country/territory/area are equally affected.
Terms:
- Community transmission is evidenced by the inability to relate confirmed cases through chains of transmission for a large number of cases, or by increasing positive tests through routine screening of sentinel samples.
- Local transmission indicates locations where the source of infection is within the reporting location.
- Imported cases only indicates locations where all cases have been acquired outside the location of reporting.
- Under investigation indicates locations where type of transmission has not been determined for any cases.
- Interrupted transmission indicates locations where interruption of transmission has been demonstrated (details to be determined).
***Cases identified on a cruise ship currently in Japanese territorial waters.
****266 female/386 male/5357 unknown. 28 healthcare workers (5 female /12 male / 11 unknown).

[There are excellent graphs and a map available at the source URL, as well as strategic objectives and preparedness and response information.
- Figure 1: Countries, territories or areas with reported confirmed cases of COVID-19, 29 Feb 2020.
- Figure 2: Epidemic curve of confirmed COVID-19 cases (n=5173) reported outside of China, by date of report and WHO region with complete days of reporting through [28 Feb 2020] - Mod.MPP]

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[The number of countries reporting confirmed cases of COVID-19 with transmission occurring outside China continues to grow and is now 53. This includes 9 countries from the Western Pacific region, 24 countries from the European region, 4 countries from the Southeast Asia region, 10 countries from the Eastern Mediterranean region, 4 countries from the Americas region, and 2 countries from the African region. There has also been local transmission noted on the cruise ship quarantined in Japan (the Diamond Princess).

The total number of cases reported from outside of China is now 6009 including 86 deaths.

At the same time, the daily number of reported cases and fatalities reported by China keeps decreasing from levels that were 2000-3000 cases daily to less than 500 cases per day.

It is clear that the number of reported confirmed cases differs from different reporting websites and is somewhat a function of time of day the website is updated. For example, I note the time I've accessed the Johns Hopkins website, but by the time the post is actually finished with the editing process, those numbers have at times significantly changed. Case counting is clearly a moving target, and, depending upon when the website updates, the numbers may be different. - Mod.MPP]

[See Also:
COVID-19 update (21): companion animals, dog susp, RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200229.7036661&data=[illegible]
COVID-19 update (20): global, more importations, need for serosurveys, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200228.7035438&data=[illegible]
COVID-19 update (19): China, global, Italy, Iran, Nigeria, imported cases, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200228.7032761&[illegible]
COVID-19 update (18): China, global, Iran, Italy imported cases, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200226.7026481&data=[illegible]
COVID-19 update (17): China, animal reservoir, wildlife trade & consumption ban https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200225.7024245&[illegible]
COVID-19 update (16): China, global, Iran, Eastern Mediterranean imported cases, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200224.7022200&[illegible]
COVID-19 update (15): China, global, Iran, Italy, returning cruise evacuees, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200223.7017958&[illegible]
COVID-19 update (14): China, global, Iran, Italy, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200223.7015552&data=[illegible]
COVID-19 update (13): China, global, Iran, Lebanon, Israel, WHO, RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200222.7013077&data=[illegible]
COVID-19 update (12): China, global, Iran, cruise ship epidemiology, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200220.7009533&data=[illegible]
COVID-19 update (11): animal reservoir, intermediate hosts, pangolin susp. https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200220.7009213&data=[illegible]
COVID-19 update (10): China, global, Iran, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200219.7005749&data=[illegible]
COVID-19 update (09): China, global, pulmonary pathological findings, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200218.7002608&data=[illegible]
COVID-19 update (08): companion animals, RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200218.7002276&data=[illegible]
COVID-19 update (07): China, global, comment, epidemiological analysis, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200218.6999424&[illegible]
COVID-19 update (06): animal reservoir, intermediate hosts https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200217.6997782&data=[illegible]
COVID-19 update (05): China, global, Taiwan fatality, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200216.6995828&data=[illegible]
COVID-19 update (04): China, global, Thailand, cruise ships, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200215.6993525&data=[illegible]
COVID-19 update (03): China, global, Egypt, influenza surveillance, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200214.6991020&data=[illegible]
COVID-19 update (02): China, global, reporting criteria, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200214.6987678&data=[illegible]
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Novel coronavirus (42): China, global, COVID-19, SARS-CoV-2, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200211.6979942&data=[illegible]
Novel coronavirus (41): China, global, clinical pics, asymptomatic trans., WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200210.6976117&[illegible]
Novel coronavirus (40): animal reservoir, pangolin poss intermediate host, RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200210.6972104&[illegible]
Novel coronavirus (39): China, global, false negative NAT tests, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200209.6972103&data=[illegible]
Novel coronavirus (38): China, global, local transm, CFR, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200209.696999&data=[illegible]
Novel coronavirus (37): China, global, cruise, clinical, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200208.6967526&data=[illegible]
Novel coronavirus (36): China, global, incubation, airport screen, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200207.6963294&data=[illegible]
Novel coronavirus (35): China, global, health workers, cruise, WHO, RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200206.6959291&data=[illegible]
Novel coronavirus (34): China, global, deaths, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200205.6955196&data=[illegible]
Novel coronavirus (33): China, global, epidemic modeling interactive tool available https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200204.6954575&[illegible]
Novel coronavirus (32): China, global, management, research https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200204.6950903&data=[illegible]
Novel coronavirus (31): China, Global, https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200202.6946685&data=[illegible]
Novel coronavirus (30): updates, China, Viet Nam, research https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200202.6945658&data=[illegible]
Novel coronavirus (29): updates, China, Philippines, USA, Canada, Spain https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200202.6944056&data=[illegible]
Novel coronavirus (28): China (HU) animal reservoir https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200201.6943858&data=[illegible]
Novel coronavirus (27): updates, Africa https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200201.6943724&data=[illegible]
Novel coronavirus (26): research, research, early spread in Wuhan, China https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200201.6943519&data=[illegible]
Novel coronavirus (25): updates, China, Italy, Russia, UK https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200131.6940058&data=[illegible]
Novel coronavirus (24): updates, China, PHEIC, India, economy, research https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200131.6937255&data=[illegible]
Novel coronavirus (23): updates, China, UAE, Finland, ECDC, research https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200129.6929532&data=[illegible]
Novel coronavirus (22): reservoir suggested, bats https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200129.6930718&data=[illegible]
Novel coronavirus (21): China, Canada, Sri Lanka ex China https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200127.6918021&data=[illegible]
Novel coronavirus (20): China, wildlife trade ban https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200127.6922060&data=[illegible]
Novel coronavirus (19): China (HU) transmission dynamics https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200126.6918012&data=[illegible]
Novel coronavirus (18): China (HU) animal reservoir https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200125.6915411&data=[illegible]
Novel coronavirus (17): China (HU), France, USA ex China, Viet Nam p2p trans. https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200125.6914553&data=[illegible]
Novel coronavirus (16): China (HU), Viet Nam, Singapore ex China, IHR committee WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200123.6910685&[illegible]
Novel coronavirus (15): China (HU) wild animal sources https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200123.6909913&data=[illegible]
Novel coronavirus (14): China (HU), Hong Kong, Macau ex China https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200122.6907971&data=[illegible]
Novel coronavirus (13): China (HU) USA ex China https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200121.6903878&data=[illegible]
Novel coronavirus (12): China (HU) new fatality, healthcare workers, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200121.6901757&data=[illegible]
Novel coronavirus (11): China (HU), South Korea ex China https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200120.6899007&data=[illegible]
Novel coronavirus (10): China (HU, GD, BJ) https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200119.6898567&data=[illegible]
Novel coronavirus (09): China, 1st diagnostic test https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200119.6897998&data=[illegible]
Novel coronavirus (08): China (HU) more cases, Nepal susp, modeling https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200118.6897282&data=[illegible]
Novel coronavirus (07): China (HU), Thailand ex China, Japan ex China, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200117.6895647&data=[illegible]
Novel coronavirus (06): China (HU) fatality, Japan ex China, antipyretic use https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200116.6893471&[illegible]
Novel coronavirus (05): China (HU), Japan ex China https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200115.6891515&data=[illegible]
Novel coronavirus (04): China (HU), Thailand ex China, .6889527
Novel coronavirus (03): China (HU) animal reservoir suggested, RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200114.6887480&data=[illegible]
Novel coronavirus (02): Thailand ex China (HU) WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200113.6886644&data=[illegible]
Novel coronavirus (01): China (HU) WHO, phylogenetic tree https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200112.6885385&data=[illegible]
Undiagnosed pneumonia - China (HU) (10): genome available, Hong Kong surveill. https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200111.6883998&data=[illegible]
Undiagnosed pneumonia - China (HU) (09): novel coronavirus, more info, fatality https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200110.6883253&data=[illegible]
Undiagnosed pneumonia - China (HU) (08): novel coronavirus, WHO https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200110.6881082&data=[illegible]
Undiagnosed pneumonia - China (HU) (07): official confirmation of novel coronavirus https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200108.6878869&[illegible]
Undiagnosed pneumonia - China (06): (HU) Hong Kong surveillance, USA CDC alert https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200108.6876648&[illegible]
Undiagnosed pneumonia - China (05): (HU) novel coronavirus identified https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200108.6877694&data=[illegible]
Undiagnosed pneumonia - China (04): (HU) Hong Kong surveillance https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200106.6874277&data=[illegible]
Undiagnosed pneumonia - China (03): (HU) updates, SARS, MERS ruled out, WHO, RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200105.6872267&[illegible]
Undiagnosed pneumonia - China (02): (HU) updates, other country responses, RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200103.6869668&[illegible]
Undiagnosed pneumonia - China (01): (HU) wildlife sales, market closed, RFI https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20200102.6866757&[illegible]
2019

Undiagnosed pneumonia - China (HU): RFI
https://gcc01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20191230.6864153&data=02%7C01%7CMeagan.Kay%40kingcounty.gov%7C20d36b89b4cb49e3590308d7bd9c14e3%7Cbae5059a76f049d7999672dfe95d69c7%7C0%7C0%7C637186350389615254&sdata=HxbS9CqQk0Ju2OaJgW%2BnK9qt9qTm9U35XsA04E14O2k%3D&reserved=0]
....sb/mpp/lxl

End of ProMED-ahead Digest, Vol 92, Issue 1
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From: Brostrom-Smith, Claire
To: Maier, Emily; Gonzales, Elysia; Ferro, Jessica; Clark, Shauna
Cc: Kawakami, Vance; Kay, Meagan
Subject: RE: ASAP Lifecare Numbers
Date: Saturday, February 29, 2020 11:49:26 AM
Attachments: Summary_Feb28_2020.docx

Hi Em,

See attached summary. Last Shauna spoke with the facility 10 residents hospitalized, one staff member. We are working on the pending testing information.

Claire

From: Maier, Emily <emaier@kingcounty.gov>
Sent: Saturday, February 29, 2020 11:41 AM
To: Gonzales, Elysia <Elysia.Gonzales@kingcounty.gov>; Ferro, Jessica <jferro@kingcounty.gov>; Brostrom-Smith, Claire <Claire.Brostrom-Smith@kingcounty.gov>; Clark, Shauna <shclark@kingcounty.gov>
Subject: ASAP Lifecare Numbers

Hello,

Comms needs to know the following info ASAP – they technically needed it 10 minutes ago. Does anyone know the answer to the two highlighted boxes?

LifeCare Numbers

Total Number of Residents	108
Number of Ill Residents	27
Number Hospitalized	TBD
Number Tested	1
Number Pending	TBD
Total Number of Staff	179
Number of Ill Staff	25
Number Tested	1
Number Pending	0

Em Maier, MPH (she/hers)
Epidemiologist
Analytic & Informatics Team
Communicable Disease Epidemiology & Immunization Section
Public Health – Seattle & King County
401 5th Ave Suite 1250 Seattle, WA 98104
206.263.3438 (direct) | 206.296.4774 (main)

206.296.4803 (fax)
emaier@kingcounty.gov

Summary: Suspected COVID-19 cluster at SNF LTCF

Location:
Life Care Center of Kirkland
10101 NE 120th St.
Kirkland, WA 98034

2 Long Term Care Units, 4 Short Term Rebab Units

Reported by the LTCF late 2/27/20 to Public Health

25/179 ill staff with cold-like symptoms, including fever, cough and myalgias.

1 staff confirmed and is currently hospitalized.

20 – Nurses or CAN

4 – Dietary aids

1 - other

~27/108 ill residents with cold like symptoms including, fever, cough, chest congestion, SOB, difficulty breathing

~5 residents diagnosed with pneumonia at LTCF, not hospitalized

Illness onsets range 2/15/20 to 2/29/20; with no resident onset earlier than 2/16

A total of 11 people (10 residents, 1 staff) were hospitalized with hospital admission dates ranging during 2/18/20 to 2/28/20 at least two HCFs:

~22 NEG rapid flu tests (both staff and residents) and 2 NEG Resp Panels

From:	Ulrey, Ingrid
To:	Stubbs, Connor
Cc:	Hayes, Patty; Putney, April
Subject:	RE: Azar says 40 public health labs can test for coronavirus
Date:	Thursday, February 27, 2020 2:44:12 PM
Attachments:	COVID_Response_TwoPager_022120.pdf PHSKC Federal Issues 2-pager 2020.pdf

Dear Connor,

Yes – we are hearing movement on ability to test locally – will let you know as soon as this comes through.

Great to meet you and thank you to Congressman Smith for his good work on health access/ public charge and concern about Coronavirus.

Here is a link to our Public Health Insider Blog:
https://publichealthinsider.com/2020/02/26/statement-on-bothell-high-school-closure/

Please subscribe to get these regularly (black box on right side) - it is a helpful channel for us to keep you up to date on COVID-19 and other key public health issues.

This entry is about today's closure of Bothell high school. This incident and the panic it has created could have been avoided if we had capacity to test locally.

Don't hesitate to be in touch if you have questions or need public health data / information about our region.

And do let me know if Congressman Smith would like to visit with our Preparedness Team when he is back in the district.

Thank you,

Ingrid Ulrey

Ingrid Ulrey, MPP (she/her)
Policy Director
Public Health – Seattle & King County
Phone: 206.477.7019
Ingrid.Ulrey@kingcounty.gov

From: Stubbs, Connor <Connor.Stubbs@mail.house.gov>
Sent: Thursday, February 27, 2020 8:01 AM
To: Ulrey, Ingrid <Ingrid.Ulrey@kingcounty.gov>
Subject: FW: Azar says 40 public health labs can test for coronavirus

Hi Ingrid – good seeing you yesterday; really enjoyed the conversation and look forward to staying in touch.

On a related note – are any of these public health labs that are now able to do testing in King County? Thanks!

Best,
Connor

From: POLITICO Pro Health Care <politicoemail@politicopro.com>
Sent: Thursday, February 27, 2020 11:00 AM
To: Stubbs, Connor <Connor.Stubbs@mail.house.gov>
Subject: Azar says 40 public health labs can test for coronavirus

Azar says 40 public health labs can test for coronavirus

By Adam Cancryn

02/27/2020 10:59 AM EST

HHS Secretary Alex Azar told lawmakers today that at least 40 public health laboratories can now test for the coronavirus, weeks after the initial version of a CDC-developed diagnostic proved faulty.

Those labs can now use the diagnostic after the FDA approved a process that involves just two of the test kit's original three steps.

"FDA authorized the use of those tests using just the first and second step to provide a definitive diagnostic," Azar told the House Ways and Means Committee. FDA has not yet posted notice of the authorization on its website.

Azar added that HHS expects 93 labs around the country to be able to conduct their own coronavirus tests by Monday, using either the CDC's diagnostic or a private-sector alternative that could be available as early as tomorrow.

The CDC has conducted more than 3,600 screenings so far, and there is currently no backlog. But the delayed rollout of tests to public health labs around the country has raised concerns that the coronavirus could be spreading undetected, slowing the federal and state response.

The agency is investigating a coronavirus case in California that involves a person with no known links to existing cases and no history of travel to China.

In the meantime, the federal government is also working on developing a separate diagnostic that could be distributed to hospitals, Azar said, calling it the "next step" in the response but declining to offer a specific timeline.

David Lim contributed to this report.

To view online:
https://subscriber.politicopro.com/health-care/whiteboard/2020/02/azar-says-40-public-health-labs-can-test-for-coronavirus-3977055

https://subscriber.politicopro.com/settings.

This email was sent to connor.stubbs@mail.house.gov by:
POLITICO, LLC
1000 Wilson Blvd.
Arlington, VA 22209
USA

NOVEL CORONAVIRUS RESPONSE

Public Health
Seattle & King County

For more information:
Ingrid Ulrey, Public Health: 206-477-7019

Local health departments play a key role in responding to novel coronavirus (COVID-19). Public Health—Seattle & King County has activated over 100 employees and volunteers, working on disease containment and pandemic preparedness.

500+ people monitored by King County for potential symptoms, with new people added each day

Approximately **$200,000 per week** spent on response efforts

DISEASE INVESTIGATION

- Assessing possible cases for testing
- Tracing contacts of people under investigation for possible coronavirus
- Monitoring people in quarantine
- Providing wrap-around services—from groceries to behavioral health—to support people in quarantine and isolation

COMMUNITY OUTREACH

Anti-stigma community event & press conference

- Addressing and preventing stigma with community partners, including through our online anti-stigma toolkit: kingcounty.gov/ncov/anti-stigma
- Providing guidance on prevention and pandemic planning to schools, colleges/universities, childcare providers, employers and community organizations
- Creating and maintaining COVID-19 website: kingcounty.gov/COVID

MULTIAGENCY COORDINATION

- Collaborating with experts from the CDC and colleagues at Washington Department of Health
- Providing health advisories and guidance to King County healthcare providers regarding screening, identification, testing and infection control measures related to COVID
- Monitoring healthcare system supply shortages and helping ensure healthcare readiness

Gov. Inslee, Executive Constantine and Director Hayes brief staff

RECENT NEWS COVERAGE

Washington Post, 2/20/20:

"We **still don't have a good understanding of the risk** posed by people who are infected but without symptoms," said Dr. Jeff Duchin, Health Officer.

Wall Street Journal, 2/19/20:

"**The amount of manpower, both resources and time, has been tremendous**, and so what that means is that our existing staff are working two jobs around the clock for several weeks," said Dr. Duchin

Associated Press, 2/14/20:

In Seattle, **public health workers buy groceries** to make sure the people stay comfortable while in home quarantine. The health department workers make sure people have Wi-Fi. They arrange calls with counselors for those with anxiety.

Route Fifty, 2/8/20:

Across King County, health officials have heard reports of Asian-American residents being yelled at in the streets for not wearing masks and patients of Asian descent having their medical care delayed because doctors assumed their symptoms pointed to coronavirus.

King County held a media event to bring together business and community to debunk stereotypes, discourage discrimination and discuss ways to respond appropriately to the health threat.

Public Health – Seattle & King County

"Protecting and Improving the health and well-being of King County"

Public Health – Seattle & King County (PHSKC) is the largest health jurisdiction in Washington State and the 13th largest in the U.S. We serve a rapidly growing population of over 2 million people. Our residents represent over 41% of Washington's population growth. One in five families speak a language other than English at home.

Providing services in a large, metro environment means that we often have complex needs and greater system challenges in delivering care. Federal under-investment and strained local and state budgets have resulted in many essential public health services being underfunded – including critical services such as communicable disease control, chronic disease / injury prevention, and emergency preparedness. Sustainable federal partnership is critical to protecting the health of our communities and workforce.

2020 Federal Priorities:

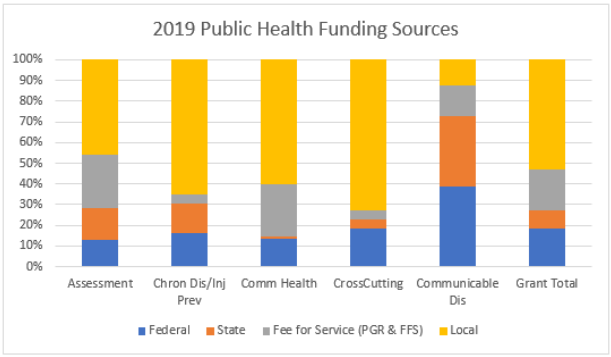
- Emergency funding for COVID-19 response
- Increase CDC funding 22% by 2022
- Protect and defend the ACA
- End the HIV Epidemic

Examples of how we put federal dollars to work:

- Opioid crisis response
- Chronic disease and injury prevention
- Immunization campaigns
- Maternal and child health
- Healthcare for homeless
- Communicable disease prevention and treatment (HIV, Hep A, Hep C, TB)
- Emergency preparedness

Funding Snapshot

Federal funding represents nearly 20% of the overall funding for our local health department and is the major source of funding for key programs.

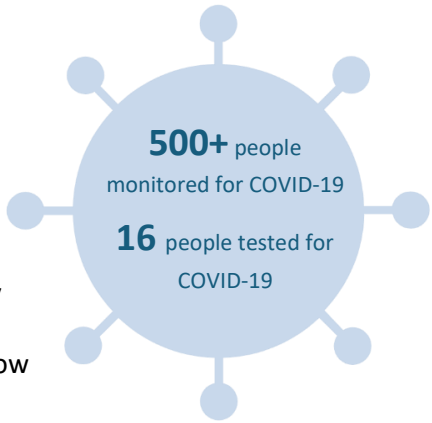


Critical federal funding streams include Medicaid, preparedness funding, the Public Health and Prevention Fund and HRSA Ryan White funding. Additional sources of funding include state and local dollars, fees and grants.

Federal Investment Success

Emergency Preparedness

CDC funding supports PHSKC in promoting and ensuring the health and safety of the whole community before, during and after emergencies and disasters. Our department is now fully activated in response to the novel coronavirus (COVID-19). This surge in activity — which includes monitoring, testing, arranging for and supporting people in for quarantine, coordinating with the health care system and communicating with community partners — is costing our department approximately $200,000 per week. Diverting staff away from other important projects to cover this work is not sustainable. It is critical that we have the resources to prevent and plan now rather than wait until the problem worsens.



> *Emergency supplemental funding and assurance that state and local health departments will be fully reimbursed for necessary activities are urgently needed to support our local response to COVID-19.*

Progress on HIV/AIDs

King County was one of the first counties in the United States to reach the ambitious "90-90-90" goal set by the WHO – whereby 90% of persons with HIV know their HIV-status, at least 90% of persons diagnosed with HIV are receiving medical care and 90% of those in care are virally suppressed. Now, a significant increase in cases among people who are living homeless and who inject or use illicit drugs is challenging us to hold the line on this success. Through our walk-in clinics and mobile street medicine models, we are continuously innovating to provide low-barrier, whole person care for hard-to-reach populations.

> *To successfully implement "Ending the HIV Epidemic in America" - heavily impacted communities such as Seattle-King County need full funding and flexibility for how we put these resources to work.*

Health Care Access

Because of the Affordable Care Act (ACA) more people than ever in our community have health insurance. In Washington state, we have reduced the rate of uninsured by half. Yet, nearly 500,000 people remain uninsured. To address this, our health department is supporting state-level innovations to address affordability by reducing out of pocket costs; and to improve access for people who are not eligible for federal subsidies or public insurance programs.

> *Changes to the public charge test and efforts to undermine the ACA are making it more difficult for communities such as ours to ensure access to care and protect overall population health.*

Opioid Crisis Response and Communicable Disease Prevention

CDC funds are bolstering our capacity to fight the opioid crisis by expanding access to medication for opioid use disorder and overdose reversal, and educating the community about the risk of fentanyl hidden in counterfeit pills. Also with funding from CDC, King County tripled the number of patients screened for Hepatitis C and doubled the number of patients diagnosed, resulting in a more than tenfold increase in the number of patients treated for HCV. Finally, the recent Measles and Hepatitis A outbreaks in our state remind us of how critical CDC's Immunization Program is to support our distribution of life-saving vaccines.

> *To sustain this success, we support the "22% by 2022" cross-sector appeal to increase CDC funding by 22 percent by fiscal year 2022.*

Eliminating Health Inequities

Low-income people of color in our community are more likely to die from gun violence, suicide and drug overdose than their white counterparts, and they experience the highest rates of chronic disease. We use data analysis to identify these disparities and target resources to communities who need them most. For example, with support from a CDC Racial Ethnic Approaches to Community Health (REACH) grant we are working with partners to increase access to healthy foods, create active living environments and establish effective community-clinical linkages for African-American, African-born and Asian-American communities.

> *Support for REACH, for gun violence research and for key policies such as banning flavored e-cigarettes are all critical to achieving health equity.*

Contact: Ingrid Ulrey, Policy Director, (206) 477-7019, Ingrid.Ulrey@kingcounty.gov
Public Health – Seattle & King County | 401 5th Avenue, Seattle, WA 98104

From:	Elsenboss, Carina
To:	Worsham, Dennis; Hayes, Patty; Shawn Frederick (sfrederick@snohd.org)
Subject:	RE: Emergency Declaration draft
Date:	Saturday, February 29, 2020 7:14:04 PM
Attachments:	02.29.2020 - Emerg Proclamation for Coronovirus.docx 2 28 2020 Transmittal Letter coronovirus- Emergency Proclamation.docx

Hello –

Here are the drafts. Still working out timing. Best of luck.

Thanks,
Carina

From: Worsham, Dennis <Dennis.Worsham@kingcounty.gov>
Sent: Saturday, February 29, 2020 5:26 PM
To: Hayes, Patty <Patty.Hayes@kingcounty.gov>; Shawn Frederick (sfrederick@snohd.org) <sfrederick@snohd.org>
Cc: Elsenboss, Carina <Carina.Elsenboss@kingcounty.gov>
Subject: Re: Emergency Declaration draft

Hello Shawn. I hope you are hanging in there. I am cc'ing Carina who can send the draft language.

Dennis

Get Outlook for Android

From: Hayes, Patty <Patty.Hayes@kingcounty.gov>
Sent: Saturday, February 29, 2020 5:13:42 PM
To: Shawn Frederick (sfrederick@snohd.org) <sfrederick@snohd.org>; Worsham, Dennis <Dennis.Worsham@kingcounty.gov>
Subject: Emergency Declaration draft

Hi Dennis. Shawn call inquiring about language for a declaration. I told him ours is drafted and reviewed by our PAO. Can you send the draft to Shawn?

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King County

PROCLAMATION OF EMERGENCY

WHEREAS, Public Health—Seattle & King County reported to me that Public Health activated the Public Health Departmental Emergency Operations Center on January 21, 2020 for a significant health emergency caused by novel coronavirus, or COVID-19, which is new to humans and can cause serious infections, including pneumonia; and

WHEREAS, in the world as of 02/29/20 there are 85,681 cases and 2,933 fatalities as a result of COVID-19; and

WHEREAS, in King County as of 02/29/20 there have been 19 people under investigation (PUI), 4 cases and 1 fatality as a result of COVID-19 and

WHEREAS, Public Health – Seattle & King County has been responding to the COVID-19 outbreak since January 21, 2020 including: assessing possible cases of novel coronavirus and providing services to help people awaiting testing to remain in isolation; monitoring people in quarantine who are at elevated risk of developing COVID-19 due to travel or close contact with confirmed cases of coronavirus; tracing contacts of people who are under investigation for possible coronavirus infection; and providing wrap-around services.

WHEREAS, Public Health – Seattle & King County has been collaborating closely with experts from the CDC and colleagues at the Washington Department of Health to share the latest information and guidance for healthcare providers and the public regarding the risk to travelers, and contacts of known cases, the identification and management of possible cases, and prevention recommendations.

WHEREAS, Seattle-Tacoma International Airport is one of the eleven airports in the United States to receive and process travelers from the affected region where the COVID-19 outbreak originated.

WHEREAS, this emergency may become a pandemic.

WHEREAS, as described in SECTION 2 of this Proclamation, the situation is sufficiently serious that it is necessary that I proclaim an emergency within King County and exercise the Executive's emergency powers; and

WHEREAS, I have reviewed the situation, consulted with Executive branch agencies and personnel and verified the emergency cited below, and the necessity for me to take immediate, extraordinary action as outlined in this Proclamation.

NOW THEREFORE, I, DOW CONSTANTINE, AS KING COUNTY EXECUTIVE, DO PROCLAIM AND ORDER AS FOLLOWS:

SECTION 1: EMERGENCY POWERS

A. As described in SECTION 2, an emergency exists requiring and authorizing me to exercise the emergency powers vested in me as King County Executive by RCW chapter 38.52, and King County Code chapters 2.56 and 12.52, as described in this Proclamation; and

B. Effective upon my signing this Proclamation, I will exercise that authority through the use and direction of County personnel, services and equipment and additional acts necessary to the management of this emergency.

SECTION 2: PROCLAMATION OF EMERGENCY

A. Based on my review of the present circumstances, the report of Public Health—Seattle & King County, and my consultations with Executive branch agencies and personnel, I find and proclaim that an emergency exists, as defined in K.C.C. 12.52.010.A, due to novel coronavirus, or COVID19, which is new to humans and can cause serious infections, including pneumonia, and that these conditions demand that I exercise the authority assumed in SECTION 1 and take the extraordinary measures stated in SECTION 3, for the immediate preservation of public health and to relieve loss, hardship and suffering.

SECTION 3: ORDER

A. Pursuant to K.C.C. 12.52.030.C.2, I hereby order that the public advertising and competitive procurement requirements of state law and K.C.C. chapter 2.93, and all applicable Executive policies and procedures, and the requirements of K.C.C. chapter 12.19, are waived relating to County contracts for the following purchases or leases:

1. Tangible personal property;
2. Public works as defined by RCW 39.04.010; and
3. Services, including professional or technical services.

B. Pursuant to K.C.C. 12.52.030.C.1, I hereby order that King County Staff may authorize overtime for personnel in positions requiring overtime to adequately respond to the emergency.

C. Pursuant to K.C.C. 12.52.030.C.10, I hereby order that King County staff have the authority to make temporary (up to one year or the duration of the emergency) appointments of personnel to positions that directly respond to the emergency, when the urgency of filling positions prohibits examining applicants through the competitive process, and is imminently necessary for the protection of life and property.

I further reserve the right to issue such further orders as authorized by K.C.C. chapter 12.52 as may be necessary to respond to the emergency proclaimed in SECTION 2.

SECTION 4: NOTICE

A. A copy of this Proclamation and any order(s) issued hereunder shall be delivered to the Clerk of the Council and each King County Councilmember by email before the execution of any contract or lease authorized under SECTION 3. A copy of this Proclamation and any order(s) issued hereunder shall also be filed with the Clerk of the Council by no later than 10:00 a.m. on the second business day after issuance. To the extent practicable, a copy of this Proclamation and all emergency

orders issued hereunder shall be delivered to all news media within King County and made available to the general public.

SECTION 5: EXPIRATION AND TERMINATON

A. This Proclamation shall continue in force and effect until terminated by order of the Executive or action by the County Council by ordinance. However, the orders in SECTION 3.A shall expire twenty-one (21) calendar days after issuance, unless terminated sooner by order of the Executive or action by the County Council by motion, or extended by the County Council by motion.

DATED this 29 day of February, 2020.

_____

DOW CONSTANTINE, Executive
King County, Washington

February 29, 2020

The Honorable Claudia Balducci
Chair, King County Council
Room 1200
C O U R T H O U S E

Dear Councilmember Balducci:

On 02/29/2020, I issued a Proclamation of Emergency in response to the significant health emergency caused by novel coronavirus, or COVID-19. This declaration is in accordance to K.C.C. 12.52.030.

I am hereby forwarding the attached document to be filed with the clerk.

Thank you for your attention. If you have any questions, please contact Jeff Duchin, Health Officer, Public Health--Seattle & King County at 206-263-8171.

Sincerely,

Dow Constantine
King County Executive

Enclosure

cc: King County Councilmembers
ATTN: Carolyn Busch, Chief of Staff
Melani Pedroza, Acting Clerk of the Council
Dwight Dively, Director, Office of Performance, Strategy and Budget
Caroline Whalen, County Administrative Officer, Department of Executive Services (DES)
Brendan McCluskey, Director, Office of Emergency Management, DES

From: Baker, Karen
To: Duchin, Jeff; Cowgill, Karen
Cc: Kay, Meagan; Elsenboss, Carina
Subject: RE: Ethics Call
Date: Thursday, February 27, 2020 1:09:28 PM
Attachments: WHO guidelines on ethical issues in public health surveillance.pdf

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Just attended a webinar on PH ethics re surveillance work. Presenter emphasized the applicability of WHO PH health ethics (emphasis on common good, equity, respect for persons, good governance) rather than bioethics approach (priority on individual). Guideline 12 is particularly interesting to me re our discussion yesterday:

Guideline 12. Individuals have an obligation to contribute to surveillance when reliable, valid, complete data sets are required and relevant protection is in place. Under these circumstances, informed consent is not ethically required.

There is a long history of objection to public health surveillance without informed consent. Nevertheless, informed consent is not the default in public health surveillance. Many countries have enacted laws that require such systems to collect personal data without consent, subject to legislatively prescribed safeguards.

All individuals in a population are likely to benefit from surveillance programmes. Individuals, therefore, have a reciprocal obligation to contribute to surveillance and thereby promote the common good. Even when the potential benefit to any one individual is small, as the epidemiologist Geoffrey Rose famously pointed out, the benefit to the community as a whole may be large. Population benefits provide the moral obligation for individuals to contribute. If it is possible to opt out (and too many people do so), public health might be unacceptably compromised. Seeking informed consent is often not feasible in practice, e.g. from large populations. It may be prohibitively costly and unwarranted when the risks are low (as in some epidemiological research in which CIOMS has allowed waiving of consent). In some cases, however, consent is the norm, such as in routine descriptive health surveys. It is the obligation of the public health authorities accountable for surveillance to assess the importance and feasibility of seeking informed consent. It is important to clarify that, when consent is required, it must be genuinely voluntary.

Whether or not consent is sought, information about the nature and purpose of surveillance and about any risk for harm should be publicly accessible (see Guideline 13). Relevant protection and adequate governance mechanisms (Guideline 2 and the discussion on good governance in section III), appropriate ethics training (guidelines 2 and 6) and data security (Guideline 10) will enhancetrust in surveillance systems and ensure protection.

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Wednesday, February 26, 2020 7:12 PM
To: Cowgill, Karen <n-kcowgill@kingcounty.gov>
Cc: Kay, Meagan <Meagan.Kay@kingcounty.gov>; Baker, Karen <Karen.Baker@kingcounty.gov>
Subject: Re: Ethics Call

yes, excellent, thank you!

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Cowgill, Karen <n-kcowgill@kingcounty.gov>
Sent: Wednesday, February 26, 2020 7:06 PM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Kay, Meagan <Meagan.Kay@kingcounty.gov>; Baker, Karen <Karen.Baker@kingcounty.gov>
Subject: Re: Ethics Call

Yes, agreed that was interesting!
I've been invited to the monthly SFS meeting tomorrow — seems that might be a venue to discuss some of these things? There is time on the agenda to discuss COVID-19.
Karen C

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Wednesday, February 26, 2020 7:03:07 PM
To: Cowgill, Karen <n-kcowgill@kingcounty.gov>
Cc: Kay, Meagan <Meagan.Kay@kingcounty.gov>; Baker, Karen <Karen.Baker@kingcounty.gov>
Subject: Ethics Call

That was interesting. Concerns raised by SFS participants important. Let's follow-up with Izzy re: timeline for IRB review of consent modification and then decide if we want to continue planning de-identified and start pending change to identified, just wait for identified. If we have other sites coming on board, that will also play onto or decision.

And tha ks to Karen for raising the issue about the current consent form and whether it could lead participants to expect to be noitified of a CoV result - need to clarify that.

Anything else?

Thanks for being on the call.

Jeff

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

World Health Organization

WHO guidelines on ethical issues in public health surveillance

WHO Guidelines on Ethical Issues in Public Health Surveillance

World Health Organization

WHO guidelines on ethical issues in public health surveillance
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Table of Contents

Foreword

Public health surveillance is the bedrock of outbreak and epidemic response, but it reaches far beyond infectious diseases. It is sometimes called the radar of public health: it allows health officials to map disease, spot patterns, identify causes, and target interventions. Surveillance, for example, is central to understanding the increasing global burden of noncommunicable conditions. By helping to determine patterns and causes of morbidity and mortality, it can help guarantee access to safe food, clean water, pure air, and healthy environments.

Surveillance, when conducted ethically, is the foundation for programs to promote human well-being at the population level. It can contribute to reducing inequalities: pockets of suffering that are unfair, unjust and preventable cannot be addressed if they are not first made visible. But surveillance is not without risks for participants and sometimes poses ethical dilemmas. Issues about privacy, autonomy, equity, and the common good need to be considered and balanced, and knowing how to do so can be challenging in practice.

I am pleased to see WHO leading in this important area by placing ethics at the heart of public health surveillance. The *WHO Guidelines on Ethical Issues in Public Health Surveillance* is the first international framework of its kind, it fills an important gap. The goal of the guideline development project was to to help policymakers and practitioners navigate the ethical issues presented by public health surveillance. This document outlines 17 ethical guidelines that can assist everyone involved in public health surveillance, including officials in government agencies, health workers, NGOs and the private sector. I gratefully acknowledge the many experts and WHO colleagues who have made important contributions to this publication.

WHO has rightly asserted that public health surveillance, conducted in a manner that anticipates ethical challenges and proactively seeks to reduce unnecessary risks, provides the architecture for social well-being. It is now up to the global community and countries to take up this challenge and implement the guidelines in their surveillance systems.

Dr Marie-Paule Kieny
Assistant Director-General
Health Systems and
Innovation

Acknowledgements

This document was prepared by the WHO Global Health Ethics team, led by Andreas Reis and coordinated by Abha Saxena of the Department of Information, Evidence and Research in the cluster of Health Systems and Innovation.

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Amy Fairchild was lead writer and chief editor. Ali Akbar Haghdoost contributed technical text and was responsible for ensuring the accuracy of the document with regard to the operation of surveillance systems. Angus Dawson and Lisa Lee contributed substantially to formulating the guiding principles and discussions. Calvin Ho Wai Loon provided core text on legal systems and issues. Jennifer Gibson contributed text on accountability and governance. Ronald Bayer, who was Chair of the Network of Collaborating Centres for most of the duration of this project, played a pivotal editorial role, with Ross Upshur and Carla Saenz. Ronald Bayer, Michael Selgelid, and Angus Dawson substantively addressed comments from the Guideline Development Group and external reviewers. Michael Selgelid, Andreas Reis, Amy Fairchild and Ronald Bayer prepared grant proposals to fund the work.

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The WHO Strategic Health Operations Centre (SHOC) May 3, 2009.
Source: WHO /Christopher Black

I. Introduction

Disease surveillance has been a basic public health activity since the late nineteenth century (see Table 1). It is the foundation for initiatives to promote human well-being at the population level. Public health surveillance is the bedrock of outbreak and epidemic response, but it reaches far beyond infectious diseases. It can contribute to reducing inequalities: pockets of suffering that are unfair, unjust, and preventable cannot be addressed if they are not first made visible *(1)*. It is central to understanding the increasing global burden of noncommunicable conditions. By helping to determine patterns and causes of morbidity and mortality, public health surveillance can help guarantee access to safe food, clean water, pure air, and healthy environments. Continuous environmental surveillance may not only identify concerns but also trigger alerts. Occupational disease surveillance can identify workplace exposures and lead to regulation. Surveillance can help create accountable institutions by providing information about health and its determinants. It can provide an evidentiary basis for establishing and evaluating public health policy. Surveillance, for example, will be central to the achievement of the United Nation's Sustainable Development Goals. The availability of the results of surveillance enables and promotes policy choice. Thus, access to surveillance information can serve as a tool for advocacy when the results are

Table 1. Dimensions of public health surveillance

Scope						
Communicable diseases	Noncommunicable diseases	Environmental factors	Risk factors and risk markers	Health system	Demographic variables	Health-related events (e.g. food and drug safety, vaccine reactions)
↓						
Objectives						
Early detecting and warning of epidemics	Trend and spatial analyses	Risk detection	Generating hypotheses	Monitoring of health system performance	Evaluation of control measures	Policy analysis
↓						
Data collection tools						
Registries	Case reports	Repeated surveys	Bio-banks	Secondary data sources	Population-based (universal or sentinel sites)	Social media
↓						
Types of analysis						
Estimation of incidence or prevalence	Measurement of associations	Assessment of trends	Assessment of spatial patterns	Data mining		
↓						
Uses						
Policy change	Structural intervention	Case or epidemic detection	Testing of hypotheses	Implementation research	Quality assurance	

Source: A.A. Haghdoost

shared with populations and policy-makers in a timely, appropriate manner.

Yet surveillance has been the subject of sometimes bitter controversy. Public health surveillance may limit not only privacy but also other civil liberties. For example, surveillance may trigger mandatory quarantine, isolation, or seizure of property during an epidemic (*2*). When surveillance involves name-based reporting (that is, reporting by name), it can, to the extent that populations are made aware, trigger profound concern about intrusions on privacy, discrimination, and stigmatization. Name-based reporting can also seriously harm people and property, as is seen when mob reactions supersede care, compassion and the effective rule of law. Concern is compounded in the absence of trust that the public health system will keep names secure or will release aggregated data and related information (referred to simply as "data" from this point forward, as records contain information that varies in type and scope) in a sensitive manner *(2)*. In some countries, the HIV/AIDS pandemic sparked controversy about tracking by name those carrying the virus, but, even when confidentiality was assured, when details of risky behaviour and affected populations became public, groups like gay sex workers and injecting drug users experienced social harm such as discrimination and stigmatization. Because of these concerns, the HIV/AIDS epidemic spurred ethical and regulatory guidelines at both national and international levels that could be used in planning, collecting and then using personal and aggregated data.

Just as often, however, *failure* to conduct public health surveillance has generated political and ethical controversy because of concern that "what doesn't get counted doesn't count". Environmental and occupational health advocates, for example, have long made this argument. Even for events deemed critically important, yawning gaps in surveillance remain. The 2014–2016 Ebola virus disease crisis dramatically underscored the potentially devastating consequences of a lack of capacity to monitor the incidence and spread of disease. An effective public health or clinical response can be seriously hampered by the absence of such data. But if Ebola virus disease is a high-profile example of the costs of inadequate systems and the importance of support from the global community for vital surveillance, many other occupational and environmental exposures – like asthma, silicosis and conditions related to exposure to arsenic or lead – go uncounted in both high- and low-income countries. Some commentators have argued that, too often, only when a public health crisis becomes a "threat to international peace and security" does surveillance become a priority for wealthy countries *(3)*. But even when surveillance is a priority, fragmented, unlinked or consolidated data sets remain a problem for their effective use for public health purposes.

While surveillance is often conducted without public knowledge or concern when the risk for stigma, discrimination or perpetuation of inequity is high, surveillance inevitably involves conflicts of values and judgements about how to advance public health goals without harming individuals or groups in society. Thus, the priorities and the distribution of resources for surveillance merit public debate, not only within societies but among global communities. Despite landmark international guidelines on the ethics of research, including epidemiological studies, and specific ethical guidelines for surveillance of particular diseases and/or in particular countries, there has been no international ethics framework to guide public health surveillance systems in general that spans infectious diseases, noncommunicable diseases (NCDs), disease outbreaks, environmental and occupational exposures, and even national borders. The Council for International

Organizations of Medical Sciences (CIOMS), the World Medical Association and others have identified this gap *(4)*. It is crucial to have ethical guidance as a baseline for judging public health surveillance for all diseases and exposure across national borders.

The fragmented, disease-specific nature of international guidance is not surprising, given the uneven, incomplete state of public health surveillance in both high- and low-resource settings and different national and subnational mandates for surveillance in different legal systems. It is imperative to address the ethics of public health surveillance in a way that cuts across conventional boundaries, for a number of reasons.

Public health operates in an era of global health threats, such as AIDS, severe acute respiratory syndrome (SARS), influenza, Ebola virus disease, Zika virus infection, obesity and coronary heart disease. Given the zoonotic origin of many of the conditions, surveillance will increasingly involve monitoring the animal–human interface. For example, surveillance of food and animal feed for pathogens must be linked to surveillance for the same pathogens in humans.

Surveillance is conducted in a context in which there have been significant advances in the capacity to collect and share data from previously unimagined sources, such as social media or geospatial mobile phone data. There have been parallel technological leaps in possibilities for identifying disease; genetic analysis, as just one example, allows rapid identification of pathogens or pathogenic strains. At the same time, inequalities within societies and within the global community have become more marked. There are growing gulfs in the capacity of different nations and locales to take advantage of technological change. Civil conflicts in different countries inevitably trigger health crises

Dog and pig vendor at market day, Atsabe, Ermera.
Source: WHO / SEARO /Joao Soares Gusmao

that draw the attention of both United Nations agencies and humanitarian organizations. Crisis situations, in turn, deepen inequalities and create additional barriers to surveillance and intervention in conflict zones *(3)*.

This remarkable epidemiological, social, economic, political and technological global landscape makes it imperative to fill the gap in international guidelines and to address the ethics of public health surveillance explicitly. That is the aim of these international guidelines on the ethics of public health surveillance. They were prepared by an international group of experts in surveillance, epidemiological research, bioethics, public health ethics and human rights. The authors of these guidelines represent leading research institutions and also nongovernmental organizations (NGOs) either involved in surveillance or representing groups and populations with a vital interest in both the benefits and burdens of surveillance. The authors also represent countries in both the south and north, with different political systems, social values and priorities.

The guidelines were prepared in collaboration with the global network of WHO Collaborating

Centres for Bioethics, which initiated the project. They also drew on the technical support of the US Centers for Disease Control and Prevention to ensure that the guidelines took account of the actual procedures for and cost of data collection, analysis and dissemination and can thus reasonably be used. The guidelines are based on a systematic literature review of relevant research and grey literature in accordance with the WHO Handbook for Guideline Development *(5)*.

The goal of the guideline development project was to identify key ethical considerations to guide resolution of controversies that may arise in surveillance, which itself is an ethical obligation of governments. Specific ethical issues are addressed in contexts that differ in terms of culture, values, resources, political traditions and institutional structures, with sometimes very different expectations for the importance of individual rights, community solidarity and/or the good of society. The guidelines also address challenges that arise in contexts characterized by persistent injustice and/or repeated violation of human rights. These guidelines cannot therefore provide concrete answers to all the difficult questions raised by public health surveillance. Rather, on the basis of a set of core considerations for the ethics of public health, the guidelines establish the duty to conduct surveillance, share data and engage communities transparently, while recognizing the limits of that mandate. The 17 guidelines should not be read in isolation from each other or from the discussion of each of them. They jointly lay out the issues that those involved in surveillance (including officials in government agencies, health workers involved in surveillance, NGOs and the private sector) should consider and weigh carefully when making decisions about the collection, analysis, sharing, communication and use of surveillance data.

While the guidelines do not specify a mechanism for oversight, the conclusion is that, in view of the overarching imperative to conduct surveillance, analyse the data and act on the results, responsibility and accountability must ultimately be based on a sustainable, practical mechanism for ensuring that the ethical challenges posed by public health surveillance are anticipated and addressed systematically and transparently. Countries should ensure implementation of these guidelines and monitor it regularly.

II. Background

Defining public health surveillance

Some countries define surveillance narrowly, others quite broadly. These guidelines cover surveillance as broadly understood. In the simplest formulations, surveillance is defined as "continued watchfulness" *(6)* or "the monitoring of events in humans, linked to action" *(7)*. WHO generally defines surveillance as "the continuous, systematic collection, analysis and interpretation of health-related data needed for the planning, implementation, and evaluation of public health practice" *(8)*. Health data are those pertaining to communicable and NCDs, injuries and conditions and their related risks and determinants. For infectious disease outbreaks (and events that suggest a "potential for international disease spread"), the International Health Regulations (2005) (IHR) define surveillance as "the systematic on-going collection, collation and analysis of data for public health purposes and the timely dissemination of public health information for assessment and public health response as necessary" *(9)*.

Understanding of public health surveillance differs considerably from country to country. Although surveillance is usually described as systematic or continuous, not all countries, institutions or scholars single out the routine nature of public health surveillance but rather emphasize the purpose and function of data collection (see Table 1). Likewise, although disease and injury always figure centrally, some definitions include determinants of important public health events *(10)* and environmental conditions that affect health *(11)*. Vital registration of events like births and deaths, although often not specifically described as part of a "public health" surveillance system, is often considered to be surveillance.

Health worker collecting records and filling out surveys with the inhabitants of Salto, Uruguay.
Source: WHO/TDR /Sebastian Oliel

Although international agencies often sponsor, subsidize and oversee national surveys in low- and middle-income countries to track trends in risk factors or health outcomes, national public health authorities are usually responsible for public health surveillance systems and activities. The IHR, however, recognizes surveillance data from beyond the formal channels of reporting, including unofficial or informal sources, provided that they meet standards of reliability and validity.

For some organizations and experts, only those activities in which the purpose of data gathering has been defined in advance and, indeed, in which the questions driving data collection are set in advance meet the definition of public health surveillance *(12)*. The Australian Department of Health uses a broader epidemiological definition of surveillance: the continuing scrutiny of all aspects of the occurrence and spread of disease that are pertinent to effective control *(13)*. Some designations explicitly exclude case-finding (and subsequent testing and treatment), public health investigations and epidemiological research *(12)*, while others consider that "use of epidemiological

Bedside computer in the diabetic ward of the King's Hospital, London, 1970s.
Source: WHO /Peter Larsen

information" falls within the scope of surveillance *(14)*. A surveillance system may thus cover not only infectious diseases and involve not only continuous data collection but may also include focused epidemiological studies; inspection of hazardous conditions or broad oversight of the potential danger posed by food, water or the environment; and screening at workplaces or in health establishments. Table 1 gives an overview of the activities that fall within public health surveillance.

While there may be broader and narrower definitions, the understanding of surveillance is that data are collected with the intent of enabling public health action, whether direct intervention, priority-setting, resource allocation or advocacy. "Knowing about the health of a community," noted one group of surveillance specialists, "is the first step to making improvements that support healthy behaviours, identify and address unusual health events, and prevent and treat disease and injury." *(12)* In addition to linking surveillance to action to achieve some goal, almost all countries, institutions and experts underscore the importance of communicating surveillance results to those "who need to know", including the public, policy-makers, national and international scientific communities, programme planners, public health authorities, medical institutions and funding agencies, to enable intervention, sustainable development or advocacy.

The landscape of public health practice is also changing rapidly with regard to the kind of data to which public health agencies have routine access. In some settings, data are recorded by hand and stored on paper; in others, they are collected, stored and shared via sophisticated electronic systems. The era of "big data," as discussed in section V, may hold enormous potential for the future of public health surveillance, broadly understood, and has already raised vexing ethical questions. In some jurisdictions, surveillance systems could soon be linked directly to electronic health records. Interoperability between public health surveillance data sources and clinical practice is within reach, in both the public and the private health care sectors *(15)*. Public health data can be used to inform automatic decision-support systems or computational tools to trigger alerts and warnings. Research has shown, further, that geospatial mobile phone data could accurately describe and predict the movement of individuals and thereby the spread of diseases like malaria and H1N1 influenza *(16-18)*.

These guidelines define public health surveillance systems broadly, building on the general WHO definition of continuous, systematic collection, analysis, interpretation, and sharing of health–related data for advocacy and for planning, implementing, and evaluating public health practices. Even if systems are operative, however, new, focused studies are required to respond to epidemiological threats. Further, public health surveillance systems not only rely on but may also inform and improve clinical practice.

Surveillance: ethics, law and history

Nation states have established surveillance systems that differ in scope and purpose. International law and regulation have been important means of ensuring at least a basic level of public health surveillance in all countries. In 1969, the WHO Member States adopted the IHR, a revision and consolidation of the International Sanitary Regulations, as the framework for strengthening health security in an increasingly interconnected world. They came into force in 1971 *(19)*. The IHR impose a legal obligation on all Member States to have certain core public health capacities, including surveillance and data collection, with the goal

of preventing, controlling or responding to the international spread of disease.

Experience with the SARS crisis of 2003 led the World Health Assembly to adopt a significant revision of the IHR on 23 May 2005 *(9)*. While the IHR had originally focused on a short, fixed list of communicable diseases, the revised regulations – IHR (2005) – allow flexibility to target any disease that may constitute a public health emergency of international concern. They also establish an obligation to create core capacity for surveillance and outbreak response to disease and "public health events". As of November 2014, however, 48 countries had failed to communicate their capacity or plans, and another 81 had asked for extensions to coming into compliance *(20)*. The recent outbreak of Ebola virus disease revealed that many countries had not satisfied their obligations under the IHR; only 64 countries – one third of those bound by the IHR – "had achieved these core capacities". Nevertheless, while all countries are required to comply with the IHR, limited resources and political instability can pose obstacles to surveillance, and it may not be possible to overcome these obstacles without international assistance.

The IHR (2005) are limited in the sense that they provide mainly a framework for governance in addressing "public health emergencies of international concern". The framework is neither for constructing comprehensive surveillance systems nor for grappling with the ethical issues posed by surveillance systems and practices. International regulation, like national law and regulation, is an important tool that establishes a duty to conduct surveillance while also setting limits on that practice. What is legal, however, is not always ethical. Ethics is an essential tool for critically evaluating law, regulation and practice and for addressing the value conflicts that may be posed by surveillance.

Local and national surveillance systems emerged in the nineteenth century, and almost all comprised physicians' case reports. The data were initially used almost exclusively to document either social progress or misery *(21)*. At the heart of the most bitter battles over individual rights and population health, however, were surveillance measures that made intervention at the level of individuals possible, with the discovery of germs and the realization that many diseases were spread from person to person. Interventions based on communicable disease reports were sometimes welcomed (leading to referral to clinics, provision of food and clothing) but were sometimes a cause of alarm (when leading to mandatory vaccination or treatment, quarantine or deportation). Official morbidity reports were usually protected against public disclosure by law, regulation, and practice. Surveillance was also the basis for population health measures, such as the pasteurization of milk, regulation of food and drug manufacture, housing reform and other measures that addressed the structural causes of disease. Resistance to such measures, largely on the part of independent and incorporated businesses, was often framed as an issue of individual rights.

Physicians, worried about interference with their patients and use of their time, often resented, resisted or simply ignored mandates for reporting. But not all monitoring of morbidity and mortality required identification of cases by name. Reporting of sexually transmitted diseases, for example, was often done by code instead of name in industrialized countries *(21)*. Contact tracing, of course, required names, but most physicians kept the index case anonymous when patients cooperated by providing the names of sex partners and adhering to treatment. Whether names were necessary or whether informed consent was required often framed debates as surveillance was extended, over

the course of the twentieth century, to NCDs such as cancer, diabetes and stroke and to occupational exposures, substance use, road accidents, injuries, vaccination status and vaccine reactions *(22)*.

During the twentieth century, it was often people affected by a disease or condition who challenged the need for surveillance; but, just as often, the story of surveillance has been one in which affected groups have demanded the "right to be counted" *(22)*. NCD surveillance, in contrast to infectious disease surveillance, has been underfunded and "woefully inadequate," even in high-income countries *(23)*. Workers exposed to toxic hazards and citizens vulnerable to environmental pollutants have sometimes joined social movements as a means of gaining both attention and the resources necessary for surveillance; however, the more common story is that chronic disease threats, particularly those of vulnerable populations, remain invisible.

Global crises often expose systemic challenges that are insufficiently addressed. Undocumented migrants with tuberculosis are still not included in statistics submitted to WHO by some countries *(24, 25)*, but it would be a mistake to assume that the only challenges are the absence of surveillance or under-reporting. Tuberculosis surveillance data, for instance, were critical for determining levels of funding from the Global Fund to Fight AIDS, Tuberculosis and Malaria. Surveillance staff sometimes found themselves under high pressure to reach what some criticized as unrealistic targets. They had to choose between showing "good" results or losing their jobs, adversely affecting the quality of data in some settings *(26, 27)*.

Industrial pollution. Moscow, Russia.
Source: WHO /Sergey Volkov

These guidelines are based on the understanding that surveillance is so fundamental a public health practice that its advancement cannot depend on crises or citizen protests to make the case for tracking disease for the sake of public health. While these guidelines represent a call to action, it is not a call to unrestrained action. Rather, public health surveillance, conducted in a manner that anticipates ethical challenges and proactively seeks to reduce unnecessary risks, provides the architecture for social well-being.

III. Framing the ethics of surveillance

Existing guidelines

Limited academic literature on the practice of public health surveillance addresses the major ethical questions that arise in data collection; when the data are actually stored, used and shared; and data dissemination. The academic literature is *(28)*, however, no substitute for guidelines that go beyond current disease-specific, national recommendations *(29)*.

In the decades since the Second World War, both international and national bodies have proposed ethical principles, guidelines and laws to govern research with human subjects. In response to egregious harm inflicted on individuals coerced into clinical research, new codes of ethics uniformly prioritized individual self-determination and emphasized the importance of informed consent for research, while acknowledging that it would hardly be straightforward in complex situations to balance the protection of human research subjects against the social benefit of the research. In the practice of clinical ethics, autonomy assumed a place of singular importance, representing a fundamental change in a moral world view *(30-33)*.

In its "International guidelines for ethical review of epidemiological studies" in 1991, CIOMS acknowledged that existing guidance focused on "patients and individual subjects" was not sufficient for studies involving "groups" of people. After considerable controversy, a consensus emerged: CIOMS stressed the importance of the principles of research ethics first set out in the Nuremberg Code but recognized that application in the epidemiological context would require flexibility *(34)*. The tradition that developed was one in which research ethics committees could waive a requirement for informed consent when the risk posed by epidemiological research was "no more than minimal" and obtaining consent would make the research "impracticable" *(34)*.

While public health surveillance may share methodological strategies with epidemiological research, it is not simply another form of research. In surveillance a community is the subject of concern. That surveillance is one of the responsibilities of public health was recognized in 1991 by CIOMS, which described surveillance in emergency outbreak situations as clearly requiring exemption from ethical review and oversight. In dire situations, surveillance could not "await the formal approval of an ethical review committee" *(34)*. Emergencies, however, accounted for only a small part of surveillance activities.

Not until its 2009 revision did CIOMS guidelines explicitly support continuous case-based public health surveillance (in the absence of informed consent). The revision stated, "Several considerations support the common practice of requiring that all practitioners submit relevant data [to public health surveillance registries]: the importance of having comprehensive information … about an entire population, the scientific need to include all cases in order to avoid undetectable selection bias and the general ethical principle that burdens and benefits should be distributed across the population." *(35)* This position echoed that of the Nuffield Council on Bioethics in the United Kingdom. In 2007, the Council warned against allowing individuals to opt out of reporting, arguing, "We are aware of several examples [in which] consent requirements have or could have had serious negative consequences." *(36)* Despite this sweeping endorsement of mandatory nominative case reporting without consent, the Council underscored the inevitability of

making ethical judgements about the limits of surveillance *(36)*.

Neither CIOMS nor the Nuffield Council provided more guidelines on ethics for public health surveillance, nor did they resolve the vexing problem of how to distinguish surveillance from research on human subjects. Are there morally relevant differences between public health surveillance and research *(4, 37)*? Do they require different general guidelines and oversight mechanisms? Does, indeed, public health surveillance require *any* kind of formal guidelines or continuous oversight? Drawing the line between research and surveillance – or between research and other forms of vital social inquiry such as quality improvement, implementation research, oral history or even journalism – has been challenging, but definitional solutions have (to date) proved inadequate *(38, 39)*. Accordingly, a leading group of surveillance experts underscored the need "to move past the formal demarcation between research and practice" *(29)*. These guidelines seek to do so, not by laying out new definitions but by setting into bold relief both the centrality of public health surveillance to population well-being and the need for appropriate ethical guidance and review – that is, for a paradigm of accountability that responds to the demands of public health and that is distinct from the systems that have governed research for half a century.

Public health ethics

The discipline of public health ethics has developed rapidly during the past two decades. Its central focus has been on articulating and exploring the ethical issues that arise in the pursuit of population health. This has resulted in a focus on concepts such as the common good, equity, solidarity, reciprocity, and population well-being. This is not to say that more individual values such as autonomy, privacy, and individual rights

A crowd at a community event to launch a vaccination campaign.
Source: WHO /Garry Smyth

and liberties are not also important ethical considerations; however, these more "social" or "public" values are reflected in related yet not wholly overlapping concepts that capture the broad importance of community and the affirmative duty to act. Some in the field use the language of solidarity *(40)*, drawing on the communitarian tradition in public health *(41)*; others describe the mutual obligations of reciprocity *(42)*. The Nuffield Council on Bioethics sought to capture the duties and responsibilities of government in relation to public health by the concept of "stewardship" *(36)*.

After a careful review, reflection and deliberation, the WHO Guidelines Development Group determined that the following ethical considerations are of particular importance for public health surveillance. They represent the backbone of the guidelines:

Common good: Surveillance is widely acknowledged to be a public good *(43)*, and some of the benefits it provides cannot be subdivided into individual private benefits because they are fundamentally shared *(41, 44)*. Surveillance is justified, fundamentally, as a requirement for the good of all. Without adequate oversight by public health bodies and the participation of individuals and communities, the shared benefits of surveillance are at risk. There is a complex literature on economics and moral philosophy that seeks to define and distinguish the terms "public good", "public goods," and "the common good" *(45)*. After careful deliberation, the committee adopted the term "the common good" to capture the notion of public goods more broadly conceived than in the narrow economic sense.

Equity: Public health ethics is centrally concerned with the idea of equity. It is well established that social inequality has adverse effects on health *(46)*. Not all inequality is within human control or is morally relevant. Morally problematic inequality is commonly referred to as inequity. A just or fair society will attempt to provide equitable conditions for humans to flourish, with health as a central component. Equity sometimes requires that the most vulnerable people receive what may appear to be disproportionate resources: that is, the unfair distribution of risks requires additional resources to balance the scales. Public health surveillance can further the pursuit of equity by identifying the particular problems of disadvantaged populations, including global communities, providing the evidence for focused health campaigns and identifying the basis of unfair differences in health.

Respect for persons: Public health ethics is concerned with the rights, liberty, and other interests of individuals as well as overall population well-being. Whenever possible, individuals should be involved in decisions that affect them. In some cases, individuals should be free to make their own choices; in other cases, when population-level interventions may be necessary, individuals can be consulted and involved in decision-making. But many individuals (such as young children) cannot make their own choices, and the State has an obligation to protect them and promote their long-term health interests. Undertaking public health surveillance is, itself, arguably an expression of respect for persons. This further requires ensuring that data about individuals and groups are protected and risks for harm are minimized

to the greatest possible extent. Finally, surveillance further engenders respect for persons by making protection or amelioration possible.

Good governance: Although good governance is not an ethical principle but rather a political aspiration, it is subject to a number of ethical considerations. To ensure that the ethical challenges posed by public health action are addressed systematically and fairly, governance mechanisms must be accountable and open to public scrutiny. Although protection of the common good must draw on the best available evidence, decisions will have to be made in the face of uncertainty. Accountability, transparency and community engagement are means of justifying public policy structures that promote respect for persons, equity, and the common good. Transparency requires that policies and procedures for surveillance be communicated clearly and that affected individuals or communities be aware of any decisions concerning them. Transparency also requires public reporting of the results of surveillance (in anonymized or aggregated form). Without such knowledge, communities cannot be empowered to demand government action or to protect themselves in the absence of alternatives.

These are not the only relevant ethical considerations with regard to the nature of surveillance programmes and practice but the ones considered central to making decisions in the specific context of public health surveillance by those involved in development of these guidelines.

While over the past few decades the global discourse on research ethics has come to an agreement on how best to frame issues, public health ethics has not reached such a juncture. Thus, even in documents explicitly grounded in public health ethics, differences in language and emphasis remain. This document is one of three recent WHO-sponsored initiatives to develop ethical frameworks for disease control. Building on the original "Guidance on ethics of tuberculosis prevention, care and control" in 2010 *(47)*, the "Ethics guidance for the implementation of the End TB Strategy" *(48)* addresses the most critical challenges to reducing the number of deaths from tuberculosis by 95% by 2030 and the number of new cases by 90% between 2015 and 2035. The "Guidance for managing ethical issues in infectious disease outbreaks" *(49)* in 2016, in response to the outbreak of Ebola virus disease in West Africa in 2014–2015, underscored the importance of providing ethics guidance beyond "a specific pathogen in isolation" to "cross-cutting ethical issues that apply to infectious disease outbreaks generally".

The three projects obviously have important continuity. All, for example, emphasize equity, justice, and the common good (sometimes expressed as "stewardship" or "reciprocity"). All stress the importance of respecting the dignity of persons (sometimes emphasizing autonomy or privacy). Accountability and the importance of good governance either explicitly or implicitly informs all three. They also have relevant differences that reflect the subject of each. The tuberculosis guidelines, for example, address the problem of drug-resistant disease and thus emphasize the harm principle. The guidelines on infectious disease outbreaks, framed as they were by concern for groups in conditions of tremendous vulnerability and the ways in which outbreaks can become crises, further amplified by fear and distrust, places greater emphasis on human rights. Given the need to make decisions in

the face of uncertainty, they also stress utility, proportionality and efficacy.

The ethical considerations outlined above and repeated and amplified in the guidelines that follow are, in the estimation of this committee, central to justification of surveillance as a core activity, beyond outbreaks or infectious disease situations. They must be applied in situations that may vary in fundamental ways. The guidelines recognize that trade-offs of values are sometimes inevitable. The local traditions and priorities in countries may sometimes result in a different balance between competing values and priorities. It is important to stress, however, that not all trade-offs are morally acceptable. Local, national, or regional circumstances may be characterized by gross injustice or violations of human rights. In these contexts, rather than serving the common good, public health surveillance may be used as an instrument for violation of respect for persons, equity, and justice. In countries where sex work is a criminal offense, for example, HIV surveillance can be used for oppression. Likewise, an occupational disease surveillance system that results in routine dismissal of workers affected by silicosis, black lung, or asbestosis would be unacceptable. Appeal to "trade-offs" under such circumstances could well be a pretext for further oppression and should be guarded against.

The State is a source of both intrusion and protection. Some disease burdens and forms of health oppression simply cannot be made visible without State-sponsored surveillance *(50)*. On the one hand, surveillance makes public health interventions to address inequities possible. On the other hand, surveillance may be used to impose additional burdens on those who are already disadvantaged. The only assurance that surveillance will amount to neither privilege nor punishment is attention to the ethical considerations described above: both burdens and benefits should be critically weighed and then fairly distributed in a transparent manner in which States are held accountable.

IV. Guidelines

As a consequence of the development of ethical norms for the conduct of research during the past few decades, research ethics committees have been established in almost all countries. As surveillance does not fall under the rubric of research, however, there has been no systematic framework for continuous ethical oversight or analysis of the challenges posed by surveillance activities. The following guidelines are premised on the conclusion that ethical scrutiny of public health surveillance is necessary.

The guidelines are, necessarily, not prescriptive; rather, they seek to highlight trade-offs that must be carefully and routinely weighed. They do not provide concrete definitions, measures, precise surveillance parameters or oversight mechanisms that might, on the surface, appear to make decision-making less complex. Concepts like "legitimate public health purpose", "disproportionate burden", "community engagement" and "good governance" cannot be regarded as universal yardsticks for use by decision-makers. Rather, agreement on definitions for use in different contexts lies at the very heart of the vexing political and ethical judgements that must be made: grappling with the meaning of concepts in specific local and national settings represents a first step in ethical engagement.

The following guidelines, then, cover (i) the broad responsibility to undertake surveillance and subject it to ethical scrutiny; (ii) the obligation to ensure appropriate protection and rights; and (iii) considerations in making decisions about how to communicate and share surveillance data. These guidelines represent a starting point for the searching, sustained discussions that public health surveillance demands. Like other international guidelines on research ethics, the ethics of surveillance will require continuous review and revision in the light of experience.

Kim Pai factory, Bangkok, June 2015.
Source: WHO /Diego Rodriguez

Guideline 1. Countries have an obligation to develop appropriate, feasible, sustainable public health surveillance systems. Surveillance systems should have a clear purpose and a plan for data collection, analysis, use and dissemination based on relevant public health priorities.

Member States have an ethical duty to protect population health – not only that of their citizens but that of all people within their borders, including refugees, undocumented workers, and individuals in transit *(51)* – and to address the disparities that characterize the distribution of morbidity and mortality. The duty to protect population health is the foundation of an affirmative responsibility to conduct public health surveillance. The exercise of that responsibility may be assigned to subnational governmental bodies.

Without public health surveillance systems, population health cannot be protected and inequalities cannot be adequately addressed. Inattention to pressing public health needs leads to erosion of trust. Thus, from the perspective of the common good, the *failure* of countries and the international community to undertake adequate public health surveillance represents a central moral concern. The importance of population health thus imposes upon States an obligation to develop systems that capture data critical to identifying and responding to (outbreaks of) infectious diseases, epidemic threats and the toll exacted by injuries and chronic disease, which demand environmental and occupational monitoring or investigation. A commitment to equity and justice can uncover the ways in which patterns of morbidity and mortality reflect and contribute to social inequality. As such comprehensive systems are beyond the capacity of some countries, the international community, as described in Guideline 6, has the obligation to provide support.

Passive systems of surveillance are often sufficient, such as monitoring seasonal outbreaks of influenza from incidence and prevalence rates that include neither names nor case verification with costly laboratory tests for all individuals with influenza-like syndromes. Even in the instance of influenza, however, systematic community-based surveillance provides a more accurate depiction of outbreaks. The State might have to establish active surveillance systems, taking proactive steps, for example, to find data: this might require examining clinical records to ensure complete reporting and to confirm an influenza diagnosis. Cancer registries in some countries have included such active surveillance.

Surveillance systems often entail the enactment of regulations and statutes that impose upon clinicians, health care administrators or laboratories a duty to report to public health registries. To ensure effective surveillance of disease priorities, it is often necessary to mandate the reporting of individually identifiable data, including names and other socio-demographic characteristics. Such intrusion on clinical confidentiality is justified when names are required to ensure the collection of accurate data, which is separate from the need to target interventions. But accurate data and targeted interventions both rest on the moral obligation to prevent harm to others and the common good or to provide the best resources to populations according to the burden of disease, as in the case of cancer registries. Guidelines 11 and 12 outline the ethical limits to name-based reporting.

Public health surveillance activities require investment of societal resources to preserve, protect and promote health. In all countries, but especially in low-resource settings, allocating societal resources for public health surveillance requires prioritization. This issue is discussed further in Guideline 5.

Once surveillance data are available, Member States have the moral duty to use the data actively to promote better health outcomes. Even when resources limit the capacity of countries to take immediate action on the basis of the findings of public health surveillance, the data provide the evidentiary basis for advocacy directed at both the national and global communities, thus potentially empowering the most vulnerable. The pursuit of equity establishes a warrant for surveillance, and the global community should provide the necessary help in moving from collecting and analysing data to action (see Guideline 6).

Interior view: a nurse is examining two young children in the dining area of the home; the mother is standing to the left; further to the left is a large stove situated next to a fireplace.
Source: The National Library of Medicine

Guideline 2. Countries have an obligation to develop appropriate, effective mechanisms to ensure ethical surveillance.

Public health surveillance has inherent benefits for the functioning of the public health system, as well as risks. Countries should have an appropriate, effective mechanism for ensuring adherence to ethical standards in both emergency and non-emergency situations. Decisions about changing an established surveillance system can pose important ethical challenges. Examples of changes that may require ethical scrutiny include: collecting data elements that reveal stigmatized behaviour; adding new elements of data collection, such as measurements of CD4 counts as part of routine HIV/AIDS surveillance; adopting new uses for existing surveillance data, such as for case management or contact tracing; or using public health surveillance data for commercial or security purposes.

In the case of research, review committees monitor adherence to ethics standards. Such an independent, impartial oversight mechanism allows for close scrutiny and can ensure that relevant protection is in place. These guidelines do not recommend mechanisms that mirror those that have emerged in the context of research ethics. However, public health surveillance is currently not subject to routine oversight. It is the obligation of countries to decide the most appropriate processes for identifying and addressing the ethical issues that arise in public health surveillance.

Box 1 provides some examples of existing mechanisms. Any mechanism or process should ensure ethical implementation of surveillance without itself becoming an obstacle to achieving the larger public health goal. (We address the nexus of surveillance and research in Guideline 16.)

Such mechanisms of ethical oversight should effectively identify the risks and benefits of surveillance and suggest measures to enhance the benefits, minimize the risks and ensure appropriate weighing of the common good, equity, and respect for persons. Oversight should be continuous, and any substantial changes proposed to the surveillance system should be evaluated through an "ethical lens".

Ethical monitoring of surveillance can be facilitated and enhanced by training public health personnel. Such training can emphasize the importance of integrating ethical analysis early and explicitly when developing and implementing a surveillance system.

While the establishment of an independent, impartial ethics oversight mechanism is warranted, concrete implementation will depend on the social, political, legal, and cultural context in which surveillance is conducted *(52)*. Research usually entails discrete projects with time-limited horizons, whereas surveillance usually involves continuous monitoring as opposed to a one-time review. The most appropriate mechanism for ethical scrutiny should be chosen in a transparent, accountable fashion. (See guidelines 2 and 5 and the discussion of good governance in section III.)

Box 1. Examples of oversight mechanisms

Public Health Ontario (Canada)

In 2012, Public Health Ontario published "A framework for the conduct of public health initiatives". It applies an integrated approach for ethics review, in which all evidence-generating initiatives undergo ethical scrutiny proportionate to the level of risk. Its Ethics Review Board plays a vital role in helping to ensure that research and other initiatives conducted by Public Health Ontario are carried out in a manner that is consistent with the second edition of the Federal "Tri-council policy statement on ethical conduct for research involving humans and other relevant regulations, policies and guidelines". The Ethics Review Board addresses research, evaluation, surveillance, and quality improvement projects that involve human participants, their data, or their biological materials. Membership of the Board complies with the provisions of the Federal policy statement with regard to expert representation and composition, with members selected from Public Health Ontario and public health units and academic institutions in Ontario. They have expertise in various public health disciplines and in methodology, law, and ethics; the members also include community representatives. (Source: https://www.publichealthontario.ca/en/About/Pages/Ethics-Review-Board.aspx)

Centers for Disease Control and Prevention, Public Health Ethics Unit (USA)

The Centers for Disease Control and Prevention established the Public Health Ethics Unit in the office of the Associate Director for Science, which collaborates with the Public Health Ethics Committee. It provides support throughout the institution; its aims are to "integrate the tools of ethical analysis into day-to-day operations". It provides training, fosters and sustains a culture of ethical analysis, and provides guidance for and support in ethics consultations. (Source: https://www.cdc.gov/od/science/integrity/phethics/)

National Health Service clinical governance committee (United Kingdom)

The National Health Service in the United Kingdom distinguishes between research and non-research activities. Individuals involved in audits, programme evaluation, or public health surveillance are directed to seek advice from the clinical governance office of their local National Health Service organization. (Source: http://www.nhs24.com/aboutus/nhs24board/boardmeetingsandcommittees/committees/clinicalgovernancecommitttee/)

Public Health Ethics Consultation Service, WHO

The Global Health Ethics Unit at WHO created a new mechanism in 2015 to help colleagues working in public health to address ethical issues. Like those of the Ethics Review Board of Public Health Ontario and the Public Health Unit at the Centers for Disease Control and Prevention, the mandate of the Public Health Ethics Consultation Service extends beyond surveillance. Programmes and initiatives are not required to be reviewed by this service: WHO staff solicit advice as needed in order to maximize flexibility and ensure that ethical consultation is not viewed as a bureaucratic hurdle. Its advice is informal and non-binding. The group is made up of WHO staff, who receive continuing training in public health ethics and seek advice from the global network of WHO Collaborating Centres for Bioethics. (Source: http://www.who.int/ethics/en/)

Guideline 3. Surveillance data should be collected only for a legitimate public health purpose.

Governments and others involved in public health surveillance should collect only information that is relevant for legitimate public health purposes, such as to protect, enable or enhance public well-being, reduce morbidity and mortality, increase access to the health system and services and reduce health disparities and thereby inequities. All further discussions of public health surveillance in these guidelines is based on the assumption that it is undertaken exclusively for a legitimate public health purpose.

Literature on good governance usually considers legitimate measures to be those that are publicly defensible, morally justified and/or socially acceptable in pursuit of a common good. (53, 54) Any collection of personally identifiable information that does not meet these conditions would be ethically problematic. A legitimate public health purpose is required not only for the collection of data but also for the further use of data already in hand.

Data collected for clinical purposes (for example to diagnose infectious disease, to monitor microbial resistance, to monitor NCDs like diabetes or to track behaviour associated with coronary heart disease or obesity) can be used for legitimate public health surveillance purposes, provided that such use meets the criteria bar set in guidelines 1, 3, 4 and 7–14 of this document. Such repurposing requires adequate protection of data security and confidentiality (Guideline 10).

Children`s Environmental Health in India.
Source: WHO /Diego Rodriguez

Guideline 4. Countries have an obligation to ensure that the data collected are of sufficient quality, including being timely, reliable and valid, to achieve public health goals.

Data should meet the most exacting yet reasonable standards with regard to completeness, uniqueness, timeliness, validity, accuracy and consistency for the purpose and the resources available to fulfil that purpose. Where relevant, this requirement extends to external quality assurance of laboratory data. The quality of data is a precondition of their ethical use. Determining the adequacy of data, however, depends, in part, on whether they are to be used to intervene at the level of the individual (e.g. contact tracing) or the population (e.g. estimating the incidence and prevalence of a disease or exposure). Their adequacy will also depend on whether a disease is infectious, noncommunicable or environmental, and whether the condition is chronic or acute. How data quality is assured from a technical perspective will depend on the priority, the context and the type of surveillance. While some countries and institutions explicitly stress the accuracy or reliability of data *(55)*, others value rapid collection of useful data over complete accuracy.

Countries have obligations to ensure sufficient numbers of trained staff to generate and competently analyse surveillance data and promote quality. The quality of surveillance data can be improved not only by formal technical evaluation but also by regular audit and benchmarking against national and international norms *(56)*. Countries have an obligation to educate people who contribute to surveillance about its goals and to explain why surveillance is conducted, what risks might arise, how those risks can be minimized and any appropriate legal and ethical obligations. Individual health care workers, professional bodies, and agencies (like hospitals and laboratories), in turn, have a professional obligation to support and contribute to maintaining the integrity of surveillance activities and to ensure that data of the best possible quality are obtained.

Counterintuitively, data quality may be compromised by widely used performance-based funding mechanisms. Too great an emphasis on achieving targets, linked to funding, can undermine the integrity of surveillance. For example, countries may be pressured to produce data to secure resources, and staff may have to choose between providing either the data desired by funders or the correct data and risk losing their jobs. Realistic target-setting at international and national levels and broader international support for surveillance (Guideline 6) are possible solutions to counteract the scramble for funding that produces unreliable data.

Guideline 5. Planning for public health surveillance should be guided by transparent governmental priority-setting.

Public health surveillance involves the investment of resources that could be allocated to meet other goals, such as clinical care or prevention *(57)*. Furthermore, within the resources available for public health surveillance, priorities must be set. Given competing goods, the allocation of scarce resources must inevitably engage questions of equity and efficiency. As no absolute standard can guide such determinations, it is critical that decision-making be transparent, fair and open to revision *(58)*. Governments are accountable for how priorities are set. Transparency is important because it fosters trust and creates conditions for citizens to advance the common good individually and collectively *(59)*.

Transparency is essential with respect to: (i) the aims and duration of any public health surveillance activity, (ii) the rationale for such activity relative to explicit health or health care system goals, (iii) the intended benefits and potential burdens to citizens and other actors of public health surveillance, (iv) the scope and methods to be used in collecting data, (v) the intended uses of data and by whom, (vi) the mechanism by which use of data will be monitored, (vii) the mechanism by which subsequent use of data would be overseen at community level and (viii) the recourse that citizens or other actors may have if public health surveillance fails to meet legal and/or ethical standards. Surveillance data should be publicly reported (see Guideline 13) to the extent that they will increase public trust, serve the aim of promoting and protecting public health nationally and internationally and will not unduly harm any identifiable group or exacerbate inequity *(54, 58)*.

Citizens should have access to mechanisms to express their concerns and priorities with regard to surveillance. For example, communities may express concern about a potential cluster of birth defects or cancers that necessitates not only targeted epidemiological studies but also the creation of surveillance systems. Priorities should not be set solely by experts nor by those with access to health officials and policy-makers, neglecting populations with less opportunity to voice their concerns.

Pandemic containment exercise (simulation), conducted by the Ministry of Indonesia with the support of WHO Indonesia.

Source: WHO / SEARO /Nursila Dewi

Guideline 6. The global community has an obligation to support countries that lack adequate resources to undertake surveillance.

Some countries may be unable to establish and maintain public health surveillance of sufficient quality, even for high-priority targets that could greatly reduce health inequalities and improve population health, because of severe resource constraints. Equity provides the ethical foundations for claims to international support. The global community – international health organizations, NGOs, major foundations, countries with a global leadership role – has an ethical responsibility to work collaboratively with these countries to support public health surveillance and subsequent interventions. The aim of this requirement of global justice is to reduce health inequalities among countries and improve global health.

For example, preventing and limiting the global spread of disease was a key rationale for the obligations under the IHR. Given that outbreaks and risk factors do not recognize borders, the global community also has an interest in having sustainable surveillance systems, even in countries that do not have the means to establish and maintain them *(20)*. Likewise, effectively addressing NCDs and environmental threats requires international support for surveillance *(60, 61)*. Agencies with a strong capacity for surveillance should regularly update technical guidelines for best practices. The international community should help to ensure that both technical and ethical training is widely available.

Surveillance may require support not only for technical capacity, however, but also for systematic, formal ethical evaluation and improvement, as demonstrated by global support for training in research ethics. Thus, international organizations also have an obligation to facilitate and encourage countries to practise good governance by meeting their ethical and legal responsibilities. When countries fail to protect the fundamental rights or interests of individuals or populations in public health surveillance, international support should be contingent on their rectifying such violations and wrongdoings.

An obligation to support does not give the global community license to ignore the priorities of countries that require support or resources. International humanitarian organizations have expressed deep concern that surveillance is too often driven by the security needs of high-income countries, creating ambiguities about who the chief beneficiaries of surveillance are *(3)*. When a country's decisions have been made in a participatory, transparent manner, the global community has an obligation to meet local surveillance aspirations that exceed or even conflict with the priorities set by international donors *(62)*. For example, malnutrition may be a priority for surveillance in a country with limited resources, whereas international donors may view that concern as of lower priority than an infectious disease outbreak. Genuine partnerships may require reform of global health governance, shifting the priority from securitization, politics, and trade to "universal health values" *(63)*.

Too often, data are collected locally but analysed at State or country level, with minimal feedback. Both the international community and country officials should encourage the analysis and use of surveillance data collected *at* the local level *by* the local level. Local analysis and use can enhance accountability and the capacity to improve population health. When local analysis is not possible, analyses performed at central or national level should be shared with the local level.

Guideline 7. The values and concerns of communities should be taken into account in planning, implementing and using data from surveillance.

Officials, agencies, and organizations responsible for surveillance should try to engage the population beforehand about the goals, processes, and potential impacts (both positive and negative) of surveillance activities as a means of demonstrating respect for persons. When this is not possible or is not done, those responsible for surveillance must bear in mind that their work is being done without consideration of the concerns of the community; those responsible for surveillance necessarily become stewards not only of the common good but of community interests. Engagement is particularly important when a surveillance activity disproportionately burdens a specific population (e.g. through stigmatization). Engaging with communities, especially those that have been historically marginalized, and empowering them to participate actively is particularly important. Given that some public health surveillance activities require coordination at local, national and international levels and involve multiple actors, active inclusion and participation of communities may be useful in building or sustaining trust across levels and implementing activities more efficiently and effectively.

It is often difficult to define a community, because geographical area is not the only salient characteristic. Shared traditions and values and a common identity may be important defining factors. Health conditions may also help define a community.

The appropriateness of engagement is another subject of debate. Some advocates incorporate community engagement in the design, implementation, monitoring and evaluation of surveillance. Community engagement in the dissemination of results is warranted, particularly when the findings may result in stigmatization or discrimination. For others, a commitment to engagement may be more flexible. Taking account of community values and concerns requires, at a minimum, that legitimate authorities undertake public health surveillance in a transparent manner in accordance with the principles of good governance. Active engagement of the community may involve meetings with community leaders, focus group discussions and other forums that provide an opportunity for members to clearly express their values and concerns (see Guideline 5 and the discussion of good governance in section III).

Box 2. Community engagement

A particularly compelling, flexible method for engaging communities is democratic deliberation. This is a structured method for decision-making that brings together diverse stakeholders to construct solutions to complex policy questions. Participants engage in discussion and dialogue, communicate their perspectives respectfully, and provide justification for their views in a way that everyone involved can grasp. The goal is to make pressing decisions while considering empirical evidence, communities' lived experience, and values. The US Bioethics Commission (64) has used the deliberative method as it has grappled with difficult issues fraught with tension and has made available a variety of training tools (65). While it is only one means of ensuring citizen involvement and is not appropriate for all situations, it has been a staple not only of local and national but also global decision-making. For example, in June 2016, (66) some 10 000 citizens in 76 countries expressed concern about climate change and recommended legally binding measures, including "reporting of [each nation's] adaptation and mitigation efforts" to keep global warming below 2 °C. (67)

Guideline 8. Those responsible for surveillance should identify, evaluate, minimize and disclose risks for harm before surveillance is conducted. Monitoring for harm should be continuous, and, when any is identified, appropriate action should be taken to mitigate it.

Even when public health surveillance is clearly justified to promote the common good, Member States and those responsible for conducting surveillance should remain alert to the possibility that harm can be caused to both individuals and communities (Table 2).

This does not mean that surveillance should not be conducted. Rather, those conducting surveillance have an obligation to identify potential harm beforehand, to monitor for harm during and after surveillance and to put in place processes to mitigate harm. Without continuous monitoring, mitigation is impossible. This is vital, not only because it is wrong to cause unnecessary harm, but also because harm – to both individuals and communities, such as loss of property value or tourism dollars – may also damage public trust in the programme and in public health in general. (See guidelines 5, 12 and 13 and the discussion of good governance in section III.)

In some instances, countries have provided compensation for the harm that might inevitably accompany surveillance. In the context of SARS, Chinese Taipei gave people who were quarantined the equivalent of US$ 147 *(68)*. Basic welfare benefits or sick pay for those deprived of work as a result of surveillance are other possibilities. The possibility of compensation should not, however, pose a barrier to surveillance *(69)*.

There are many different types of harm: economic, legal, psychological, social (and reputational) and physical. All should be considered in relation to surveillance *(70-72)*. For example, a migrant or a person in another disadvantaged group may be identified as being at higher risk for an infectious disease through surveillance, and this could lead to stigmatization of the group. Relevant information must be handled very carefully: reputations can quickly be damaged, with devastating results across a spectrum that may include not-yet-documented types of harm *(73)*. Various moral values and ethical principles should be weighed and balanced against each other and a judgement made about fair distribution of burdens and benefits in different surveillance initiatives or systems in a transparent way (see discussions of equity and good governance in section III).

When, despite all efforts to mitigate harm, surveillance entails a predictable risk for harm (stigmatization, discrimination, expulsion or violence), additional precautions should be

Table 2. Types of harm potentially related to disclosure of public health surveillance data

Type of harm	Result
Physical	Public attacks, spouse/partner abuse, domestic violence, delayed or inadequate treatment
Legal	Arrest, prosecution, death penalty, expulsion
Social	Discrimination, community discrimination, isolation, inability to access care or exclusion from care, rejection from the community
Economic	Loss of employment or revenue, loss of health care services, loss of insurance, increased insurance premiums, increased health care costs, limited career options, loss of life resources, forced relocation
Psychological/emotional	Distress, trauma, stigma

Health brigades in Chiapas, Mexico, during the epidemic of H1N1 influenza, 2009.
Source: WHO /Harold Ruiz

taken to protect the individuals or communities at risk. The risk for serious harm may, in rare circumstances, be so great that surveillance might be difficult to justify morally. In most cases, however, mitigation strategies can ensure that risks for harm are dealt with adequately. Once harm or potential harm is identified, action must be taken to reduce the risk, or a plan must be in place for reducing, removing or compensating for any harm.

As not all harm can be eliminated, the benefits of surveillance should be proportional to the risk for harm. Protective measures should include the way in which health authorities present information or action to the media and the broader public. Sensationalist representations of statistical facts can, for example, result in reputational damage and extend the period of economic recovery for those affected by a health issue, as in the case of countries or communities identified as a source of an infectious outbreak. Processes and measures should be in place to mitigate some of the financial and other harmful consequences of surveillance in order to minimize any negative consequences for a community and to maintain trust. Additionally, given their mission to mitigate harm, politically neutral international humanitarian organizations must not be hindered in situations such as civil conflict zones, where international agencies are constrained when it comes to recognizing "opposition parties as operational partners" *(3)*.

Notably, public health professionals themselves sometimes require protection. As champions of the common good, they must be free to report without fear of reprisal. As surveillance officials have a responsibility to speak up, they should have protection. This idea is established in the IHR, which protects the confidentiality of those who report a verifiable outbreak or a public health event outside official channels.

Guideline 9. Surveillance of individuals or groups who are particularly susceptible to disease, harm or injustice is critical and demands careful scrutiny to avoid the imposition of unnecessary additional burdens.

Individuals or groups in situations of heightened vulnerability bear an undue proportion of health problems. Responsible authorities should make special efforts to ensure that these populations are included in surveillance in ways that will empower them. How exactly situations of vulnerability should be defined is a subject of dispute in the literature *(74)*. Vulnerability may be diffuse, affecting large communities with limited economic development, limited access to health care facilities, educational deprivation, occupational risks or wider disadvantages in society. Public health surveillance and health information systems can provide valuable information to aid the development of health programmes and services to address their health problems and the underlying determinants of health, such as clean water, food security, or gender equality. To promote equity, surveillance should focus on the specific problems of these vulnerable communities.

People with particular susceptibility to disease, harm or injustice are also at increased risk for further burdens, such as discrimination and stigma, attributable to surveillance activities or findings. For example, refugee groups and undocumented migrants with a higher disease burden may be seen, wrongly, as the cause of disease outbreaks. Similarly, workers with an occupational disease, such as silicosis, who lack access to adequate legal support may be dismissed from work rather than receiving treatment or compensation. Wherever possible, susceptible groups should be identified before surveillance activities begin in order to minimize the risk for harm. In surveillance programmes, there should be constant monitoring for (further) harm to those in conditions of particular vulnerability. When harm does occur, a mitigation strategy should be put in place (see Guideline 8).

The HIV oral test on a brothel bed in Belém do Pará, Brazil.
Source: Laura Murray

Guideline 10. Governments and others who hold surveillance data must ensure that identifiable data are appropriately secured.

Responsible data collection and sharing practices should ensure the security of the data collected in order to respect persons and safeguard the privacy and other interests of the individuals and communities concerned *(50)*. Every effort must be made to secure records to prevent unauthorized disclosure. Security is different from privacy and confidentiality, yet it is an essential component of each. "Security" in this context consists of operational and technological safeguards to protect personal data from unauthorized access or disclosure. Maintaining information security is not fool-proof, as electronic databases can be infiltrated.

Governments and others who hold surveillance data must take appropriate technical and organizational steps to protect data against accidental or unauthorized access, destruction, loss, use or disclosure, whether the data are collected and stored in paper or electronic (digital) format. All personnel with access to public health surveillance data should be trained annually in data security procedures and made aware of their professional ethical responsibility to protect the data and the public. The level of security must be appropriate to the risks and the nature of the data to be protected, taking into account the state of the art and the cost. In particular, sensitive information, which raises the risks of individuals and communities for stigmatization or discrimination, should be subject to specific and especially rigorous security safeguards.

The imperative to secure data should not be considered a license to refuse to use or share surveillance information effectively for legitimate public health purposes. (See guidelines 14–17 on sharing and the discussion in Guideline 2 on meaningful ethics training.)

Staff at the Medical Records Office sort through patient files at Karapitayam Hospital, Galle.
Source: WHO / SEARO /Gary Hampton

Guideline 11. Under certain circumstances, the collection of names or identifiable data is justified.

In some instances, the collection of names or identifiable data is both technically and ethically imperative. Effective surveillance may require the de-duplication of records (that is, avoidance of double-counting, which can lead to overestimates of incidence or prevalence).

THE NEW CASES REPORTED.

Names and Addresses of Those Stricken with Paralysis.

The following is a list of the names and addresses of the new cases of infantile paralysis and deaths in the city yesterday:

NEW CASES—BOROUGH OF MANHATTAN.

Morris Katz, 208 E. 7th St.
Bella Cohen, 647 E. 11th St.
Charles Barisch, 502 E. 16th St.
David Shapiro, 241 E. 25th St.
Rose Sciascia, 228 Chrystie St.
Muriel Weiss, 308 Broome St.
Caroline Vilini, 218 Bowery.
Giuseppe LaRocca, 119 Elizabeth St.
Nathan Holneck, 33 Henry St.
Stephen Milianosky, 58 Monroe St.
Jenny Serrelese, 359 W. 53d St.
William Soles, 458 W. 166th St.
Carl Thornihlin, 731 Tenth Av.
Bennie Katz, 57-59 E. 112th St.
Madeline Schurian, 158 Eighth Av.
Nicolcetta Volnini, 414 E. 120th St.

DEATHS—BOROUGH OF MANHATTAN.

David Shapiro, 241 E. 25th St.
Carmelo Cirrincini, 346 E. Houston St.
Giuseppe LaRocca, 119 Elizabeth St.
Bennie Katz, 57-59 E. 112th St.
Sam Greenberg, 206, E. 6th St.
Bella Cohen, 647 E. 11th St.

NEW CASES—BOROUGH OF BRONX.

John Jonnohic, 558 Hewitt Place.
Jacob Goldberg, 702 E. 161st St.
Harriett Campbell, 462 E. 162d St.
Joseph Blum, 342 St. Ann's Av.

DEATHS—BOROUGH OF THE BRONX.

John Hamilton, 503 W. 169th St. Died at Riverside Hospital.
Thelma Arms, 430 E. 141st St. Died at Lincoln Hospital.

Names and addresses of people with dread diseases were regularly reported in newspapers until the 1960s.

Source: New York Times, July 22, 1916. Public Domain.

Names and other unique identifiers (social security numbers, identity card numbers) may also be essential for longitudinal surveillance registers, which require correct linkage of records on the same individual and/or their relatives or contacts over time. Unique identifiers may likewise be required to link data from different sources (for example, registries of tuberculosis and HIV, or birth defects and Zika virus infection). Critically, names and other specific identifiers are required for outbreak investigation or case follow-up and contact tracing (e.g. to identify and offer testing and treatment to the sexual and needle-sharing partners of people with sexually transmitted infections).

There has been disagreement over whether unique identifiers can be used instead of names. Unique identifiers are expensive to create and, if constructed in a fashion that allows accurate data linkage, could easily be linked back to names. Some countries experimented with coded reporting for HIV infection before ultimately adopting nominative systems. While such systems were initially the only politically viable solution, they were abandoned when they were found not to meet federal funding standards for reliability and validity. However, technological advances have created new possibilities. Digital data can be scrambled and encrypted into unique identifiers that are perhaps impossible to trace back to individuals. Good governance requires that the trade-offs of using names as opposed to unique identifiers or encryption be the subject of continuing, transparent, public discussion that takes into account surveillance system requirements, changing technical capacity, risks, and evolving norms with regard to unique identifiers (which may become ubiquitous) and their legitimate use *(75)*.

Another important consideration in the collection of data is the geographical location of

individuals, which can be an indirect identifier. It is ethically important to prioritize confidentiality during the collection of geolocation data and also for the release or sharing of global positioning system data, which should be geo-masked to minimize risk of disclosure, preserving spatial distribution but preventing identification of cluster-exact geo-coordinates *(76)*.

When the collection of names or unique identifiers is considered imperative, this requirement should be made explicit in planning the programme. Not only will countries make different judgements, but the requirement for names may not be uniform within countries. Personal data may be required only at local level, while anonymized or aggregate data may be sufficient at higher levels in a country or globally.

Drone in clear sky. Robert Lynch.
Source: CC0 Public Domain

Guideline 12. Individuals have an obligation to contribute to surveillance when reliable, valid, complete data sets are required and relevant protection is in place. Under these circumstances, informed consent is not ethically required.

There is a long history of objection to public health surveillance without informed consent. Nevertheless, informed consent is not the default in public health surveillance. Many countries have enacted laws that require such systems to collect personal data without consent, subject to legislatively prescribed safeguards.

All individuals in a population are likely to benefit from surveillance programmes. Individuals, therefore, have a reciprocal obligation to contribute to surveillance and thereby promote the common good. Even when the potential benefit to any one individual is small, as the epidemiologist Geoffrey Rose famously pointed out, the benefit to the community as a whole may be large *(77)*. Population benefits provide the moral obligation for individuals to contribute. If it is possible to opt out (and too many people do so), public health might be unacceptably compromised *(78)*. Seeking informed consent is often not feasible in practice, e.g. from large populations. It may be prohibitively costly and unwarranted when the risks are low (as in some epidemiological research in which CIOMS has allowed waiving of consent). In some cases, however, consent is the norm, such as in routine descriptive health surveys. It is the obligation of the public health authorities accountable for surveillance to assess the importance and feasibility of seeking informed consent. It is important to clarify that, when consent is required, it must be genuinely voluntary.

Whether or not consent is sought, information about the nature and purpose of surveillance and about any risk for harm should be publicly accessible (see Guideline 13). Relevant protection and adequate governance mechanisms (Guideline 2 and the discussion on good governance in section III), appropriate ethics training (guidelines 2 and 6) and data security (Guideline 10) will enhance trust in surveillance systems and ensure protection.

Guideline 13. Results of surveillance must be effectively communicated to relevant target audiences.

There is compelling, widely accepted moral justification for dissemination of the results of surveillance to relevant target audiences, although it is not a substitute for ameliorative action on the part of those responsible for surveillance. At the local level, relevant target audiences include the community, community officials and opinion leaders, health care providers (doctors, nurses, health care workers), policy-makers, health advocates and health volunteers. The relevant target audiences may also include Member States, national and international agencies, and NGOs.

Although CIOMS guidelines are focused on research, they stress the importance of communicating results, both positive and negative, to "promote and enhance public discussion". Without dissemination, the social value of the work cannot be realized. In the absence of appropriate dissemination, those who collect data, including surveillance data, might rightly be accused of exploiting the individuals and groups whose health data they collect and analyse in the name of the common good. The Nuffield Council on Bioethics argued that, for dissemination to be considered appropriate, those from whom data are collected should understand the implications of the results for both health care and prevention *(35)*.

Surveillance findings should be communicated concisely in a way that is understandable to a lay audience and sensitive to community concerns (see Guideline 7). Communication should not seed panic but alert people to relevant risks in a sensible manner. Mass mailings, toll-free information hotlines, social media, newspapers, seminars, and public meetings are all possible means for conveying surveillance information to the communities from which data were collected and analysed and to the public. In resource-limited settings, street theatre, and folk art and other community-based methods can be adopted for the same purpose. Communication should also provide meaningful information for physicians, hospital managers and other relevant target audiences.

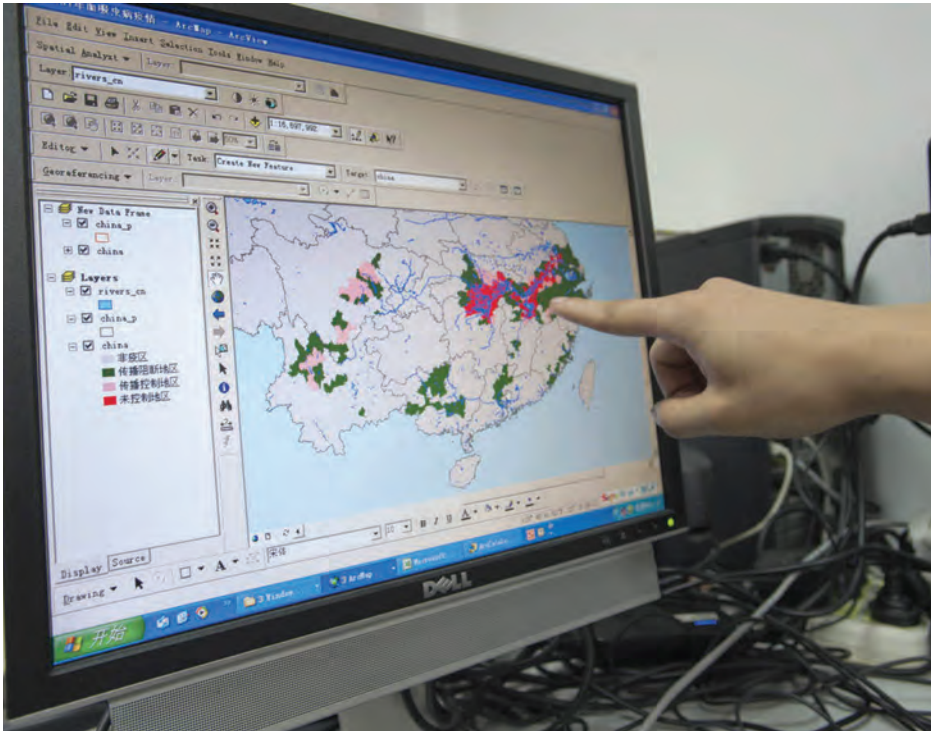
The communication of knowledge is a double-edged sword: on the one hand, knowledge may clearly empower; on the other, it may lead to injury, stigmatization or discrimination. A decision not to broadly publish data might be justified in exceptional circumstances, when doing so might cause significant harm. Likewise, if the affected population is so small (for example, cases of very rare cancers) that identification of individuals, however inadvertent, might be inevitable, communication can be limited to preserve privacy *(79)*.

Decision-makers must also weigh the harm that could result if affected communities are not informed and thus deprived of knowledge and the ability to take action to reduce the risks and the capacity to engage in advocacy (see Guideline 13). Those responsible for public health have an affirmative duty to mitigate the burdens that communication might impose on individuals or groups that are more susceptible to harm or injustice.

There is continuing debate about when, if ever, those responsible for the design and conduct of surveillance are ethically obliged to inform the subjects of surveillance about individual results or diagnosis and then refer them to the appropriate service *(80)*. For example, in the early days of the HIV epidemic, when treatment was not available, blinded seroprevalence studies were considered ethically acceptable. In these population-based surveys, HIV status was

not communicated to the study participants. With advances in HIV diagnosis and management, however, the ethical consensus shifted *(81)*. Guidelines now recommend that surveillance systems report results back to consenting individuals *(80, 82, 83)*. Guidelines also recommend that, after returning results to individuals, those with positive results be referred for proper clinical evaluation, treatment and follow-up at nearby health facilities. The guidelines also encourage partner testing *(76)* and referral for psychosocial support. This example underscores the importance of surveillance systems having an engaged oversight body to deal with such issues and make changes on the basis of new evidence or emerging best practices in other jurisdictions (Guideline 2).

Relevant ethical considerations in making a judgement about returning information to individuals include feasibility, the possibility of taking action and the potential benefit to the individual.



Map of parasitic disease epidemic area in China at the National Institute of Parasitic Diseases in Shanghai, China. 16 May 2010.
Source: WHO / TDR /Simon Lim

Guideline 14. With appropriate safeguards and justification, those responsible for public health surveillance have an obligation to share data with other national and international public health agencies.

For a public health surveillance system to be effective, equitable, and promote the common good, it must be capable of receiving and linking data from public agencies responsible for public health. For example, because of the stringent data security that has surrounded HIV surveillance, there have been situations in which data on HIV status have not been shared with those responsible for tuberculosis surveillance, obviating systematic identification of cases with co-infection. Public health workers cannot respond appropriately to swiftly changing infectious diseases in real time or take appropriate action in the case of chronic conditions without access to appropriate data. The same is true of occupational exposures. There have been examples in which agencies responsible for tracking occupational diseases have not shared data (despite the absence of a prohibition) with agencies responsible for worker protection and workplace regulation *(23)*. A review of the literature indicated that much of the failure to share information is due to poor planning rather than safety concerns. Programmes have experienced technical difficulties in sharing data, some data requiring conversion (e.g. birth year to age) in order to link databases *(84, 85)*.

Public health systems should establish frameworks to enable secure sharing of data (see Guideline 10) with other national and international agencies. Early collaboration to align processes in order to avoid foregoing benefits or wasting resources is ethically warranted. Ethical frameworks for sharing should respect persons by ensuring that only the data required to fulfil a sufficiently important, legitimate public health purpose are shared, that data are not shared more broadly than necessary, and that data are not subsequently re-shared by other agencies, except under the conditions specified elsewhere in this document, e.g. in guidelines 16–17. When the protection of different datasets is not equivalent, the more stringent privacy standard should be applied.

Guideline 15. During a public health emergency, it is imperative that all parties involved in surveillance share data in a timely fashion.

The collection and sharing of data are essential activities in ordinary public health practice. During emergencies, data-sharing takes on increased importance because of the urgency of the situation, uncertainty in the face of incomplete or changing information, the compromised response capacity of local health systems and the heightened role of cross-border collaboration. For these reasons, "rapid data sharing is critical during an unfolding health emergency" *(86)*. It not only constitutes good public health practice but is ethically imperative. Ethically appropriate, rapid sharing of data can help in identifying etiological factors; predicting disease spread; evaluating existing and novel treatment, symptomatic care and preventive measures; and guiding the deployment of limited resources. As discussed in the WHO guidance on managing ethical issues in infectious disease outbreaks *(49)*, clinical and research data that are crucial for emergency response should also be shared. Data-sharing is also an obligation under the IHR in both health emergencies and infectious disease outbreaks.

As part of continuous pre-epidemic preparedness, countries should review their laws, policies and practices on data sharing to ensure that they adequately protect the confidentiality of personal information and address other relevant ethical questions, such as settling disputes about the ownership or control of surveillance data. Efforts should be made to ensure that rapid sharing of surveillance information with immediate implications for protecting public health and advancing the common good should not preclude subsequent publication in a scientific journal *(87)*.

Medical student and district surveillance officer investigating suspected Ebola cases in Western Region of Sierra Leone.

Source: WHO /Stéphane Saporito

Guideline 16. With appropriate justification and safeguards, public health agencies may use or share surveillance data for research purposes.

Surveillance data have often served as a foundation for important public health research *(88-90)*. For example, cancer registries have been used in longitudinal epidemiological studies on survival and treatment efficacy. It may be permissible to share surveillance data with researchers undertaking studies that (i) are sufficiently important for advancement of the common good and (ii) would not be feasible without access to the surveillance data in question. There may sometimes be disagreement about what should be considered "sufficiently important" research to justify sharing of surveillance data for research purposes. This is a matter that local governments, public health authorities and/or research ethics committees (as described below) should judge, taking into account the considerations and guidelines set out in this document.

Sharing of surveillance data for research purposes requires appropriate safeguards, such as ethical oversight (see Guideline 2), anonymization, and data security. While the kind of ethical review required for conducting research is not appropriate for conducting public health surveillance, surveillance data should be shared only for research projects that have been reviewed and approved by an appropriate research ethics committee or another appropriate body, consistent with international and local standards on the ethical conduct of research. In making decisions about granting access to surveillance data, ethics committees should consider the potential public health impact of research (Is the research sufficiently important, or does it have, in the language of CIOMS, "social value"?), the risks to the subjects involved, the measures in place to protect privacy, and the importance and feasibility of seeking consent.

Striking the appropriate balance between safeguards and research advancement will sometimes be challenging. One controversial way of sharing sensitive information on drug use has been to delete any information on substance use disorders from individual clinical records released to researchers. Such protection in the name of privacy has become the centre of controversy in the context of a wide-reaching opioid epidemic. One group of critics has argued that this has left researchers "flying blind" *(91)*.

Researchers who have been provided with surveillance data should inform public health authorities about their findings. Before surveillance data are shared with researchers, there should be agreement about: appropriate data uses, restrictions on data re-sharing, adequate acknowledgement of the data source in publications, and data destruction conditions at the end of the research phase.

Guideline 17. Personally identifiable surveillance data should not be shared with agencies that are likely to use them to take action against individuals or for uses unrelated to public health.

While aggregate public health data may be widely shared with agencies outside the health sector and non-state actors responsible for public welfare, sharing personally *identifiable* data is a fundamentally different matter. Access to such personal information by agencies responsible for national security, law enforcement, or the allocation of social benefits should usually be allowed only after legal due process. To preserve trust in public health surveillance systems, there should be compelling justification for sharing identifiable data for non-public health uses.

Inappropriate sharing of surveillance data is especially controversial in countries in which law enforcement or other agencies have been implicated in systematic violations of human rights. In these contexts, collaboration with law enforcement agencies may undermine trust in public health surveillance, creating a disincentive for seeking care or honest reporting of data. This is a particular concern for individuals or groups in situations of particular vulnerability *(92)*. Further, such unwarranted sharing will potentially inflict long-term damage on public health efforts more broadly.

The governance mechanisms recommended in Guideline 2 should ensure that the exceptional conditions, if any, under which identifiable surveillance data may be shared are specified and made transparent. Such a review will require determination of whether the threat is of sufficient magnitude to warrant potential damage to the integrity of and trust in public health surveillance systems. Sanctions must be in place to prevent inappropriate data-sharing by public health agencies and inappropriate use of data by agencies outside the public health sector.

WHO Immunization officers visit Quang Binh Province, Viet Nam to monitor the Measles-Rubella Immunization campaign.

Source: WHO / WPRO /Emmanuel Eraly

A barcode is placed at the entrance of houses. After being flashed with a smartphone, the barcode provides information about whether the house was controlled and declared dengue free or not.
Source: WHO/TDR /Catalina Cardenas

V. The shifting boundaries of surveillance

Various "non-State" actors are involved in public health surveillance, including NGOs, faith-based organizations, professional organizations, research institutions, funding agencies, and supranational agencies like WHO and the European Centre for Disease Prevention and Control. Public surveillance functions may even be outsourced to private companies. This may be a cause of concern, as the data may no longer be owned by and accessible to State agencies. Nevertheless, the vicissitudes of surveillance mean that any set of ethical guidelines must cross boundaries – not only national boundaries but lines that have traditionally separated the public from the private *(93)*.

The problem of blurred boundaries has become even more complicated in the era of big data. By "big data", we refer to both the increased volume of data that can now be collected and stored, usually in digital form, and the computational power available to process it rapidly. The ubiquitous use of personal computers, smartphones, wearable devices, closed-circuit cameras, genetic sequencers, semi-autonomous drones, and other technologies means that we produce a steady stream of digital data.

A data-centric technological revolution has generated great enthusiasm about the emerging potential benefits of mining electronic health records, genomic data and other biological materials, social media communications, satellite imagery and other digital datasets to identify emerging disease threats, interrupt foodborne disease outbreaks and improve collaboration among public health organizations. Drones have been hailed as a "game changer" in disease surveillance. Some have argued that drones could uniquely pinpoint an outbreak by identifying a rapid population exodus from a disease zone *(94-96)*. Others are sceptical about "drone utopianism", arguing that drone surveillance should not be a health priority for countries with limited resources *(97)*.

Other new technologies, such as phylogenetic analysis of HIV, hold similar promise and peril, involving both use and failure to use data. Individuals who generate information through personal devices are probably unaware of the range of potential subsequent uses of their data. It is unclear whether the private sector has an obligation to share those data with public health or government officials. Custodians of such data should be aware of the issues that could arise and be involved in discussions about legitimate data-sharing and the steps that should be taken to monitor risk and prevent harm.

There have been mounting calls for additional research and ethical analysis on issues related to big data *(98)*. The place of big data and digital disease detection in the public health surveillance landscape remains undetermined, and additional work should be done on privacy and anonymity, the integration of public and private data sets and issues of data validity and reliability *(99)*. The Deputy Director for Surveillance and Epidemiology at the Bill & Melinda Gates Foundation recently sounded an important call: "We need ethicists to be working on some of these problems."

In order to remain proactive rather than reactive, addressing these issues must represent the next frontier. While these guidelines are a place to start in addressing issues at the intersection of surveillance and big data, the challenges of this swiftly changing environment should be subject to continuing analysis and ethical monitoring. This challenge must be taken up by the global community.

Sphere and continents with binary code zero – one.
Source: CC0 Public Domain

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99. Vayena E, Salathe M, Madoff LC, Brownstein JS. Ethical challenges of big data in public health. PLoS Comput Biol 2015;11:e1003904.

- What is the ethical obligation to undertake public health surveillance?
- What are the risks of conducting disease surveillance? How should such risks be balanced against population level benefits?
- When and how must relevant communities be engaged in the development of surveillance plans?
- How should the confidentiality of surveillance data be protected?
- What are the ethical obligations to share relevant public health surveillance data across public health authorities? With public health researchers? With communities and individuals who have contributed to surveillance systems?
- Are there circumstances when data sharing must be strictly prohibited?
- What institutional mechanisms should be established to ensure ethical issues are systematically addressed prior to data collection, use, and dissemination?

These are core questions that those involved in public health surveillance have grappled with for more than a century. To address these and other pressing concerns an international group of experts has developed the *WHO Guidelines on Ethical Issues in Public Health Surveillance*. Based on a set of core ethical and policy considerations, these 17 guidelines establish the affirmative duties to undertake surveillance, share data, and engage communities, while recognizing the limits of surveillance. They will be applied in situations characterized by fundamental cultural, economic, and political variability. The goal, therefore, is to enable critical discussion about legitimate ethical tensions and trade-offs and the appropriate governance and oversight of surveillance.

For more information, contact:

Global Health Ethics
Department of Information, Evidence and Research
WHO, Geneva

Email: ct_ethics@who.int

ISBN 978-92-4-151265-7

From:	Ulrey, Ingrid
To:	Bissonnette, Alicia; "jbodden@wsac.org"
Cc:	Hayes, Patty; Eli Briggs
Subject:	RE: Follow up- appropriations
Date:	Thursday, February 27, 2020 1:37:51 PM
Attachments:	image001.png COVID_Response_TwoPager_022120.pdf PHSKC Federal Issues 2-pager 2020.pdf

Dear Alicia,

It was great to see you yesterday, congrats on your role in Rep. Shrier's office, what a fantastic experience.

We really appreciated spending a few minutes with the Congresswoman herself and are grateful for the work she is doing related to Coronavirus.

Here is a link to our Public Health Insider Blog:
https://publichealthinsider.com/2020/02/26/statement-on-bothell-high-school-closure/

Please subscribe to get these regularly (black box on right side) - it is a helpful channel for us to keep you up to date on COVID-19 and other key public health issues.

This entry is about today's closure of Bothell high school.

Thank you for the approps form below – I will share with our NACCHO (national association) partners.

Don't hesitate to be in touch if you have questions or need public health data / information about our region.

Thank you,

Ingrid Ulrey

Ingrid Ulrey, MPP (she/her)
Policy Director
Public Health – Seattle & King County
Phone: 206.477.7019
Ingrid.Ulrey@kingcounty.gov

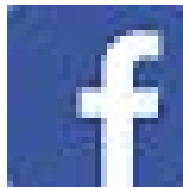
From: Bissonnette, Alicia <Alicia.Bissonnette@mail.house.gov>
Sent: Wednesday, February 26, 2020 7:49 AM
To: 'jbodden@wsac.org' <jbodden@wsac.org>
Cc: Hayes, Patty <Patty.Hayes@kingcounty.gov>; Ulrey, Ingrid <Ingrid.Ulrey@kingcounty.gov>
Subject: Follow up- appropriations

Hi ladies,

It was great just meeting with you! Seriously appreciate all your hard work on coronavirus and the myriad of other issues that have needed your response.
To that end, I'm sending you this link: https://schrier.house.gov/services/appropriation-request
This is for normative appropriations though; I took a note about the request for supplemental emergency funding.

Thanks again, and please don't hesitate to reach out if there are any questions, concerns or updates!

Alicia Bissonnette, MPA
Office of Congresswoman Kim Schrier, M.D. (WA-08)
1123 Longworth House Office Building |Washington, DC 20515
Phone: (202) 225-7761 | alicia.bissonnette@mail.house.gov
https://schrier.house.gov



NOVEL CORONAVIRUS RESPONSE

Public Health
Seattle & King County

For more information:
Ingrid Ulrey, Public Health: 206-477-7019

Local health departments play a key role in responding to novel coronavirus (COVID-19). Public Health—Seattle & King County has activated over 100 employees and volunteers, working on disease containment and pandemic preparedness.

500+ people monitored by King County for potential symptoms, with new people added each day

Approximately **$200,000 per week** spent on response efforts

DISEASE INVESTIGATION

- Assessing possible cases for testing
- Tracing contacts of people under investigation for possible coronavirus
- Monitoring people in quarantine
- Providing wrap-around services—from groceries to behavioral health—to support people in quarantine and isolation

COMMUNITY OUTREACH

Anti-stigma community event & press conference

- Addressing and preventing stigma with community partners, including through our online anti-stigma toolkit: kingcounty.gov/ncov/anti-stigma
- Providing guidance on prevention and pandemic planning to schools, colleges/universities, childcare providers, employers and community organizations
- Creating and maintaining COVID-19 website: kingcounty.gov/COVID

MULTIAGENCY COORDINATION

- Collaborating with experts from the CDC and colleagues at Washington Department of Health
- Providing health advisories and guidance to King County healthcare providers regarding screening, identification, testing and infection control measures related to COVID
- Monitoring healthcare system supply shortages and helping ensure healthcare readiness

Gov. Inslee, Executive Constantine and Director Hayes brief staff

RECENT NEWS COVERAGE

Washington Post, 2/20/20:

"We **still don't have a good understanding of the risk** posed by people who are infected but without symptoms," said Dr. Jeff Duchin, Health Officer.

Wall Street Journal, 2/19/20:

"**The amount of manpower, both resources and time, has been tremendous**, and so what that means is that our existing staff are working two jobs around the clock for several weeks," said Dr. Duchin

Associated Press, 2/14/20:

In Seattle, **public health workers buy groceries** to make sure the people stay comfortable while in home quarantine. The health department workers make sure people have Wi-Fi. They arrange calls with counselors for those with anxiety.

Route Fifty, 2/8/20:

Across King County, health officials have heard reports of Asian-American residents being yelled at in the streets for not wearing masks and patients of Asian descent having their medical care delayed because doctors assumed their symptoms pointed to coronavirus.

King County held a media event to bring together business and community to debunk stereotypes, discourage discrimination and discuss ways to respond appropriately to the health threat.

Public Health – Seattle & King County

"Protecting and Improving the health and well-being of King County"

Public Health – Seattle & King County (PHSKC) is the largest health jurisdiction in Washington State and the 13th largest in the U.S. We serve a rapidly growing population of over 2 million people. Our residents represent over 41% of Washington's population growth. One in five families speak a language other than English at home.

Providing services in a large, metro environment means that we often have complex needs and greater system challenges in delivering care. Federal under-investment and strained local and state budgets have resulted in many essential public health services being underfunded – including critical services such as communicable disease control, chronic disease / injury prevention, and emergency preparedness. Sustainable federal partnership is critical to protecting the health of our communities and workforce.

2020 Federal Priorities:

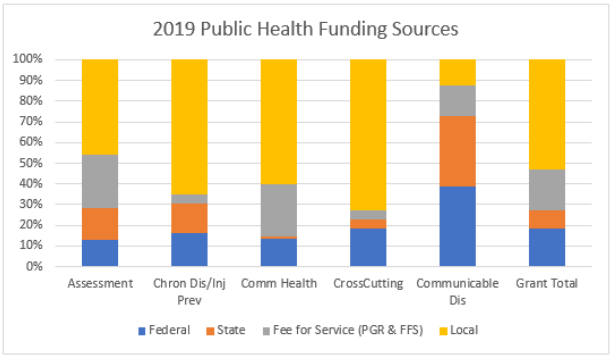
- Emergency funding for COVID-19 response
- Increase CDC funding 22% by 2022
- Protect and defend the ACA
- End the HIV Epidemic

Examples of how we put federal dollars to work:

- Opioid crisis response
- Chronic disease and injury prevention
- Immunization campaigns
- Maternal and child health
- Healthcare for homeless
- Communicable disease prevention and treatment (HIV, Hep A, Hep C, TB)
- Emergency preparedness

Funding Snapshot

Federal funding represents nearly 20% of the overall funding for our local health department and is the major source of funding for key programs.

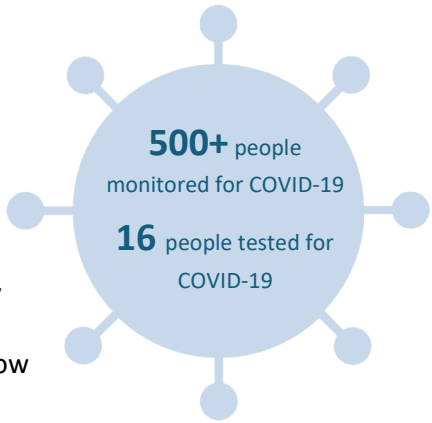


Critical federal funding streams include Medicaid, preparedness funding, the Public Health and Prevention Fund and HRSA Ryan White funding. Additional sources of funding include state and local dollars, fees and grants.

Federal Investment Success

Emergency Preparedness

CDC funding supports PHSKC in promoting and ensuring the health and safety of the whole community before, during and after emergencies and disasters. Our department is now fully activated in response to the novel coronavirus (COVID-19). This surge in activity — which includes monitoring, testing, arranging for and supporting people in for quarantine, coordinating with the health care system and communicating with community partners — is costing our department approximately $200,000 per week. Diverting staff away from other important projects to cover this work is not sustainable. It is critical that we have the resources to prevent and plan now rather than wait until the problem worsens.



> *Emergency supplemental funding and assurance that state and local health departments will be fully reimbursed for necessary activities are urgently needed to support our local response to COVID-19.*

Progress on HIV/AIDs

King County was one of the first counties in the United States to reach the ambitious "90-90-90" goal set by the WHO – whereby 90% of persons with HIV know their HIV-status, at least 90% of persons diagnosed with HIV are receiving medical care and 90% of those in care are virally suppressed. Now, a significant increase in cases among people who are living homeless and who inject or use illicit drugs is challenging us to hold the line on this success. Through our walk-in clinics and mobile street medicine models, we are continuously innovating to provide low-barrier, whole person care for hard-to-reach populations.

> *To successfully implement "Ending the HIV Epidemic in America" - heavily impacted communities such as Seattle-King County need full funding and flexibility for how we put these resources to work.*

Health Care Access

Because of the Affordable Care Act (ACA) more people than ever in our community have health insurance. In Washington state, we have reduced the rate of uninsured by half. Yet, nearly 500,000 people remain uninsured. To address this, our health department is supporting state-level innovations to address affordability by reducing out of pocket costs; and to improve access for people who are not eligible for federal subsidies or public insurance programs.

> *Changes to the public charge test and efforts to undermine the ACA are making it more difficult for communities such as ours to ensure access to care and protect overall population health.*

Opioid Crisis Response and Communicable Disease Prevention

CDC funds are bolstering our capacity to fight the opioid crisis by expanding access to medication for opioid use disorder and overdose reversal, and educating the community about the risk of fentanyl hidden in counterfeit pills. Also with funding from CDC, King County tripled the number of patients screened for Hepatitis C and doubled the number of patients diagnosed, resulting in a more than tenfold increase in the number of patients treated for HCV. Finally, the recent Measles and Hepatitis A outbreaks in our state remind us of how critical CDC's Immunization Program is to support our distribution of life-saving vaccines.

> *To sustain this success, we support the "22% by 2022" cross-sector appeal to increase CDC funding by 22 percent by fiscal year 2022.*

Eliminating Health Inequities

Low-income people of color in our community are more likely to die from gun violence, suicide and drug overdose than their white counterparts, and they experience the highest rates of chronic disease. We use data analysis to identify these disparities and target resources to communities who need them most. For example, with support from a CDC Racial Ethnic Approaches to Community Health (REACH) grant we are working with partners to increase access to healthy foods, create active living environments and establish effective community-clinical linkages for African-American, African-born and Asian-American communities.

> *Support for REACH, for gun violence research and for key policies such as banning flavored e-cigarettes are all critical to achieving health equity.*

Contact: Ingrid Ulrey, Policy Director, (206) 477-7019, Ingrid.Ulrey@kingcounty.gov
Public Health – Seattle & King County | 401 5th Avenue, Seattle, WA 98104

From: Carter Mecher
To: LeDuc, James W.; Duchin, Jeff
Subject: RE: Red Dawn Breaking Bad, Start Feb 24
Date: Saturday, February 29, 2020 2:17:16 PM
Attachments: E98E8E2F9E8E46BBA4900AC48D861D54.png
86AB993EDB2744F88E0489FD2C6ED65F.png
image001.png

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Just heard from Dan Hanfling that Jeff isn't seeing anything unusual.

Sent from Mail for Windows 10

From: LeDuc, James W.
Sent: Saturday, February 29, 2020 4:10 PM
To: Duchin, Jeff
Cc: Carter Mecher
Subject: FW: Red Dawn Breaking Bad, Start Feb 24

Sorry, had wrong email

From: LeDuc, James W.
Sent: Saturday, February 29, 2020 3:08 PM
To: Carter Mecher <cmecher@charter.net>
Cc: Jeff Duchin (Jeff.Duchin@METROKC.GOV) <Jeff.Duchin@METROKC.GOV>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Contacting Jeff Duchin.

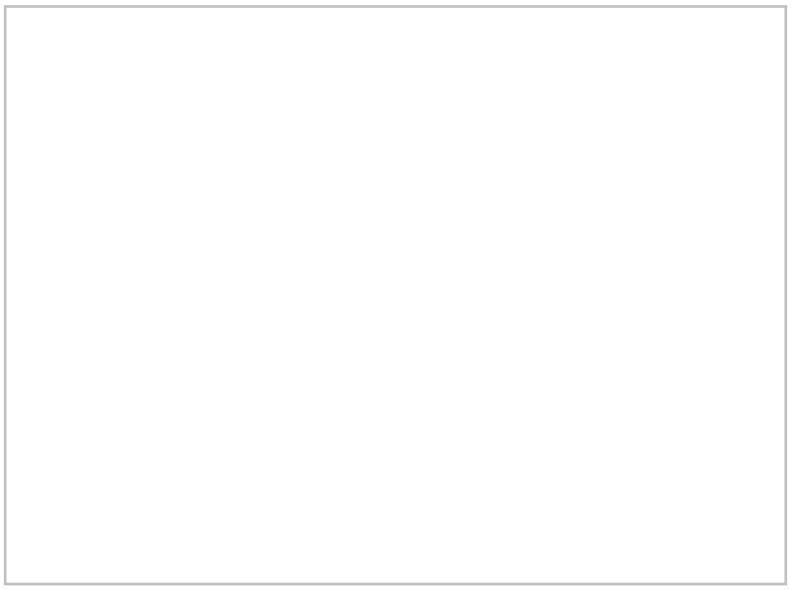
Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) 409-789-2012

From: Carter Mecher <cmecher@charter.net>
Sent: Saturday, February 29, 2020 2:09 PM
To: Dr. Eva K Lee <evalee-gatech@pm.me>
Cc: Lawler, James V <james.lawler@unmc.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Caneva, Duane <duane.caneva@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Tom Bossert <tom.bossert@me.com>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; LeDuc, James W. <jwleduc@UTMB.EDU>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Fantinato, Jessica - OHS, Washington, DC <jessica.fantinato@usda.gov>; Colby, Michelle - OHS, Washington, DC <michelle.colby@usda.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

WARNING: This email originated from outside of UTMB's email system. Do not click links or open attachments unless you recognize the sender and know the content is safe.

I am also concerned about Seattle (Kings County). Charity, do you have contacts there? Or could someone reach out to Jeff Duchin from CDC or HHS?
https://www.kingcounty.gov/depts/health/communicable-diseases/disease-control/~/media/depts/health/communicable-diseases/documents/influenza/2020/week-08.ashx
This is week 8 data (so recent data). Compare the 3 graphs. Seeing a mismatch between pathogens by PCR (going down) and syndromic surveillance (flat). Also looking at ED visits and seeing an upward trend in school age kids (ages 5-17) and 45-64 year olds. Something doesn't sit right with me.



Sent from Mail for Windows 10

From: Carter Mecher
Sent: Saturday, February 29, 2020 2:58 PM
To: Dr. Eva K Lee
Cc: Lawler, James V; Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Charity, do you have any contacts in Hawaii? Would really be interested in Week 8 data.

I remember a story of a couple from Japan who were symptomatic while visiting Hawaii and were confirmed to have COVID upon their return to Japan.
https://bigislandnow.com/2020/02/17/53-self-monitor-for-coronavirus-in-hawaii-after-visiting-japanese-couple-tests-positive/

My understanding is that Hawaii did not perform testing on anyone (just monitored some contacts from symptoms).

I went to Hawaii's flu surveillance (their latest data is from week 7). My concern is the continued rise in ILI, despite a drop off in influenza in the lab.
https://health.hawaii.gov/docd/files/2018/03/FLU_Influenza_Surveillance.pdf

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Saturday, February 29, 2020 1:15 PM
To: Carter Mecher
Cc: Lawler, James V; Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: Re: Red Dawn Breaking Bad, Start Feb 24

Oops. I mixed up the order. It should be -
From travelers: Washington, Illinois, California, Arizona, MA, Wisconsin, Oregon
Unknown origin: California, Oregon, Washington

I did a quick analysis on strategic screening, if we have enough testing power, I would suggest community testing strategically in California, Chicago/Illinois, Oregon, Washington, Boston, Atlanta, New York. It would be great if we can cover more. We have to go beyond contact tracing. It is also good to cover some universities.

evalee-gatech@pm.me
https://newton.isye.gatech.edu/DrLee/
mobile: 404-432-6835

Sent with ProtonMail Secure Email.

------- Original Message -------
On Friday, February 28, 2020 7:55 PM, Dr. Eva K Lee <evalee-gatech@pm.me> wrote:

> Yes, good for them to ask.
>
> It will be good to know how many are under observation and self quarantine also. Chicago is the first city with the confirmed COVID-19 case in US (from a returning traveler). I have forward the Kaiser data to Ncal and Jeff. See if they have an answer. I don't know if I can see the Ncal data on their EPIC system. I will see.
>
> ------- Original Message -------
> On Friday, February 28, 2020 7:49 PM, Carter Mecher <cmecher@charter.net> wrote:
>
> > Need someone from HHS or CDC to pick up the phone and reach out to public health in Chicago. I would also reach out to Kaiser in Northern California. How are they explaining this?
> >
> > Sent from my iPhone
> >
> > On Feb 28, 2020, at 6:57 PM, Lawler, James V <james.lawler@unmc.edu> wrote:
> >
> > Great pick up Carter. How can we confirm? In the absence of diagnostics, I would take an abnormal uptick in ILI syndromic data as a trigger for NPI.
> >
> > **James Lawler, MD, MPH, FIDSA**
> >
> > m: 703.407.6431
> >
> > james.lawler@unmc.edu
> >
> > ---
> >
> > **From:** Carter Mecher <cmecher@charter.net>
> > **Date:** Friday, February 28, 2020 at 3:37 PM
> > **To:** Tracey McNamara <tmcNamara@westernu.edu>, "Baric, Ralph S" <rbaric@email.unc.edu>, "Caneva, Duane" <duane.caneva@hq.dhs.gov>, Richard Hatchett <richard.hatchett@cepi.net>, "Dr. Eva K Lee" <evalee-gatech@pm.me>
> > **Cc:** Tom Bossert <tom.bossert@me.com>, "Martin, Gregory J" <MartinGJ@state.gov>, "Walters, William" <WaltersWA2@state.gov>,

"HAMILTON, CAMERON" <cameron.hamilton@hq.dhs.gov>, "rjglassjr@gmail.com" <rjglassjr@gmail.com>, "Dodgen, Daniel (OS/ASPR/SPPR)" <Daniel.Dodgen@hhs.gov>, "DeBord, Kristin (OS/ASPR/SPPR)" <Kristin.DeBord@hhs.gov>, "Phillips, Sally (OS/ASPR/SPPR)" <Sally.Phillips@hhs.gov>, David Marcozzi <DMarcozzi@som.umaryland.edu>, "Hepburn, Matthew J CIV USARMY (USA)" <matthew.j.hepburn.civ@mail.mil>, Lisa Koonin <lkoonin1@gmail.com>, "HARVEY, MELISSA" <melissa.harvey@hq.dhs.gov>, "WOLFE, HERBERT" <HERBERT.WOLFE@hq.dhs.gov>, "Eastman, Alexander" <alexander.eastman@hq.dhs.gov>, "EVANS, MARIEFRED" <mariefred.evans@associates.hq.dhs.gov>, "Callahan, m." <MVCALLAHAN@mgh.harvard.edu>, "jwleduc@UTMB.EDU" <jwleduc@utmb.edu>, "Johnson, Robert (OS/ASPR/BARDA)" <Robert.Johnson@hhs.gov>, "Yeskey, Kevin" <kevin.yeskey@hhs.gov>, "Disbrow, Gary (OS/ASPR/BARDA)" <Gary.Disbrow@hhs.gov>, "Redd, John (OS/ASPR/SPPR)" <John.Redd@hhs.gov>, "Hassell, David (Chris) (OS/ASPR/IO)" <David.Hassell@hhs.gov>, "Hamel, Joseph (OS/ASPR/IO)" <Joseph.Hamel@hhs.gov>, "Dean, Charity A@CDPH" <Charity.Dean@cdph.ca.gov>, "Lawler, James V" <james.lawler@unmc.edu>, "Borio, Luciana" <LBorio@iqt.org>, Dan Hanfling <DHanfling@iqt.org>, "eric.mcdonald@sdcounty.ca.gov" <eric.mcdonald@sdcounty.ca.gov>, "Wade, David" <david.wade@hq.dhs.gov>, "TARANTINO, DAVID A" <david.a.tarantino@cbp.dhs.gov>, "WILKINSON, THOMAS" <THOMAS.WILKINSON@hq.dhs.gov>, "david.gruber@dshs.texas.gov" <david.gruber@dshs.texas.gov>, "KAUSHIK, SANGEETA" <sangeeta.kaushik@hq.dhs.gov>, Nathaniel Hupert <nah2005@med.cornell.edu>, "Lee, Scott" <Scott.Lee@hhs.gov>, "Padget, Larry G" <PadgetLG@state.gov>, Ryan Morhard <Ryan.Morhard@weforum.org>, "Stack, Steven J (CHFS DPH)" <steven.stack@ky.gov>, "Adams, Jerome (HHS/OASH)" <Jerome.Adams@hhs.gov>, "Fantinato, Jessica - OHS, Washington, DC" <jessica.fantinato@usda.gov>, "Colby, Michelle - OHS, Washington, DC" <michelle.colby@usda.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Non-UNMC email

A couple updates. Noticed that CDC increased the number of confirmed cases of Americans n the US from the cruise ship from 42 to 44.

Looked at ILI for NYC and TX. ILI is trending down. Only odd thing I noticed besides the Kaiser Northern California ILI data on hospitalizations and the data from Chicago below (the ER ESSENCE data %of ER visits for ILI).Instead of falling, it actually increased slightly.

<image001.png>

<image002.png>

National ILI data shows it trending down (down to 5.5%).

<image003.gif>

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher
Sent: Friday, February 28, 2020 11:52 AM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans VetPop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%
70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	**100%**	**3,672**	**100%**	**19,209,704**	**100%**

The Veteran population is similar to the cruise population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the crew ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported to be in serious condition (5%).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	VHA Total
Operating Beds Hospital	15,744
Operating Beds Medicine/Surgery	9,817
Operating Beds ICU	1,692
ADC Hospital	9,805
ADC Medicine/Surgery	6,225
ADC ICU	1,101
ADC On a Ventilator	240
Daily Hospital Admissions	1,641
Daily Admissions Medicine/Surgery	1,226
Daily Admissions/Transfers in ICU	389
Emergency Department Care	
Daily ER Visits	6,874
Outpatient Care (non-ER)	
Daily Clinic Visits	209,336

Annually, VA has:

- 450,000 acute (medical/surgical) admissions
- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who use VA services), we can assume that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 63,000 ICU admissions.

Over an average 3 month period, VA would have ~625,000 ER/Urgent care visits, 112,000 acute care admissions, and 35,000 ICU admissions.

Now you understand the challenge.

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tested
11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		1,219 tested; 73 asymptomatic
	329 American evacuated from cruise ship (14 of the evacuees found to be			

16-Feb	+) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,723 tested; 19 seriously ill
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,066 tested; 28 seriously ill; 322 asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,894 tested; 35 seriously ill; 380 asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

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Sent: Friday, February 28, 2020 9:26 AM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

I think this data is close enough to convince people that this is going to be bad and we will need to pull the full array of Nis (TLC). All that is left is when (timing).

I went back to our comparison of Philadelphia and St. Louis in 1918. The difference between Philadelphia and St. Louis in terms when they pulled the trigger on NPIs was about two weeks during the course of their individual outbreaks.

In St. Louis, NPIs were put in place 1 week after the first cases at Jefferson Barracks, 5 days after the first death, and 3 days after the first civilian cases in St. Louis. In Philadelphia, NPIs were put in place 3 weeks after the first cases at the Navy Yard, 16 days after the first civilian cases in Philadelphia, 2 weeks after the first death. In the cases of NPIs, timing matters.

We would estimate that the outbreak in Wuhan had about a 2 week head start on the rest of Hubei. So the measures China implemented to slow transmission happened about two later in the course of the outbreak in Wuhan compared to the rest of Hubei Province. That comparison looks a lot like Philadelphia and St. Louis.

So we have a relatively narrow window and we are flying blind.

Looks like Italy missed it.

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To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee

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This might be of interest. A comparison I ran of the distribution of the US population by age group compared to the passengers and crew aboard the Diamond Princess (surprised nobody ever did this). Except for kids, the cruise ship data tells a lot about adults (really shifted toward the 60-80 year old group).

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution
0-9 years	40,243,098	12%	16	0%
10-19 years	41,910,114	13%	23	1%
20-29 years	45,489,095	14%	347	9%
30-39 years	43,204,209	13%	428	12%
40-49 years	40,617,231	12%	334	9%
50-59 years	43,409,050	13%	398	11%
60-69 years	36,824,083	11%	923	25%
70-79 years	21,588,326	7%	1,015	27%
>80 years	12,433,972	4%	227	6%
Total population	**325,719,178**	**100%**	**3,711**	**100%**

Here is how the distributions compare when I only look at age≥20 (essentially adults)

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution
20-29 years	45,489,095	19%	347	9%
30-39 years	43,204,209	18%	428	12%
40-49 years	40,617,231	17%	334	9%
50-59 years	43,409,050	18%	398	11%
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70-79 years	21,588,326	9%	1,015	27%
>80 years	12,433,972	5%	227	6%
Total population	243,565,966	**100%**	**3,672**	**100%**

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Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Updated tables

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
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	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
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24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,894 tested; 35 seriously ill; 380 asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 deaths reported in Japan	751	6	

Country	Passengers/Crew	Cases Hospitalized in Japan	Cases Confirmed upon Repatriation	Total Confirmed Cases	ICU Admissions	Deaths	% Infected
US	434	44	42	86			20%
Hong Kong	364	55	4	59			16%
Canada	256	47		47			18%
Australia	241	47	8	55			23%
UK	78	6	4	10		1	13%
Italy	35						
South Korea	14						
Israel	11	3	2	5			45%
Japan						5	
Subtotal	1,433	202	60	262			
Total	**3,711**	**691**	**60**	**751**		**6**	**20%**

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Japan just announce a sixth passenger on the cruise ship has died (British passenger).

So 6/751 = 0.8% CFR This is now the new lower limit of CFR.

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Japan announced fifth death of Diamond Princess passenger (70 year old woman). CFR for infected passengers is now 0.67% (this represents the lower limit of CFR). Below are the latest numbers I have (had to make a correction when I learned that the 705 total cases reported by Japan also included the 14 confirmed cases in Americans who were evacuated but not the cases that have appeared in the remaining citizens from the US (28), Australia (8), Hong Kong (4), UK (4), and Israel (2) after they were evacuated.

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Subtotal	1,433	202	60	262			
Total	**3,711**	**691**	**60**	**751**			**20%**

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Watching for ILI data for Chicago, NYC, CA, and TX (covering most of the Tier 1 UASI cities that encompass ~25% of the US population). CA posted Week 8 data tonight (others should be available tomorrow).

Here is the CA report

https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/Immunization/Week2019-2008_FINALReport.pdf [cdph.ca.gov]

Flu activity is decreasing, so watching for anything unusual in the decline in ILI (something displacing flu). Data from Kaiser Northern California is interesting that percent P&I admissions going up with decreasing flu activity. Charity, does Kaiser also follow P&I for outpatient clinics?

Week 7

Week 8

Week 7

Week 8

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Have you seen this? Israel claims they will have an oral vaccine in 3 weeks

Tracey

https://www.jpost.com/HEALTH-SCIENCE/Israeli-scientists-In-three-weeks-we-will-have-coronavirus-vaccine-619101 [jpost.com]

From: Baric, Ralph S <rbaric@email.unc.edu>
Sent: Thursday, February 27, 2020 6:55 PM

To: Caneva, Duane <duane.caneva@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Dr. Eva K Lee <evalee-gatech@pm.me>; Carter Mecher <cmecher@charter.net>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Tom Bossert <tom.bossert@me.com>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Fantinato, Jessica - OHS, Washington, DC <jessica.fantinato@usda.gov>; Colby, Michelle - OHS, Washington, DC <michelle.colby@usda.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

A comment: Pangolins are not the animal reservoir. Pangolin -CoV-2020 virus is only 90% identical to SARS-CoV2 while SARS-CoV-2 and bat-CoV-RaTG13 is 96% identical. The paper concludes its not a reservoir…"Although this present study does not support pangolins would be an intermediate host for the emergence of the 2019-nCoV……" at this moment, the most likely origins are bats, and I note that it is a mistake to assume that an intermediate species is needed. ralph

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From: Caneva, Duane <duane.caneva@hq.dhs.gov>
Sent: Thursday, February 27, 2020 4:20 PM
To: Richard Hatchett <richard.hatchett@cepi.net>; Dr. Eva K Lee <evalee-gatech@pm.me>; Carter Mecher <cmecher@charter.net>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Tom Bossert <tom.bossert@me.com>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; Baric, Ralph S <rbaric@email.unc.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Fantinato, Jessica - OHS, Washington, DC <jessica.fantinato@usda.gov>; Colby, Michelle - OHS, Washington, DC <michelle.colby@usda.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Updated Master Question List.

Best,

Duane

From: Caneva, Duane
Sent: Thursday, February 27, 2020 4:15 PM
To: Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Additional information sources:

Forwarding information from one of our BAH team members, Sumiko Mekaru, PhD, who has been working with colleagues at Harvard/BCH, Oxford, and Northeastern to develop a centralized repository of individual-level information on patients with laboratory-confirmed COVID-19 to include a map/data explorer visualization tool. This information is publicly available with credit to be given to the Open COVID-19 Data Curation Group on any publications/communications. Please feel free to disseminate further to anyone interested. If you have any questions, feel free to reach out. Thank you!

Map/Data Explorer: https://scarpino.shinyapps.io/Emergent_Epidemics_Lab_nCoV2019/ [scarpino.shinyapps.io]

Link to Linelist: https://docs.google.com/spreadsheets/d/1itaohdPiAeniCXNlntNztZ_oRvjh0HsGuJXUJWET008/edit#gid=0 [docs.google.com]

Twitter Update Notifications: https://twitter.com/svscarpino/status/1230330483319484417 [twitter.com], https://twitter.com/MOUGK [twitter.com]

Summary (https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30119-5/fulltext [thelancet.com])

- Coronavirus disease 2019 (COVID-19) is spreading rapidly across China, and as of Feb 16, 2020, had

been reported in 26 countries globally. The availability of accurate and robust epidemiological, clinical, and laboratory data early in an epidemic is important to guide public health decision-making.1

- Consistent recording of epidemiological information is important to understand transmissibility, risk of geographic spread, routes of transmission, and risk factors for infection, and to provide the baseline for epidemiological modelling that can inform planning of response and containment efforts to reduce the burden of disease. Furthermore, detailed information provided in real time is crucial for deciding where to prioritise surveillance.
- Line list data are rarely available openly in real time during outbreaks. However, they enable a multiplicity of analyses to be undertaken by different groups, using various models and assumptions, which can help build consensus on robust inference. Parallels exist between this and the open sharing of genomic data.2

- We have built a centralised repository of individual-level information on patients with laboratory-confirmed COVID-19 (in China, confirmed by detection of virus nucleic acid at the City and Provincial Centers for Disease Control and Prevention), including their travel history, location (highest resolution available and corresponding latitude and longitude), symptoms, and reported onset dates, as well as confirmation dates and basic demographics. Information is collated from a variety of sources, including official reports from WHO, Ministries of Health, and Chinese local, provincial, and national health authorities. If additional data are available from reliable online reports, they are included. Data are available openly and are updated on a regular basis (around twice a day).

- We hope these data continue to be used to build evidence for planning, modelling, and epidemiological studies to better inform the public, policy makers, and international organizations and funders as to where and how to improve surveillance, response efforts, and delivery of resources, which are crucial factors in containing the COVID-19 epidemic.

- The epidemic is unfolding rapidly and reports are outdated quickly, so it will be necessary to build computational infrastructure that can handle the large expected increase in case reports. Data sharing will be vital to evaluate and maintain accurate reporting of cases during this outbreak.3

From: Richard Hatchett <richard.hatchett@cepi.net>
Sent: Thursday, February 27, 2020 1:29 PM
To: Dr. Eva K Lee <evalee-gatech@pm.me>; Carter Mecher <cmecher@charter.net>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Tom Bossert <tom.bossert@me.com>; Caneva, Duane <duane.caneva@hq.dhs.gov>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <herbert.wolfe@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <thomas.wilkinson@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Excellent editorial from Jeremy Farrar about the near-term funding requirement:

https://wellcome.ac.uk/news/global-institutions-must-act-urgently-and-decisively-tackle-covid-19 [wellcome.ac.uk]

UK Chief Medical Officer Chris Whitty providing forewarning that schools may need to close for as long as two months:

Chief medical officer: schools could shut for two months in event of pandemic

Chris Whitty has been speaking about measures to reduce risk in the event that coronavirus outbreak reaches pandemic proportions. While noting that such an outcome was just one possibility, he said that there could be a

"social cost" if the virus intensifies seeing mass gatherings reduced and schools closed for more than two months.

He said:

One of the things that's really clear with this virus, much more so than flu, is that anything we do we're going to have to do for quite a long period of time, probably more than two months.

"The implications of that are non-trivial, so we need to think that through carefully.

"This is something we face as really quite a serious problem for society potentially if this goes out of control. It may not but if it does globally then we may have to face that."

Whitty also said that the UK would inevitably be affected in the event of a global epidemic.

If this becomes a global epidemic then the UK will get it, and if it does not become a global epidemic the UK is perfectly capable of containing and getting rid of individual cases leading to onward transmission.

"If it is something which is containable, the UK can contain it. If it is not containable, it will be non-containable everywhere and then it is coming our way."

https://www.theguardian.com/world/live/2020/feb/27/coronavirus-news-live-updates#block-5e57f5698f086a28115b3d8d [theguardian.com]

From: Dr. Eva K Lee <evalee-gatech@pm.me>
Sent: 27 February 2020 17:38
To: Carter Mecher <cmecher@charter.net>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Tom Bossert <tom.bossert@me.com>; Caneva, Duane <duane.caneva@hq.dhs.gov>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

All schools close in Hong Kong until mid April. They are quarantining a huge group of people entering from China, in separate apartment complex.

Colleagues in UK told me that their schools are on the verge of closing also.

evalee-gatech@pm.me

https://newton.isye.gatech.edu/DrLee/ [newton.isye.gatech.edu]

mobile: 404-432-6835

Sent with ProtonMail [protonmail.com] Secure Email.

------- Original Message -------

On Thursday, February 27, 2020 12:14 PM, Carter Mecher <cmecher@charter.net> wrote:

Japan

All schools told to be closed until April: https://www.japantimes.co.jp/news/20.../#.XlelKkNryik [japantimes.co.jp]

Prime Minister Abe at the government's headquarters opened shortly after 6:00 pm on March 27, and temporarily closed all elementary schools, junior high schools, and high schools nationwide from March 2 until spring break.

Prime Minister Abe noted that temporary closure of elementary and junior high schools has been taken in Hokkaido and Ichikawa City, Chiba Prefecture, and said, "Efforts have been made to prevent the spread of infection to children in each region. But the last couple of weeks is a very important time. "

He said, "First and foremost, put children's health and safety first, and prepare in advance for the risk of large-scale infection caused by many children and teachers gathering for long hours on a daily basis." He stated that all elementary schools, junior high schools, high schools and special needs schools should be closed temporarily until spring break

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Thursday, February 27, 2020 6:17 AM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

About time for Japan (was wondering what they were waiting for to pull this trigger)

Japan's Prime Minister Abe asks schools across the country to be closed from Monday to prevent the spread of coronavirus

Hope we are paying attention in the US and especially California.

Even NK is closing schools

North Korea postpones the opening of schools to prevent an outbreak of coronavirus

Add a few more countries to the list:

- Denmark
- Estonia
- Norway
- Romania

The outbreaks in Italy and Iran are much larger than many realize by evidence of the numbers of confirmed cases in international travelers from those areas. Cases in travelers from Italy have present in Israel, England, Denmark and Brazil. Need a pretty large outbreak for that to happen—much larger than the numbers reported.

Iran now reporting 245 cases and 26 deaths. Given the confirmed case in Canada of a traveler from Iran and the time from disease onset to death, this is already a well established and large outbreak in Iran.

Italy and Iran are about where Wuhan was 1 month ago. In a couple of weeks Wuhan was overwhelmed.

Here are some snippets re cases of travelers from Italy:

- Israel confirms 1 new case of coronavirus; an Israeli citizen who recently came back from Italy
- 2 new cases confirmed in England, UK; one of them came back from Italy and the other from Tenerife, Spain
- Denmark's TV2 says one of its reporters has tested positive for coronavirus after going on holiday in northern Italy. He developed symptoms on Wednesday morning.
- The patient is a 61-year-old man in São Paulo. He was in northern Italy from February 9 until February 21.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Thursday, February 27, 2020 5:24 AM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Looked at the age specific data from the cruise ship (focusing on ages <20). Although the numbers are small, the prevalence of disease in school age kids (ages 10-19) is similar to the elderly.

What also caught my eye was the data for young adults (ages 20-49). Since this data is for the entire ship, I suspect that most in this age group are crew. Only 8% of this age group was confirmed to have infection. The total confirmed cases in this analysis was only 619 (we are now up to 744), so perhaps they have since caught up.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Thursday, February 27, 2020 5:00 AM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Details below on case in California. From the cruise ship data we would estimate there are 20-50 cases for each ICY admission (assuming ICU admissions in 2%-5% of cases). That ratio was for an aged population. Suspect that ratio might be higher for a general population. And given the time from disease onset to being on a ventilator for at least a week (since at least Feb 19 when the patient arrived at UC Davis), the outbreak has had a good head start. That would suggest we already have a significant outbreak and are well behind the curve. We are now well past the equivalent 5:45 moment at Mann Gulch. You can't outrun it. They need to be thinking NPIs locally (full TLC including school closure).

[I will send something I was looking at re the cruise ship data and kids.]

https://www.sacbee.com/news/local/article240682311.html [sacbee.com]

Latest: Coronavirus patient at UC Davis Medical Center since Feb. 19 wasn't tested for days

The Solano County resident who is the nation's first confirmed case of coronavirus from "exposure in the community" has been under the care of UC Davis Medical Center for a week [sacbee.com], according to an internal memo obtained Wednesday night by The Sacramento Bee.

Just before 10 p.m., the hospital published the memo that was sent to employees by UC Davis Health leaders earlier in the day [ucdavis.edu] and outlines the timeline of the patient's admission and disclosed that several employees who were exposed to the patient self-isolate at home "out of abundance of caution."

The patient, whom the U.S. Centers for Disease Control and Prevention confirmed has tested positive the COVID-19 strain, was moved to the Sacramento teaching hospital on Feb. 19, according to the memo sent to staffers by David Lubarsky, the head of the hospital and UC Davis Health's vice chancellor of human health services, and Brad Simmons, the health system's interim CEO.

The patient was transferred to the facility from another hospital, where a medical team had already put the patient on a ventilator.

"The individual is a resident of Solano County and is receiving medical care in Sacramento County. The individual had no known exposure to the virus through travel or close contact with a known infected individual," California Department of Public Health officials said in a news release.

Because physicians at the first hospital suspected the patient had a virus, they issued an order that health care workers should wear personal protective gear when with the patient to guard against exposure to droplets, said the memo, which was first reported by the Davis Enterprise newspaper [davisenterprise.com].

The UCD medical team used the proper infection protocols out of concern that the individual might have coronavirus, according to the memo, and upon the patient's admission, UCD physicians requested that public health officials perform a test to determine whether the person had COVID-19.

"We requested COVID-19 testing by the CDC, since neither Sacramento County nor CDPH is doing testing for coronavirus at this time," the memo says. "Since the patient did not fit the existing CDC criteria for COVID-19, a test was not immediately administered. UC Davis Health does not control the testing process."

On Sunday, the CDC ordered a coronavirus test on the patient, and UC Davis Health officials discovered Wednesday that the patient tested positive for the deadly respiratory illness that causes coughing, fever and shortness of breath. That prompted hospital officials to tell "a small number" of hospital workers to stay home and monitor themselves for possible infection.

"Just as when a health care worker has a small chance of exposure to other illnesses, such as TB or pertussis, we are following standard CDC protocols for determination of exposure and surveillance," the memo said. "So, out of an abundance of caution, in order to assure the health and safety of our employees, we are asking a small number of employees to stay home and monitor their temperature."

"We are handling this in the same way we manage other diseases that require airborne precautions and monitoring," the memo said, adding hospital officials are "in constant communication with the state health department and the CDC and Sacramento County Public Health about the optimal management of this patient and possible employee exposures."

UCD officials did not respond to The Bee's request for comment.

The memo ended: "We are dedicated to providing the best care possible for this patient and continuing to protect the health of our employees who care for them."

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 9:45 PM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Some updates.

Singapore and Hong Kong continue to hold the line.

Singapore (+2 case) 93 cases/0 deaths /7 in ICU (still 4 kids—none currently hospitalized/2 were asymptomatic

Hong Kong (+6) 91 cases/2 deaths/ 4 critical; 2 serious (1 kid age 16)

Japan 189 cases/3 deaths/13 serious

Explosive growth in South Korea, Italy, and Iran

South Korea 1,596 cases/13 deaths/13 serious; 5 critical

Italy 453 cases/12 deaths

Iran 139 cases/19 deaths

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Sent: Wednesday, February 26, 2020 9:29 PM

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Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Update Hubei & Wuhan Hospitalizations per 100,000. Hubei curve is plateauing.

	Hubei 2019-nCoV Confirmed Hospital Data							Hubei and Wuhan Cases & Hospitalization Rates				
Date	Total Current Inpatients	Mild Disease	Severely Ill	Critically Ill	Cum Discharges	Cum Deaths	Cum Inpatients	Hubei Cum cases	Wuhan Cases	Hubei Cum Hospitalization Rate per 100,000	Wuhan Cum Hospitalization Rate per 100,000	%Hubei Cases Hospitalized
1/14/20	6		6				6	41	41	0.01	0.5	
1/15/20	5		5			2	7	41	41	0.01	0.5	
1/16/20	5		5			2	7	45	45	0.01	0.5	
1/17/20	8		8			2	10	62	62	0.02	0.7	
1/18/20	136	100	33	3		3	139	121	121	0.2	1.4	
1/19/20	170	126	35	9		4	174	198	198	0.3	2.4	
1/20/20	239	176	51	12		7	246	270	258	0.4	3.1	
1/21/20						15		375	320	0.0	3.8	
1/22/20	399	304	71	24		17	416	444	390	0.7	4.7	
1/23/20	494	365	106	23	31	24	549	549	495	0.9	5.9	100%

1/24/20	658	472	129	57	32	39	729	729	572	1.2	6.8	100%
1/25/20	915		221		85	52	1,052	1,052	618	1.8	7.4	100%
1/26/20	1,645	1,013	563	69	44	76	1,423	1,423	698	2.4	8.3	100%
1/27/20	2,567	1,877	563	127	47	100	2,714	2,714	1,590	4.6	19.0	100%
1/28/20	3,349	2,450	671	228	80	125	3,554	3,554	1,905	6.1	22.8	100%
1/29/20	4,334	3,346	711	277	90	162	4,586	4,586	2,261	7.8	27.0	100%
1/30/20	5,486	4,392	804	290	116	204	5,806	5,806	2,639	9.9	31.5	100%
1/31/20	6,738	5,444	956	338	166	249	7,153	7,153	3,215	12.2	38.4	100%
2/1/20	8,565	7,003	1,118	444	215	294	9,074	9,074	4,109	15.5	49.1	100%
2/2/20	9,618	7,917	1,223	478	295	350	10,263	11,177	5,142	17.5	56.4	92%
2/3/20	10,990	8,857	1,557	576	396	414	11,800	13,522	6,384	20.2	66.6	87%
2/4/20	12,627	10,107	1,809	711	520	479	13,626	16,678	8,351	23.3	81.6	82%
2/5/20	14,314	11,230	2,328	756	633	549	15,496	19,665	10,117	26.5	95.3	79%
2/6/20	15,804	11,802	3,161	841	817	618	17,239	22,112	11,618	29.5	108.3	78%
2/7/20	19,835	14,640	4,188	1,007	1,113	699	21,647	24,953	13,603	37.0	141.1	87%
2/8/20	20,993	15,746	4,093	1,154	1,439	780	23,212	27,100	14,982	39.7	153.4	86%
2/9/20	22,160	16,655	4,269	1,236	1,795	871	24,826	29,631	16,902	42.4	169.3	84%
2/10/20	25,087	18,743	5,046	1,298	2,222	974	28,283	31,728	18,454	48.3	196.7	89%
2/11/20	26,121	18,880	5,724	1,517	2,639	1,068	29,828	31,728	18,454	51.0	207.4	94%
2/12/20	33,693	26,609	5,647	1,437	3,441	1,310	38,444	48,206	32,994	65.7	314.6	80%
2/13/20	36,719	27,081	7,953	1,685	4,131	1,426	42,276	51,986	35,991	72.3	349.9	81%
2/14/20	38,107	27,955	8,276	1,876	4,774	1,457	44,338	54,406	37,914	75.8	369.4	81%
2/15/20	39,447	29,051	8,439	1,957	5,623	1,596	46,666	56,249	39,462	79.8	391.4	83%
2/16/20	40,814	31,017	8,024	1,773	6,639	1,696	49,149	58,182	41,152	84.0	415.6	84%
2/17/20	41,957	30,987	9,117	1,853	7,862	1,789	51,608	59,989	42,752	88.2	439.7	86%
2/18/20	43,471	32,225	9,289	1,957	9,128	1,921	54,520	61,682	44,412	93.2	469.3	88%
2/19/20	43,745	32,567	9,128	2,050	10,337	2,029	56,111	62,013	45,027	95.9	487.0	90%
2/20/20	42,056	31,059	8,979	2,018	11,788	2,144	55,988	62,422	45,346	95.7	486.2	90%
2/21/20	41,036	30,144	8,400	2,492	13,557	2,250	56,843	63,454	45,660	97.2	489.0	90%
2/22/20	39,073	29,643	7,776	1,654	16,738	2,399	58,210	64,287	46,607	99.5	504.5	91%
2/23/20	37,896	29,221	7,090	1,585	18,854	2,563	59,313	64,786	47,071	101.4	515.2	92%
2/24/20	36,242	27,916	6,840	1,486	20,912	2,615	59,769	65,187	47,441	102.2	520.0	92%
2/25/20	34,978	26,994	6,581	1,403	23,200	2,641	60,819	65,596	47,824	104.0	530.1	93%

Sent from Mail [go.microsoft.com] for Windows 10

From: Tracey McNamara

Sent: Wednesday, February 26, 2020 8:35 PM

To: Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Carter Mecher; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

FEB 26 2020

QIAGEN announces worldwide shipments of QIAstat-Dx test kits for SARS-CoV-2

• QIAstat-Dx Respiratory 2019-nCoV Panel rapidly differentiates novel coronavirus from 21 other pathogens implicated in serious respiratory syndromes

• Panel being tested at four hospitals in China after initial evaluation on clinical samples by a leading Paris hospital

• Adds to QIAGEN's portfolio of molecular testing solutions to aid in global public health emergency

Hilden, Germany, and Germantown, Maryland, February 26, 2020 – QIAGEN (NYSE: QGEN; Frankfurt Prime Standard: QIA) today announced it has shipped its newly developed QIAstat-Dx Respiratory Panel 2019-nCoV test kit to four hospitals in China for evaluation. The new kit detects the novel coronavirus SARS-CoV-2 and adds rapid Sample to Insight syndromic testing to QIAGEN's portfolio of molecular testing solutions in the public health emergency. QIAGEN is also in the process of shipping QIAstat-Dx testing kits to public health institutions in other regions, including Europe, South-East Asia, and the Middle East.

Since January QIAGEN has been providing instruments and consumables to support detection of the virus in China and other markets. Official protocols for SARS-CoV-2 detection include QIAGEN extraction kits, reagents and instruments for real-time polymerase chain reaction (RT-PCR) workflows. Customers also are deploying QIAsymphony modular instruments and NeuMoDx integrated PCR systems to automate higher-throughput processing of their laboratory-developed tests for SARS-CoV-2.

"Our dedicated task force has moved very fast to develop and make available the QIAstat-Dx respiratory panel with SARS-CoV-2 detection. We are partnering closely with authorities and customers around the world to bring rapid, accurate diagnosis to the fight against this deadly infectious disease," said Thierry Bernard, Interim CEO of QIAGEN and Senior Vice President, Head of the Molecular Diagnostics Business Area. "As we have in past health crises such as SARS

and the swine flu, QIAGEN is working hard to deliver better, faster testing solutions for hospitals and public health institutions to aid in the effort to monitor and bring the outbreak under control. Our employees' extraordinary response embodies QIAGEN's core mission to make improvements in life possible."

The QIAstat-Dx system was introduced in Europe in 2018 as a CE-product and cleared by the Food and Drug Administration (FDA) in the United States in mid-2019. It enables fast, cost-effective and easy-to-use syndromic testing with novel Sample to Insight workflows. The system streamlines molecular testing from end to end. A technician simply loads a clinical sample (such as a swab) into a single-use QIAstat-Dx cartridge and places it in the analyzer. QIAGEN chemistries for sample processing and analysis are built in, and the QIAstat-Dx instrument delivers results in about one hour.

New QIAstat-Dx testing solution for SARS-CoV-2

The QIAstat-Dx Respiratory 2019-nCoV Panel is a new version of the existing QIAstat-Dx Respiratory Panel for differential analysis of 21 viral and bacterial pathogens in respiratory syndromes. Once the SARS-CoV-2 genome was sequenced in January, QIAGEN developed two highly sensitive assays to detect SARS-CoV-2 targeting Orb1ab and the E gene. The addition of these targets provides parallel tools for combined detection of the novel coronavirus with increased sensitivity.

The expanded QIAstat-Dx panel is currently being evaluated at the Bichat-Claude Bernard Hospital in Paris. "After more than a year of experience using the existing QIAstat-Dx Respiratory Panel to evaluate patients coming into our Emergency Department with respiratory syndromes, we are evaluating the new panel with SARS-CoV-2 against RT-PCR testing using WHO recommended protocols. The QIAstat-Dx solution can provide results in about one hour, with high sensitivity and specificity and minimal hands-on time for hospital or laboratory personnel," said Dr. Benoit Visseaux, Associate Professor of Virology at Bichat-Claude Bernard Hospital in Paris.

Amid the rapidly evolving response to the coronavirus outbreak, the regulatory status of the QIAstat-Dx Respiratory Panel will vary by location. QIAGEN will apply for emergency authorization for marketing of the new panel from the U.S., the Korean KCDC/MFDS, and FDA and China's National Medical Products Administration (NMPA); the panel will be available with CE-IVD marking in Europe and other markets.

Multiple other QIAGEN testing solutions for SARS-CoV-2

QIAGEN has moved quickly on several fronts to provide molecular testing solutions to researchers working to counter the international threat from the SARS-CoV-2 virus. Building on its strong position and experience in molecular testing for infectious diseases, QIAGEN is providing a variety of solutions:

- Enabling laboratory-developed tests (LDTs) – extraction kits, PCR enzymes and instruments, supporting in-house testing by laboratories and public health institutions. CDC guidelines for RT-PCR testing list QIAGEN's EZ1 DSP Virus kits, which run on EZ1 Advanced workstations, and QIAamp DSP Viral RNA Mini kits, which can be automated on QIAcube instruments. Chinese authorities and the Berlin Charitè protocol also include QIAGEN consumables.
- Mid- and high-throughput automation – QIAsymphony modular systems for sample preparation and PCR analysis, as well as NeuMoDx 96 and 288 systems for fully integrated PCR analysis, enabling customers to implement higher-throughput solutions for laboratory-developed RT-PCR tests. QIAGEN recently started placing NeuMoDx systems in China, for use in with LDTs in SARS-CoV-2 testing.
- Additional real-time PCR tests – two new RT-PCR tests for detection of SARS-CoV-2 have been developed at QIAGEN sites in China and the United States and will be available for Research Use Only. The company is investigating potential emergency use options for the automated PCR-based test solutions.

Further information can be also found here [corporate.qiagen.com]

About QIAGEN

QIAGEN N.V., a Netherlands-based holding company, is the leading global provider of Sample to Insight solutions that enable customers to gain valuable molecular insights from samples containing the building blocks of life. Our sample technologies isolate and process DNA, RNA and proteins from blood, tissue and other materials. Assay technologies make these biomolecules visible and ready for analysis. Bioinformatics software and knowledge bases interpret data to report relevant, actionable insights. Automation solutions tie these together in seamless and cost-effective workflows. QIAGEN provides solutions to more than 500,000 customers around the world in Molecular Diagnostics (human healthcare) and Life Sciences (academia, pharma R&D and industrial applications, primarily forensics). As of December 31, 2019, QIAGEN employed approximately 5,100 people in over 35 locations worldwide. Further information can be found athttp://www.qiagen.com [qiagen.com].

From: Richard Hatchett <richard.hatchett@cepi.net>

Sent: Wednesday, February 26, 2020 3:34 PM

To: Tom Bossert <tom.bossert@me.com>

Cc: Caneva, Duane <duane.caneva@hq.dhs.gov>; Carter Mecher <cmecher@charter.net>; Dr. Eva K Lee <evalee-gatech@pm.me>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>

Subject: Re: Red Dawn Breaking Bad, Start Feb 24

Bob K live in the White House Briefing Room now - live feed on WaPo site -

Sent from my iPhone

> On 26 Feb 2020, at 23:08, Tom Bossert <tom.bossert@me.com> wrote:
>
> Why are CDC numbers (on their website) so low? E.g., 14,000 deaths.
>
> -Tom
>
> > On Feb 26, 2020, at 5:56 PM, Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:
> >
> > Master Question List—things to think about, updated.
> >
> > Also,
> >
> > https://www.washingtonpost.com/health/2020/02/25/cdc-coronavirus-test/ [washingtonpost.com]
> >
> > ---
> >
> > **From:** Carter Mecher <cmecher@charter.net>
> >
> > **Sent:** Wednesday, February 26, 2020 3:14 PM
> >
> > **To: Subject:** RE: Red Dawn Breaking Bad, Start Feb 24

Updated cruise ship data including data we can find by country

Country	Passengers/Crew	Cases Hospitalized in Japan	Cases Confirmed upon Repatriation	Total Confirmed Cases	ICU Admissions	Deaths	% Infected
US	434	44	42	86			20%
Hong Kong	364	55	4	59			16%
Canada	256	47		47			18%
Australia	241	47	7	54			22%
UK	78	6	4	10			13%
Italy	35						
South Korea	14						
Israel	11	3	2	5			45%
Japan						4	
Subtotal	1,433	202	59	261			
Total	**3,711**			**744**			**20%**

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing			

1-Feb	canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tested
11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		1,219 tested; 73 asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,723 tested; 19 seriously ill
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,066 tested; 28 seriously ill; 322 asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	744	4	3,894 tested; 35 seriously ill; 380 asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested	746	4	

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 1:46 PM

To: Richard Hatchett; Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Number of cases from Diamond Princess cruise ship rises to 42 in US (plus 44 in Japan), for total of 86.

<image001.png>

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 12:34 PM

To: Richard Hatchett; Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

I found a treasure trove of information and analysis of the Diamond Princess cruise ship outbreak. Japan's National Institute of Infectious Diseases published a Field Briefing on Feb 21, 2020
https://www.niid.go.jp/niid/en/2019-ncov-e.html [niid.go.jp]

I took the material and built a slide deck.

Take a look.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 9:08 AM

To: Richard Hatchett; Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Things keep getting more complicated wrt the cruise ship outbreak. Another 45 patients (out of 813 passengers who let off the ship) have developed symptoms and will require testing.

TOKYO: Dozens of passengers allowed off a coronavirus-stricken ship have developed symptoms including fever and will be asked to take tests for the virus, Japan's health minister said Wednesday.

The news came as another death linked to the virus in Japan was reported and the government urged organisers of major events in the next fortnight to consider cancelling or downsizing them to help curb the spread of infections.

The government has contacted 813 former passengers of the Diamond Princess cruise ship and found "45 people had certain symptoms", Health Minister Katsunobu Kato told parliament.

"We asked all of them (who have symptoms) to see a doctor and to take tests."

Around 970 people were allowed off the boat last week after testing negative for the virus, but several have subsequently been diagnosed with the illness.

Japan has come under increasing pressure over its handling of the crisis on the vessel.

Those allowed off the ship after a 14-day quarantine were asked to stay inside, but no formal measures restricting their movement were imposed.

Opposition lawmakers have blamed the government for failing to implement a fresh 14-day quarantine after the passengers left the cruise ship – as was required by countries that repatriated citizens from the boat.

Infections have also continued to rise inside Japan, and Prime Minister Shinzo Abe on Wednesday said hosting large events should be reconsidered.

"In light of the significant infection risks, we will ask that national sporting or cultural events that will attract large crowds be either cancelled, postponed or downsized for the next two weeks," Abe told a cabinet task force meeting on the outbreak.

Concerts cancelled

After the announcement, Nippon Professional Baseball Organization said its unofficial spring games through March 15 would be held in empty stadiums, before the official season opens on March 20.

Some top Japanese musicians, including all-male group Exile and female trio Perfume cancelled concerts, while Tokyo Girls Collection fashion show on Saturday will be held with no audience, according to their organisers.

The virus has also forced professional football, rugby, golf, tennis and other sports to reschedule games or to hold their events with no fans in attendance.

The government has also asked state-operated museums and theatres to consider closing or cancelling shows.

The government has repeatedly said that the coming weeks will be critical in limiting the spread of the virus in Japan.

But its measures have been largely advisory, including recommending that people work from home or commute off-peak.

The recommendations come as the local government in northern Hokkaido announced in its latest update on the virus the death of a local resident, whose name, gender and age were not revealed.

The governor of Hokkaido, where at least 38 people have been diagnosed, said he was requesting local municipalities to close public schools for one week from Thursday.

In Tokyo meanwhile, the regional education board said public high schools may start classes late to spare students travelling on packed commuter trains.

Japan has seen at least 165 infections separate from the outbreak on the cruise ship.

The outbreak has raised fears that the Olympic Games to be hosted in Tokyo this summer could be cancelled, a possibility government officials and organisers have rejected.

“We have not thought about it. We have not heard about it. We have made inquiries, and we were told there is no such plan,” Tokyo 2020 CEO Toshiro Muto told reporters.

“Our basic thinking is to conduct the Olympics and Paralympics as planned. That’s our assumption.”

Sent from Mail [go.microsoft.com] for Windows 10

From: Richard Hatchett

Sent: Wednesday, February 26, 2020 9:01 AM

To: Carter Mecher; Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

https://www.theguardian.com/world/2020/feb/26/wuhan-nurses-plea-international-medics-help-fight-coronavirus [theguardian.com]

Moving description from the front lines of conditions in Wuhan . . . And a picture of what we will likely face soon . . .

From: Carter Mecher <cmecher@charter.net>

Sent: 26 February 2020 04:11

To: Caneva, Duane <duane.caneva@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Dr. Eva K Lee <evalee-gatech@pm.me>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Watching ILI in a few key areas--NYC, Chicago, CA, and TX. Week 7 data (week ending Feb 15). Flu is now trending down. This data is a little old (now 10 days old). Week 8 data coming soon.

Chicago

NYC

CA

TX

Sent from Mail [go.microsoft.com] for Windows 10

From: Caneva, Duane

Sent: Tuesday, February 25, 2020 10:40 PM

To: Carter Mecher; Richard Hatchett; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

ASTHO sponsored meeting hosted by White House this evening. Good discussion and input from many state and local Public Health Official partners. We are all in this together, and preparedness and response slowly transitions to community mitigation efforts and the frontline boots on the ground.

Still only 14 cases *detected*.

Red Dawn Breaking…

From: Carter Mecher <cmecher@charter.net>

Sent:

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

https://www.sciencemag.org/news/2020/02/coronavirus-infections-keep-mounting-after-cruise-ship-fiasco-japan [sciencemag.org]

TOKYO—All but a handful of the passengers of the disease-stricken Diamond Princess cruise ship berthed in Yokohama have disembarked. But for Japan, the saga is far from over. Much of the crew remains on board, enduring another 14 days of quarantine—although this time under conditions that Japanese officials hope will prevent any additional infections.

But there has been another worrisome development: As of today, eight public servants who worked on the ship to support the quarantine have tested positive for COVID-19, and more may follow. Most of the roughly 90 health ministry employees who visited the ship during the first 2-week quarantine that ended on 19 February initially returned to their normal work duties, but in light of the infections, the health ministry yesterday revised its policy and now those potentially exposed to the virus on the Diamond Princess are self-quarantining at home for 14 days, according to a ministry official who asked not to be identified.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Tuesday, February 25, 2020 7:41 PM

To: Richard Hatchett; Dr. Eva K Lee

Cc: Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Some updates. Will send the Hubei/Wuhan update later.

Singapore and Hong Kong continue to hold the line. I attached the case studies we did to monitor when they pulled the trigger in NPIs—lessons for us and for others.

Singapore (+1 case) 91 cases/0 deaths /7 in ICU (still 4 kids—none currently hospitalized/2 were asymptomatic

Hong Kong (+4) 85 cases/2 deaths/ 4 critical; 2 serious (still no kids reported)

Japan 170 cases/1 death/7 serious

Explosive growth in South Korea, Italy, and Iran

South Korea 977 cases/11 deaths/6 critical

99 out of 102 people in the psychiatric department of a hospital in South Korea tested positive for coronavirus infection.

https://www.bloomberg.com/news/articles/2020-02-22/nearly-all-patients-in-south-korean-psychiatric-ward-have-virus [bloomberg.com]

Yesterday, the Korean government raised the alert level from Orange(Level 3) to Red (Level 4) in order to prepare for a possible nation-wide transmission. It was a proactive decision taking into consideration the pattern and speed of transmission.

Italy 322 cases/11 deaths/114 in hospital; 35 in ICU

Public events in Veneto and Lombardy are banned - All schools in Lombardy and Veneto will be closed - Venice Carnival will be shut down, shows canceled at Milan La Scala

Iran 95 cases/16 deaths

Bahrain 23 cases/0 deaths

Bahrain closes all kindergartens, schools, universities, and training centers in the country for at least 2 weeks to prevent the spread of coronavirus

New countries today

- Algeria
- Austria
- Croatia
- Switzerland

Sent from Mail [go.microsoft.com] for Windows 10

From: Richard Hatchett

Sent: Tuesday, February 25, 2020 5:47 PM

To: Dr. Eva K Lee

Cc: Carter Mecher; Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY,

MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard

Subject: Re: Red Dawn Breaking Bad, Start Feb 24

Big news today from China is the continued drop in new cases (down to just over 500 today) and the number of provinces (>20) with no new cases at all. It remains to be seen if China can hold the line but its interventions ARE working to reduce transmission dramatically and Carter is right that Singapore and Hong Kong are demonstrating the value of an early, rapid, aggressive response. Whether the rest of the world, and the U.S., can mount a similarly effective response I do not know, but China has shown what can be done with NPIs.

+ Ryan Morhard from WEF. Welcome Ryan -

Sent from my iPhone

> On 25 Feb 2020, at 18:14, Dr. Eva K Lee <evalee-gatech@pm.me> wrote:
>
> It is unclear if S. Korea will be able to setup so many temp. beds as China. They're very slow in picking up social distancing and social awareness, proper NPI. Iran is way behind in terms of medical care. I fear they will have very high mortality.
>
> evalee-gatech@pm.me
>
> https://newton.isye.gatech.edu/DrLee/ [newton.isye.gatech.edu]
>
> mobile: 404-432-6835
>
> Sent with ProtonMail [protonmail.com] Secure Email.
>
> ------- Original Message -------
>
> On Tuesday, February 25, 2020 11:34 AM, Carter Mecher <cmecher@charter.net> wrote:
>
>> South Korea now has 977 cases and 10 deaths. They are about where Wuhan was on January 25th (so about 1 month behind). Wuhan was overwhelmed less than 2 weeks later. I would expect the same for South Korea with the epicenter being in Seoul.
>>
>> I think Iran is about at the same point (maybe even a little ahead) of South Korea. Tehran is another very large city that will likely becomes its epicenter.
>>
>> I see a few hopeful signs. Singapore and Hong Kong have done a great job thus far and have implemented NPIs very early. Both have great surveillance. They are holding the line. They are also small and islands. Japan on the other hand is struggling and hasn't been as aggressive as Singapore and Hong Kong.
>>
>> The other thing that gives me hope is what I see in Hubei and Wuhan. I realize the data is a little sketchy because China has gone back and forth with the definition of cases, but I tried to smooth that over by looking at cumulative hospitalization rates per 100,000 (like we do for flu). Hubei (and Wuhan is a city within Hubei) reports each day the current number of people in the hospital (# currently in severe condition, # in critical condition), cumulative number of hospital discharges, cumulative deaths, and cumulative cases. From this we can estimate cumulative hospitalizations and then rates. 92% of the cases have been hospitalized (up thru Feb 2nd 100% of the cases they reported were hospitalized). Knowing the number of cases in Wuhan, we have been estimating the number hospitalized assuming a similar % of the cases requiring hospitalization rate for Wuhan (that 92% of the cases are being hospitalized—that number is adjusted each day based on current data). So we really can't back out the Wuhan numbers from the Hubei numbers. The best we can do is compare Hubei totals (including Wuhan) with an estimate of Wuhan. This data is good enough to show that the Chinese appear to be slowing transmission outside of Wuhan (They were late to implement NPIs in Wuhan but were able to implement NPIs earlier in the epidemic outside of Wuhan because the outbreak had about a 2 week head-start in Wuhan).
>>
>> <E0B38B2300CE43F09DC37BFDDDB81F3C.png>
>>
>> We need to emulate the blue curve. If I could subtract Wuhan, this curve would be significantly lower.
>>
>> Remember the goals of NPIs.
>>
>> <CB432B1C32644B219725D229547BEDDC.png>

Sent from Mail [go.microsoft.com] for Windows 10

From: Richard Hatchett

Sent: Tuesday, February 25, 2020 10:30 AM

To: Carter Mecher; Dr. Eva K Lee

Cc: Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Death #4 from Diamond Princess.

https://twitter.com/BNODesk/status/1232124151789477889 [twitter.com]

From: Carter Mecher <cmecher@charter.net>

Sent: 25 February 2020 14:10

To: Dr. Eva K Lee <evalee-gatech@pm.me>

Cc: Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; cameron.hamilton@hq.dhs.gov; Richard Hatchett <richard.hatchett@cepi.net>; Caneva, Duane <duane.caneva@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <David.Wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

We should plan assuming we won't have enough PPE—so need to change the battlefield and how we envision or even define the front lines. The frontlines for mild illness need to pivot from our usual way of dealing with ILI in our clinics and ERs to non-face-to-face alternatives for the delivery of care (by phone/telehealth/home care). It means we need to shrink the problem and think of COVID patients in two groups: (1) those with mild enough disease that they can be managed thru self-care in the home; and (2) those will more severe disease that cannot be managed at home and likely require hospitalization. The first group needs to be managed by phone/telehealth with "prescriptions" for home isolation qD X 14 days (no refills) and home isolation for household members qD X 14 days (refills allowed). And only the second group should be coming to our ERs. It is why we need to look broadly at our healthcare system (even including minute clinics at CVS/Walgreens and stand alone urgent care centers). We need to start introducing this now.

Sent from Mail [go.microsoft.com] for Windows 10

From: Dr. Eva K Lee

Sent: Tuesday, February 25, 2020 8:47 AM

To: Carter Mecher

Cc: Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

This is extremely troubling that healthcare workers, including medical leaders are contracting the COVID-19 while caring for the infected. I am very worried about the supply-chain regarding all the protective gears, medical supplies and everything that is needed to combat this disease. The demand is rising and there is no guarantee that we can continue with the supply since the supply-chain has been disrupted.

I do not know if we have enough resources to protect all frontline providers.

evalee-gatech@pm.me

https://newton.isye.gatech.edu/DrLee/ [newton.isye.gatech.edu]

mobile: 404-432-6835

------- Original Message -------

On Tuesday, February 25, 2020 8:37 AM, Carter Mecher <cmecher@charter.net> wrote:

> For those who cannot access Twitter but can access YouTube, here is the video.
>
> https://www.youtube.com/watch?v=4AX4dbXIsSw [youtube.com]
>
> Imagine if something like this happened in the US with an equivalent national leader (watching him coughing during a press conference, rubbing his nose, and wiping the sweat from his forehead, and leaning on the podium with one hand while someone else is speaking) and then learning afterwards that he is infected with COVID. That is what has happened in Iran.
>
>
>
> ---
>
> **From:** Carter Mecher
>
> **Sent:** Tuesday, February 25, 2020 8:01 AM
>
> **To:** Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott
>
> **Cc:** Padget, Larry G
>
> **Subject:** RE: Red Dawn Breaking Bad, Start Feb 24
>
> Modeling isolation and social distancing (not)

https://twitter.com/BNODesk/status/1232276183305400320 [twitter.com]

Imagine how widespread it must be to see this?

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Tuesday, February 25, 2020 7:20 AM

To: Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott

Cc: Padget, Larry G

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Just a word of caution. Here is what those numbers would mean. These are the projections using an attack rate of 30% (could send you the model in Excel and you can plug in whatever attack rate you like). I suspect that those CFRs are inflated because of case ascertainment issues (the actual denominator is much larger). The most recent background annual death data in the US (US Vital Statistics) is from 2017. It is useful to have those numbers of comparison.

I think those CFRs are on the high side., but don't have anything better to offer.

The best data we have for estimating CFR will be from the cruise ship, where we have a circumscribed population. That data is extremely valuable because the cruise ship had a crew of 1,045 (young and health) and 2,666 passengers (elderly). It will be important to look at each group separately. The data that I am aware of (all obtained thru open sources) is shared below this table).

AGE	2017 Census	2017 All Cause Mortality per 100,00	Actual 2017 All Cause Deaths	CFR	Projected 2019-nCoV Deaths	Ratio Projected Deaths to 2017 All Cause Deaths
<1 year	3,853,472	567.0	22,335	0.0%	0	0.00
1-4 years	16,085,388	24.3	3,880	0.0%	0	0.00
5 to 9 years	20,304,238	11.6	2,354	0.0%	0	0.00
10 to 14 years	20,778,454	15.5	3,217	0.2%	12,467	3.88
15 to 19 years	21,131,660	51.5	10,886	0.2%	12,679	1.16
20 to 24 years	22,118,635	95.6	21,139	0.2%	13,271	0.63
25 to 29 years	23,370,460	121.0	28,276	0.2%	14,022	0.50
30 to 34 years	21,972,212	145.4	31,939	0.2%	13,183	0.41
35 to 39 years	21,231,997	173.8	36,901	0.2%	12,739	0.35
40 to 44 years	19,643,373	218.4	42,895	0.4%	23,572	0.55
45 to 49 years	20,973,858	313.2	65,698	0.4%	25,169	0.38
50 to 54 years	21,401,094	488.0	104,444	1.3%	83,464	0.80
55 to 59 years	22,007,956	736.5	162,098	1.3%	85,831	0.53
60 to 64 years	19,987,702	1,050.2	209,908	3.6%	215,867	1.03
65 to 69 years	16,836,381	1,473.5	248,087	3.6%	181,833	0.73
70 to 74 years	12,847,065	2,206.9	283,523	8.0%	308,330	1.09
75 to 79 years	8,741,261	3,517.8	307,498	8.0%	209,790	0.68
80 to 84 years	5,965,290	5,871.7	350,261	14.8%	264,859	0.76
85 years and over	6,468,682	13,573.6	878,035	14.8%	287,209	0.33
Total population	**325,719,178**	**863.8**	**2,813,503**	**1.8%**	**1,764,286**	**0.63**

Attack Rate	30%

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
	80 year old passenger confirmed to have COVID-19			

1-Feb	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tested
11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		1,219 tested; 73 asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,723 tested; 19 seriously ill
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,066 tested; 28 seriously ill; 322 asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan	691	4	

Total passengers and crew:

691 cases (~50% asymptomatic) / 28 seriously ill (4%) / 4 deaths (a lagging measure)

So overall, a lower limit CFR of 0.6%--this includes the young healthy crew members and the elderly passengers.

Assuming the number of seriously ill approximates the % of cases requiring ICU care (4%) and the typical mortality rates for patients with pneumonia admitted to the ICU are 15%-50%, then CFR would be estimated to be0.6%-2% overall. The ICU data is sketchy (last data point I have is from Japan only on Feb 20). If someone has actual numbers of patients admitted to the ICU, just plug in and make your won estimate.

Americans:

Total Americans 434

- 329 evacuated
- 61 remained on board
- 44 in hospitals in Japan

80 cases (44 hospitalized in Japan/36 cases in US)

Media has only reported on a single American who was in the ICU in Japan (that is from Feb 11). There is nothing being reported in the media on current numbers of cases in ICU of Americans in the US or Japan. If anyone has that data (but cannot share it), would suggest you take that number divide it by the number of known American cases (80) to estimate a % of cases requiring ICU care. Multiply that number by 15%-50% to get a range of CFRs.

A while back I shared some estimates based upon the data from the cruise ship and compared to the 2005 HHS projections of a severe pandemic. Just to put those numbers in perspective. The 2005 estimates were that 30% of the population would become ill (30% attack rate); 11% of those who became ill would require hospitalization; 1.6% of those who became ill would require ICU care; and 2% of those who became ill would die.

We are in the ballpark.

From: Martin, Gregory J

Sent: Tuesday, February 25, 2020 6:04 AM

To: Walters, William; cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott; Carter Mecher

Cc: Padget, Larry G

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Wil,

This is what I've been using in our provider PowerPoint

Greg

Gregory J. Martin, MD

Chief, Tropical Medicine-Infectious Diseases

Bureau of Medical Services

US Department of State

2401 E St NW (SA-1)

Washington, DC 20522

BlackBerry while traveling: 202 230-0704

MartinGJ@state.gov

From: Walters, William <WaltersWA2@state.gov>

Sent: Tuesday, February 25, 2020 6:56 PM

To: cameron.hamilton@hq.dhs.gov; Richard Hatchett <richard.hatchett@cepi.net>; Caneva, Duane <duane.caneva@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Martin, Gregory J <MartinGJ@state.gov>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <David.Wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee-gatech@pm.me>; Lee, Scott <Scott.Lee@hhs.gov>; Carter Mecher <cmecher@charter.net>

Subject: Re: Red Dawn Breaking Bad, Start Feb 24

Colleagues,

Does anyone have a case fatality rate projection broken down by age?

William A. Walters, M.D., MBA

Executive Director and

Managing Director for Operational Medicine

Bureau of Medical Services

U.S. Department of State

(703) 957-9493

walterswa2@state.gov

walterswa2@state.sgov.gov

wwalters@state.ic.gov

From: Carter Mecher <cmecher@charter.net>
Sent: Monday, February 24, 2020 4:58:53 PM
To: cameron.hamilton@hq.dhs.gov <cameron.hamilton@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Caneva, Duane <duane.caneva@hq.dhs.gov>; rjglassjr@gmail.com <rjglassjr@gmail.com>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; Walters, William <WaltersWA2@state.gov>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU <jwleduc@utmb.edu>; rbaric@email.unc.edu <rbaric@email.unc.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Martin, Gregory J <MartinGJ@state.gov>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov <eric.mcdonald@sdcounty.ca.gov>; Wade, David <David.Wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov <david.gruber@dshs.texas.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee-gatech@pm.me>; Lee, Scott <Scott.Lee@hhs.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Several new countries announced first confirmed cases

Afghanistan

Bahrain

Iraq

Kuwait

Oman

Sent from Mail [gcc01.safelinks.protection.outlook.com] for Windows 10

From: Carter Mecher

Sent: Monday, February 24, 2020 1:51 PM

To: cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; Walters, William (STATE.GOV); HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Martin, Gregory J (MartinGJ@state.gov); Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert;

Tracey McNamara; Dr. Eva K Lee; Lee, Scott (OS/ASPR/EMMO)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

The number of Americans confirmed positives from the cruise ship evacuated to the US was incorrect, it should have been 36

Sent from Mail [gcc01.safelinks.protection.outlook.com] for Windows 10

From: Richard Hatchett

Sent: Monday, February 24, 2020 1:28 PM

To: Carter Mecher; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; Walters, William (STATE.GOV); HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; cameron hamilton (hamiltoncd@state.gov); Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Martin, Gregory J (MartinGJ@state.gov); Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott (OS/ASPR/EMMO)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Interesting account from China –

https://www.huffpost.com/entry/coronavirus-covid19-life-china-precautions_n_5e4eaa73c5b6df1e8be3d4d7
[gcc01.safelinks.protection.outlook.com]

From: Carter Mecher <cmecher@charter.net>

Sent: 24 February 2020 18:18

To: Caneva, Duane <duane.caneva@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; cameron hamilton (hamiltoncd@state.gov) <hamiltoncd@state.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Martin, Gregory J (MartinGJ@state.gov) <MartinGJ@state.gov>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee-gatech@pm.me>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Headlines:

Markets In Total Panic Mode As Coronavirus Cases Jump

"It's Total Panic" - Store-Shelves Empty As Virus-Spread Sparks Panic-Buying Food & Masks Across Italy

Sent from Mail [gcc01.safelinks.protection.outlook.com] for Windows 10

From: Carter Mecher

Sent: Monday, February 24, 2020 1:01 PM

To: Caneva, Duane; Richard Hatchett; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; Walters, William (STATE.GOV); HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; cameron hamilton (hamiltoncd@state.gov); Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Martin, Gregory J (MartinGJ@state.gov); Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott (OS/ASPR/EMMO)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

-Singapore +1 over the past 3 days (90 cases/0 deaths) 38 currently hospitalized, 7 in ICU

-Hong Kong now up to 81 cases/2 deaths

-South Korea continues to have explosive growth now up to 833 cases/7 deaths

-Japan is up to 156 cases/2 deaths

> **According to the Ministry of Health, Labor and Welfare, two new cases of infection have been confirmed on the 24th, including employees of the Ministry of Health, Labor and Welfare and quarantine officers who responded on a cruise ship. 7 staff members of the Ministry of Health, Labor and Welfare and quarantine officers have been confirmed +.**

-Italy has 227 cases/7 deaths

-Iran 61 cases/12 deaths

Sent from Mail [gcc01.safelinks.protection.outlook.com] for Windows 10

From: Caneva, Duane

Sent: Monday, February 24, 2020 12:30 PM

To: Richard Hatchett; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; Walters, William (STATE.GOV); HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; cameron hamilton (hamiltoncd@state.gov); Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Martin, Gregory J (MartinGJ@state.gov); Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Redd, John (OS/ASPR/SPPR); Carter Mecher; Yeskey, Kevin; Lee, Scott (OS/ASPR/EMMO)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Singapore COVID-19 Guidance Page:

https://www.gov.sg/article/covid-19-sector-specific-advisories [gcc01.safelinks.protection.outlook.com]

Best,

Duane

From: Caneva, Duane

Sent: Monday, February 24, 2020 12:28 PM

To: Subject: Red Dawn Breaking Bad, Start Feb 24

Importance: High

All,

This is a new Red Dawn Email String. Please use this one going forward.

Best,

Duane

Duane C. Caneva, MD, MS

Chief Medical Officer

Department of Homeland Security

202-254-6901 (o)

202-821-5374 (c)

Duane.Caneva@hq.dhs.gov

DCaneva@dhs.ic.gov

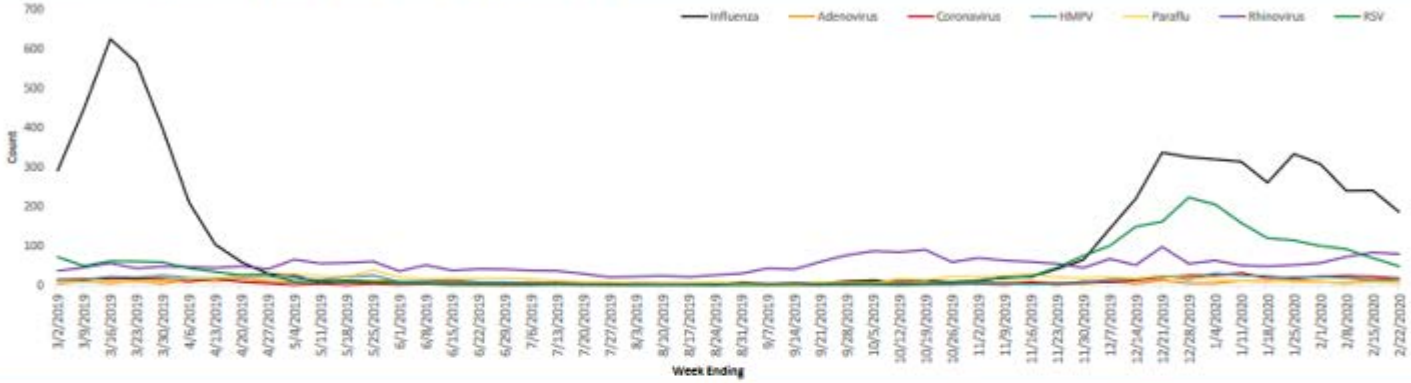
Executive Assistant: Nichole Burton,
nichole.burton2@associates.hq.dhs.gov, 202-254-8284

<2020_02_19_MQL_SARS-CoV-2_CLEARED FOR RELEASE.PDF>

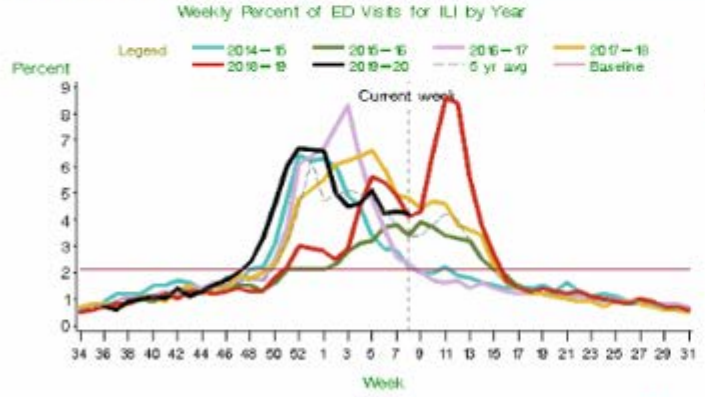
Public Health - Seattle & King County

Summary of Influenza Syndromic and Laboratory Surveillance

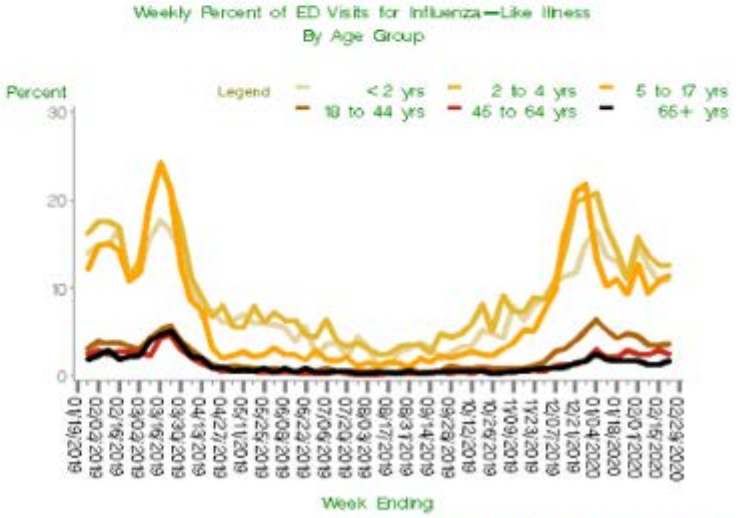
Influenza and other respiratory pathogens, PCR testing only (NREVSS)



King County syndromic surveillance



Note: The change from ICD–9 to ICD–10 codes in October 2015 may impact trends.
Last updated Feb 23, 2020 , 'current week' is week ending Feb 22, 2020
Baseline: Mean % ILI during non–flu weeks for previous three seasons, adding two standard deviations.
A non–flu week is a period of 2+ consecutive weeks where each one accounted for < 2% of the season's total number of specimens that tested positive for influenza by PCR.



ALLHOSPITALS, Last Updated Feb 26, 2020

From: Baer, Atar
To: Duchin, Jeff; Kay, Meagan
Cc: Lenahan, Jennifer; Fagalde, Meaghan
Subject: RE: Red Dawn Breaking Bad, Start Feb 24
Date: Saturday, February 29, 2020 2:11:02 PM
Attachments: image001.png
image004.png
image007.png

I'm failing to see the "upward trend in school age kids (ages 5-17) and 45-64 year olds" in the graphs below.

Here is where you can find our ED ILI trends broken down by age group. These are weekly graphs that will update tomorrow afternoon for the week ending 2/29/20.
The week-by-week up/down fluctuations are relatively small and typical compared to what we have seen historically.

I would expect an upward trend soon given the media attention.

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 29, 2020 1:59 PM
To: Baer, Atar <Atar.Baer@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Subject: Fwd: Red Dawn Breaking Bad, Start Feb 24

Another concern re syndromic - are we missing something?

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: LeDuc, James W. <jwleduc@UTMB.EDU>
Sent: Saturday, February 29, 2020 1:10:38 PM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Carter Mecher <cmecher@charter.net>
Subject: FW: Red Dawn Breaking Bad, Start Feb 24

Sorry, had wrong email

From: LeDuc, James W.
Sent: Saturday, February 29, 2020 3:08 PM
To: Carter Mecher <cmecher@charter.net>
Cc: Jeff Duchin (Jeff.Duchin@METROKC.GOV) <Jeff.Duchin@METROKC.GOV>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

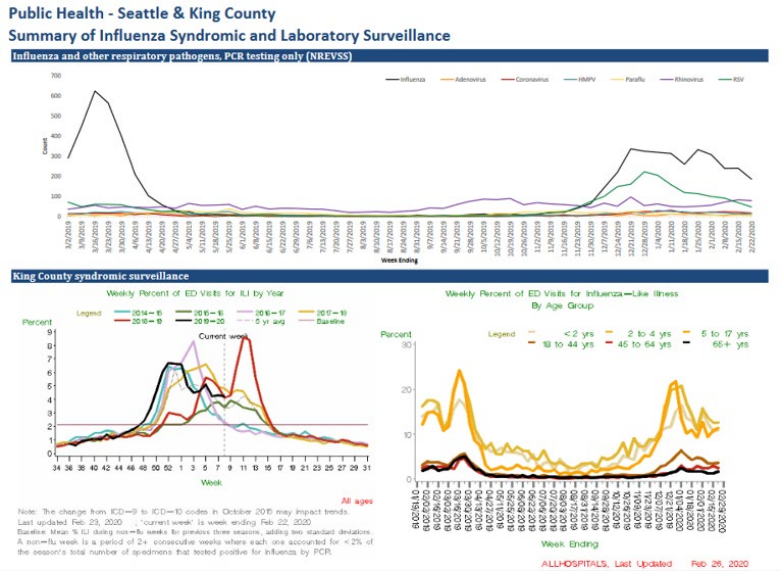
Contacting Jeff Duchin.

Jim

James W. Le Duc, Ph.D.
Director
Galveston National Laboratory
University of Texas Medical Branch
Galveston, TX 77555-0610
(t) 409-266-6500
(f) 409-266-6810
(m) 409-789-2012

From: Carter Mecher <cmecher@charter.net>
Sent: Saturday, February 29, 2020 2:09 PM
To: Dr. Eva K Lee <evalee-gatech@pm.me>
Cc: Lawler, James V <james.lawler@unmc.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Baric, Ralph S <rbaric@email.unc.edu>; Caneva, Duane <duane.caneva@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Tom Bossert <tom.bossert@me.com>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; LeDuc, James W. <jwleduc@UTMB.EDU>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Fantinato, Jessica - OHS, Washington, DC <jessica.fantinato@usda.gov>; Colby, Michelle - OHS, Washington, DC <michelle.colby@usda.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

I am also concerned about Seattle (Kings County). Charity, do you have contacts there? Or could someone reach out to Jeff Duchin from CDC or HHS?
https://www.kingcounty.gov/depts/health/communicable-diseases/disease-control/~/media/depts/health/communicable-diseases/documents/influenza/2020/week-08.ashx
This is week 8 data (so recent data). Compare the 3 graphs. Seeing a mismatch between pathogens by PCR (going down) and syndromic surveillance (flat). Also looking at ED visits and seeing an upward trend in school age kids (ages 5-17) and 45-64 year olds. Something doesn't sit right with me.



Sent from Mail for Windows 10

From: Carter Mecher
Sent: Saturday, February 29, 2020 2:58 PM
To: Dr. Eva K Lee
Cc: Lawler, James V; Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Charity, do you have any contacts in Hawaii? Would really be interested in Week 8 data.

I remember a story of a couple from Japan who were symptomatic while visiting Hawaii and were confirmed to have COVID upon their return to Japan.
https://bigislandnow.com/2020/02/17/53-self-monitor-for-coronavirus-in-hawaii-after-visiting-japanese-couple-tests-positive/

My understanding is that Hawaii did not perform testing on anyone (just monitored some contacts from symptoms).

I went to Hawaii's flu surveillance (their latest data is from week 7). My concern is the continued rise in ILI, despite a drop off in influenza in the lab.
https://health.hawaii.gov/docd/files/2018/03/FLU_Influenza_Surveillance.pdf

Sent from Mail for Windows 10

From: Dr. Eva K Lee
Sent: Saturday, February 29, 2020 1:15 PM
To: Carter Mecher
Cc: Lawler, James V; Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: Re: Red Dawn Breaking Bad, Start Feb 24

Oops. I mixed up the order. It should be -
From travelers: Washington, Illinois, California, Arizona, MA, Wisconsin, Oregon
Unknown origin: California, Oregon, Washington

I did a quick analysis on strategic screening, if we have enough testing power, I would suggest community testing strategically in California, Chicago/Illinois, Oregon, Washington, Boston, Atlanta, New York. It would be great if we can cover more. We have to go beyond contact tracing. It is also good to cover some universities.

evalee-gatech@pm.me
https://newton.isye.gatech.edu/DrLee/
mobile: 404-432-6835

Sent with ProtonMail Secure Email.

------- Original Message -------
On Friday, February 28, 2020 7:55 PM, Dr. Eva K Lee <evalee-gatech@pm.me> wrote:

> Yes, good for them to ask.
>
> It will be good to know how many are under observation and self quarantine also. Chicago is the first city with the confirmed COVID-19 case in US (from a returning traveler). I have forward the Kaiser data to Ncal and Jeff. See if they have an answer. I don't know if I can see the Ncal data on their EPIC system. I will see.
>
> ------- Original Message -------
> On Friday, February 28, 2020 7:49 PM, Carter Mecher <cmecher@charter.net> wrote:
>
> > Need someone from HHS or CDC to pick up the phone and reach out to public health in Chicago. I would also reach out to Kaiser in Northern California. How are they explaining this?
> >
> > Sent from my iPhone
> >
> > On Feb 28, 2020, at 6:57 PM, Lawler, James V <james.lawler@unmc.edu> wrote:
> >
> > Great pick up Carter. How can we confirm? In the absence of diagnostics, I would take an abnormal uptick in ILI syndromic data as a trigger for NPI.
> >
> > **James Lawler, MD, MPH, FIDSA**
> >
> > m: 703.407.6431
> >
> > james.lawler@unmc.edu
> >
> > ---
> >
> > **From:** Carter Mecher <cmecher@charter.net>
> > **Date:** Friday, February 28, 2020 at 3:37 PM
> > **To:** Tracey McNamara <tmcNamara@westernu.edu>, "Baric, Ralph S" <rbaric@email.unc.edu>, "Caneva, Duane" <duane.caneva@hq.dhs.gov>, Richard Hatchett <richard.hatchett@cepi.net>, "Dr. Eva K Lee" <evalee-gatech@pm.me>
> > **Cc:** Tom Bossert <tom.bossert@me.com>, "Martin, Gregory J" <MartinGJ@state.gov>, "Walters, William" <WaltersWA2@state.gov>,

"HAMILTON, CAMERON" <cameron.hamilton@hq.dhs.gov>, "rjglassjr@gmail.com" <rjglassjr@gmail.com>, "Dodgen, Daniel (OS/ASPR/SPPR)" <Daniel.Dodgen@hhs.gov>, "DeBord, Kristin (OS/ASPR/SPPR)" <Kristin.DeBord@hhs.gov>, "Phillips, Sally (OS/ASPR/SPPR)" <Sally.Phillips@hhs.gov>, David Marcozzi <DMarcozzi@som.umaryland.edu>, "Hepburn, Matthew J CIV USARMY (USA)" <matthew.j.hepburn.civ@mail.mil>, Lisa Koonin <lkoonin1@gmail.com>, "HARVEY, MELISSA" <melissa.harvey@hq.dhs.gov>, "WOLFE, HERBERT" <HERBERT.WOLFE@hq.dhs.gov>, "Eastman, Alexander" <alexander.eastman@hq.dhs.gov>, "EVANS, MARIEFRED" <mariefred.evans@associates.hq.dhs.gov>, "Callahan, m." <MVCALLAHAN@mgh.harvard.edu>, "jwleduc@UTMB.EDU" <jwleduc@utmb.edu>, "Johnson, Robert (OS/ASPR/BARDA)" <Robert.Johnson@hhs.gov>, "Yeskey, Kevin" <kevin.yeskey@hhs.gov>, "Disbrow, Gary (OS/ASPR/BARDA)" <Gary.Disbrow@hhs.gov>, "Redd, John (OS/ASPR/SPPR)" <John.Redd@hhs.gov>, "Hassell, David (Chris) (OS/ASPR/IO)" <David.Hassell@hhs.gov>, "Hamel, Joseph (OS/ASPR/IO)" <Joseph.Hamel@hhs.gov>, "Dean, Charity A@CDPH" <Charity.Dean@cdph.ca.gov>, "Lawler, James V" <james.lawler@unmc.edu>, "Borio, Luciana" <LBorio@iqt.org>, Dan Hanfling <DHanfling@iqt.org>, "eric.mcdonald@sdcounty.ca.gov" <eric.mcdonald@sdcounty.ca.gov>, "Wade, David" <david.wade@hq.dhs.gov>, "TARANTINO, DAVID A" <david.a.tarantino@cbp.dhs.gov>, "WILKINSON, THOMAS" <THOMAS.WILKINSON@hq.dhs.gov>, "david.gruber@dshs.texas.gov" <david.gruber@dshs.texas.gov>, "KAUSHIK, SANGEETA" <sangeeta.kaushik@hq.dhs.gov>, Nathaniel Hupert <nah2005@med.cornell.edu>, "Lee, Scott" <Scott.Lee@hhs.gov>, "Padget, Larry G" <PadgetLG@state.gov>, Ryan Morhard <Ryan.Morhard@weforum.org>, "Stack, Steven J (CHFS DPH)" <steven.stack@ky.gov>, "Adams, Jerome (HHS/OASH)" <Jerome.Adams@hhs.gov>, "Fantinato, Jessica - OHS, Washington, DC" <jessica.fantinato@usda.gov>, "Colby, Michelle - OHS, Washington, DC" <michelle.colby@usda.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Non-UNMC email

A couple updates. Noticed that CDC increased the number of confirmed cases of Americans n the US from the cruise ship from 42 to 44.

Looked at ILI for NYC and TX. ILI is trending down. Only odd thing I noticed besides the Kaiser Northern California ILI data on hospitalizations and the data from Chicago below (the ER ESSENCE data %of ER visits for ILI).Instead of falling, it actually increased slightly.

<image001.png>

<image002.png>

National ILI data shows it trending down (down to 5.5%).

<image003.gif>

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher
Sent: Friday, February 28, 2020 11:52 AM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans VetPop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%
70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	**100%**	**3,672**	**100%**	**19,209,704**	**100%**

The Veteran population is similar to the cruise population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the crew ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported to be in serious condition (5%).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	VHA Total
Operating Beds Hospital	15,744
Operating Beds Medicine/Surgery	9,817
Operating Beds ICU	1,692
ADC Hospital	9,805
ADC Medicine/Surgery	6,225
ADC ICU	1,101
ADC On a Ventilator	240
Daily Hospital Admissions	1,641
Daily Admissions Medicine/Surgery	1,226
Daily Admissions/Transfers in ICU	389
Emergency Department Care	
Daily ER Visits	6,874
Outpatient Care (non-ER)	
Daily Clinic Visits	209,336

Annually, VA has:

- 450,000 acute (medical/surgical) admissions
- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who use VA services), we can assume that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 63,000 ICU admissions.

Over an average 3 month period, VA would have ~625,000 ER/Urgent care visits, 112,000 acute care admissions, and 35,000 ICU admissions.

Now you understand the challenge.

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tested
11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		1,219 tested; 73 asymptomatic
	329 American evacuated from cruise ship (14 of the evacuees found to be			

16-Feb	+) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,723 tested; 19 seriously ill
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,066 tested; 28 seriously ill; 322 asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,894 tested; 35 seriously ill; 380 asymptomatic
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27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

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From: Carter Mecher
Sent: Friday, February 28, 2020 9:26 AM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

I think this data is close enough to convince people that this is going to be bad and we will need to pull the full array of Nis (TLC). All that is left is when (timing).

I went back to our comparison of Philadelphia and St. Louis in 1918. The difference between Philadelphia and St. Louis in terms when they pulled the trigger on NPIs was about two weeks during the course of their individual outbreaks.

In St. Louis, NPIs were put in place 1 week after the first cases at Jefferson Barracks, 5 days after the first death, and 3 days after the first civilian cases in St. Louis. In Philadelphia, NPIs were put in place 3 weeks after the first cases at the Navy Yard, 16 days after the first civilian cases in Philadelphia, 2 weeks after the first death. In the cases of NPIs, timing matters.

We would estimate that the outbreak in Wuhan had about a 2 week head start on the rest of Hubei. So the measures China implemented to slow transmission happened about two later in the course of the outbreak in Wuhan compared to the rest of Hubei Province. That comparison looks a lot like Philadelphia and St. Louis.

So we have a relatively narrow window and we are flying blind.

Looks like Italy missed it.

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From: Carter Mecher
Sent: Friday, February 28, 2020 9:14 AM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee

Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

This might be of interest. A comparison I ran of the distribution of the US population by age group compared to the passengers and crew aboard the Diamond Princess (surprised nobody ever did this). Except for kids, the cruise ship data tells a lot about adults (really shifted toward the 60-80 year old group).

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution
0-9 years	40,243,098	12%	16	0%
10-19 years	41,910,114	13%	23	1%
20-29 years	45,489,095	14%	347	9%
30-39 years	43,204,209	13%	428	12%
40-49 years	40,617,231	12%	334	9%
50-59 years	43,409,050	13%	398	11%
60-69 years	36,824,083	11%	923	25%
70-79 years	21,588,326	7%	1,015	27%
>80 years	12,433,972	4%	227	6%
Total population	**325,719,178**	**100%**	**3,711**	**100%**

Here is how the distributions compare when I only look at age≥20 (essentially adults)

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution
20-29 years	45,489,095	19%	347	9%
30-39 years	43,204,209	18%	428	12%
40-49 years	40,617,231	17%	334	9%
50-59 years	43,409,050	18%	398	11%
60-69 years	36,824,083	15%	923	25%
70-79 years	21,588,326	9%	1,015	27%
>80 years	12,433,972	5%	227	6%
Total population	243,565,966	**100%**	**3,672**	**100%**

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From: Carter Mecher
Sent: Friday, February 28, 2020 8:39 AM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Updated tables

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tested

11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		1,219 tested; 73 asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,723 tested; 19 seriously ill
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,066 tested; 28 seriously ill; 322 asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
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28-Feb	2 deaths reported in Japan	751	6	

Country	Passengers/Crew	Cases Hospitalized in Japan	Cases Confirmed upon Repatriation	Total Confirmed Cases	ICU Admissions	Deaths	% Infected
US	434	44	42	86			20%
Hong Kong	364	55	4	59			16%
Canada	256	47		47			18%
Australia	241	47	8	55			23%
UK	78	6	4	10		1	13%
Italy	35						
South Korea	14						
Israel	11	3	2	5			45%
Japan						5	
Subtotal	1,433	202	60	262			
Total	**3,711**	**691**	**60**	**751**		**6**	**20%**

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From: Carter Mecher
Sent: Friday, February 28, 2020 8:21 AM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Japan just announce a sixth passenger on the cruise ship has died (British passenger).

So 6/751 = 0.8% CFR This is now the new lower limit of CFR.

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From: Carter Mecher
Sent: Friday, February 28, 2020 5:20 AM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee

Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Japan announced fifth death of Diamond Princess passenger (70 year old woman). CFR for infected passengers is now 0.67% (this represents the lower limit of CFR). Below are the latest numbers I have (had to make a correction when I learned that the 705 total cases reported by Japan also included the 14 confirmed cases in Americans who were evacuated but not the cases that have appeared in the remaining citizens from the US (28), Australia (8), Hong Kong (4), UK (4), and Israel (2) after they were evacuated.

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1-Feb	80 year old passenger confirmed to have COVID-19			
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Subtotal	1,433	202	60	262			
Total	**3,711**	**691**	**60**	**751**			**20%**

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From: Carter Mecher
Sent: Thursday, February 27, 2020 11:09 PM
To: Tracey McNamara; Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Watching for ILI data for Chicago, NYC, CA, and TX (covering most of the Tier 1 UASI cities that encompass ~25% of the US population). CA posted Week 8 data tonight (others should be available tomorrow).

Here is the CA report

https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/Immunization/Week2019-2008_FINALReport.pdf [cdph.ca.gov]

Flu activity is decreasing, so watching for anything unusual in the decline in ILI (something displacing flu). Data from Kaiser Northern California is interesting that percent P&I admissions going up with decreasing flu activity. Charity, does Kaiser also follow P&I for outpatient clinics?

Week 7

Week 8

Week 7

Week 8

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From: Tracey McNamara
Sent: Thursday, February 27, 2020 10:12 PM
To: Baric, Ralph S; Caneva, Duane; Richard Hatchett; Dr. Eva K Lee; Carter Mecher
Cc: Tom Bossert; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH); Adams, Jerome (HHS/OASH); Fantinato, Jessica - OHS, Washington, DC; Colby, Michelle - OHS, Washington, DC
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Have you seen this? Israel claims they will have an oral vaccine in 3 weeks

Tracey

https://www.jpost.com/HEALTH-SCIENCE/Israeli-scientists-In-three-weeks-we-will-have-coronavirus-vaccine-619101 [jpost.com]

From: Baric, Ralph S <rbaric@email.unc.edu>
Sent: Thursday, February 27, 2020 6:55 PM

To: Caneva, Duane <duane.caneva@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Dr. Eva K Lee <evalee-gatech@pm.me>; Carter Mecher <cmecher@charter.net>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Tom Bossert <tom.bossert@me.com>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Fantinato, Jessica - OHS, Washington, DC <jessica.fantinato@usda.gov>; Colby, Michelle - OHS, Washington, DC <michelle.colby@usda.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

A comment: Pangolins are not the animal reservoir. Pangolin -CoV-2020 virus is only 90% identical to SARS-CoV2 while SARS-CoV-2 and bat-CoV-RaTG13 is 96% identical. The paper concludes its not a reservoir…"Although this present study does not support pangolins would be an intermediate host for the emergence of the 2019-nCoV……" at this moment, the most likely origins are bats, and I note that it is a mistake to assume that an intermediate species is needed. ralph

---

From: Caneva, Duane <duane.caneva@hq.dhs.gov>
Sent: Thursday, February 27, 2020 4:20 PM
To: Richard Hatchett <richard.hatchett@cepi.net>; Dr. Eva K Lee <evalee-gatech@pm.me>; Carter Mecher <cmecher@charter.net>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Tom Bossert <tom.bossert@me.com>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; Baric, Ralph S <rbaric@email.unc.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>; Adams, Jerome (HHS/OASH) <Jerome.Adams@hhs.gov>; Fantinato, Jessica - OHS, Washington, DC <jessica.fantinato@usda.gov>; Colby, Michelle - OHS, Washington, DC <michelle.colby@usda.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Updated Master Question List.

Best,

Duane

From: Caneva, Duane
Sent: Thursday, February 27, 2020 4:15 PM
To: Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Additional information sources:

Forwarding information from one of our BAH team members, Sumiko Mekaru, PhD, who has been working with colleagues at Harvard/BCH, Oxford, and Northeastern to develop a centralized repository of individual-level information on patients with laboratory-confirmed COVID-19 to include a map/data explorer visualization tool. This information is publicly available with credit to be given to the Open COVID-19 Data Curation Group on any publications/communications. Please feel free to disseminate further to anyone interested. If you have any questions, feel free to reach out. Thank you!

Map/Data Explorer: https://scarpino.shinyapps.io/Emergent_Epidemics_Lab_nCoV2019/ [scarpino.shinyapps.io]

Link to Linelist: https://docs.google.com/spreadsheets/d/1itaohdPiAeniCXNlntNztZ_oRvjh0HsGuJXUJWET008/edit#gid=0 [docs.google.com]

Twitter Update Notifications: https://twitter.com/svscarpino/status/1230330483319484417 [twitter.com], https://twitter.com/MOUGK [twitter.com]

Summary (https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30119-5/fulltext [thelancet.com])

- Coronavirus disease 2019 (COVID-19) is spreading rapidly across China, and as of Feb 16, 2020, had been reported in 26

countries globally. The availability of accurate and robust epidemiological, clinical, and laboratory data early in an epidemic is important to guide public health decision-making.1

- Consistent recording of epidemiological information is important to understand transmissibility, risk of geographic spread, routes of transmission, and risk factors for infection, and to provide the baseline for epidemiological modelling that can inform planning of response and containment efforts to reduce the burden of disease. Furthermore, detailed information provided in real time is crucial for deciding where to prioritise surveillance.
- Line list data are rarely available openly in real time during outbreaks. However, they enable a multiplicity of analyses to be undertaken by different groups, using various models and assumptions, which can help build consensus on robust inference. Parallels exist between this and the open sharing of genomic data.2

- We have built a centralised repository of individual-level information on patients with laboratory-confirmed COVID-19 (in China, confirmed by detection of virus nucleic acid at the City and Provincial Centers for Disease Control and Prevention), including their travel history, location (highest resolution available and corresponding latitude and longitude), symptoms, and reported onset dates, as well as confirmation dates and basic demographics. Information is collated from a variety of sources, including official reports from WHO, Ministries of Health, and Chinese local, provincial, and national health authorities. If additional data are available from reliable online reports, they are included. Data are available openly and are updated on a regular basis (around twice a day).

- We hope these data continue to be used to build evidence for planning, modelling, and epidemiological studies to better inform the public, policy makers, and international organizations and funders as to where and how to improve surveillance, response efforts, and delivery of resources, which are crucial factors in containing the COVID-19 epidemic.

- The epidemic is unfolding rapidly and reports are outdated quickly, so it will be necessary to build computational infrastructure that can handle the large expected increase in case reports. Data sharing will be vital to evaluate and maintain accurate reporting of cases during this outbreak.3

From: Richard Hatchett <richard.hatchett@cepi.net>
Sent: Thursday, February 27, 2020 1:29 PM
To: Dr. Eva K Lee <evalee-gatech@pm.me>; Carter Mecher <cmecher@charter.net>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Tom Bossert <tom.bossert@me.com>; Caneva, Duane <duane.caneva@hq.dhs.gov>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <herbert.wolfe@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <thomas.wilkinson@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Excellent editorial from Jeremy Farrar about the near-term funding requirement:

https://wellcome.ac.uk/news/global-institutions-must-act-urgently-and-decisively-tackle-covid-19 [wellcome.ac.uk]

UK Chief Medical Officer Chris Whitty providing forewarning that schools may need to close for as long as two months:

Chief medical officer: schools could shut for two months in event of pandemic

Chris Whitty has been speaking about measures to reduce risk in the event that coronavirus outbreak reaches pandemic proportions. While noting that such an outcome was just one possibility, he said that there could be a “social cost” if the virus intensifies seeing mass gatherings reduced and schools closed for more than two months.

He said:

One of the things that's really clear with this virus, much more so than flu, is that anything we do we're going to have to do for quite a long period of time, probably more than two months.

"The implications of that are non-trivial, so we need to think that through carefully.

"This is something we face as really quite a serious problem for society potentially if this goes out of control. It may not but if it does globally then we may have to face that."

Whitty also said that the UK would inevitably be affected in the event of a global epidemic.

If this becomes a global epidemic then the UK will get it, and if it does not become a global epidemic the UK is perfectly capable of containing and getting rid of individual cases leading to onward transmission.

"If it is something which is containable, the UK can contain it. If it is not containable, it will be non-containable everywhere and then it is coming our way."

https://www.theguardian.com/world/live/2020/feb/27/coronavirus-news-live-updates#block-5e57f5698f086a28115b3d8d [theguardian.com]

From: Dr. Eva K Lee <evalee-gatech@pm.me>
Sent: 27 February 2020 17:38
To: Carter Mecher <cmecher@charter.net>
Cc: Tracey McNamara <tmcNamara@westernu.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Tom Bossert <tom.bossert@me.com>; Caneva, Duane <duane.caneva@hq.dhs.gov>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

All schools close in Hong Kong until mid April. They are quarantining a huge group of people entering from China, in separate apartment complex.

Colleagues in UK told me that their schools are on the verge of closing also.

evalee-gatech@pm.me

https://newton.isye.gatech.edu/DrLee/ [newton.isye.gatech.edu]

mobile: 404-432-6835

------- Original Message -------

On Thursday, February 27, 2020 12:14 PM, Carter Mecher <cmecher@charter.net> wrote:

Japan

All schools told to be closed until April: https://www.japantimes.co.jp/news/20.../#.XlelKkNryik [japantimes.co.jp]

Prime Minister Abe at the government's headquarters opened shortly after 6:00 pm on March 27, and temporarily closed all elementary schools, junior high schools, and high schools nationwide from March 2 until spring break.

Prime Minister Abe noted that temporary closure of elementary and junior high schools has been taken in Hokkaido and Ichikawa City, Chiba Prefecture, and said, "Efforts have been made to prevent the spread of infection to children in each region. But the last couple of weeks is a very important time. "

He said, "First and foremost, put children's health and safety first, and prepare in advance for the risk of large-scale infection caused by many children and teachers gathering for long hours on a daily basis." He stated that all elementary schools, junior high schools, high schools and special needs schools should be closed temporarily until spring break

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From: Carter Mecher

Sent: Thursday, February 27, 2020 6:17 AM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

About time for Japan (was wondering what they were waiting for to pull this trigger)

Japan's Prime Minister Abe asks schools across the country to be closed from Monday to prevent the spread of coronavirus

Hope we are paying attention in the US and especially California.

Even NK is closing schools

North Korea postpones the opening of schools to prevent an outbreak of coronavirus

Add a few more countries to the list:

- Denmark
- Estonia
- Norway
- Romania

The outbreaks in Italy and Iran are much larger than many realize by evidence of the numbers of confirmed cases in international travelers from those areas. Cases in travelers from Italy have present in Israel, England, Denmark and Brazil. Need a pretty large outbreak for that to happen—much larger than the numbers reported.

Iran now reporting 245 cases and 26 deaths. Given the confirmed case in Canada of a traveler from Iran and the time from disease onset to death, this is already a well established and large outbreak in Iran.

Italy and Iran are about where Wuhan was 1 month ago. In a couple of weeks Wuhan was overwhelmed.

Here are some snippets re cases of travelers from Italy:

- Israel confirms 1 new case of coronavirus; an Israeli citizen who recently came back from Italy
- 2 new cases confirmed in England, UK; one of them came back from Italy and the other from Tenerife, Spain
- Denmark's TV2 says one of its reporters has tested positive for coronavirus after going on holiday in northern Italy. He developed symptoms on Wednesday morning.
- The patient is a 61-year-old man in São Paulo. He was in northern Italy from February 9 until February 21.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Thursday, February 27, 2020 5:24 AM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Looked at the age specific data from the cruise ship (focusing on ages <20). Although the numbers are small, the prevalence of disease in school age kids (ages 10-19) is similar to the elderly.

What also caught my eye was the data for young adults (ages 20-49). Since this data is for the entire ship, I suspect that most in this age group are crew. Only 8% of this age group was confirmed to have infection. The total confirmed cases in this analysis was only 619 (we are now up to 744), so perhaps they have since caught up.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Thursday, February 27, 2020 5:00 AM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Details below on case in California. From the cruise ship data we would estimate there are 20-50 cases for each ICY admission (assuming ICU admissions in 2%-5% of cases). That ratio was for an aged population. Suspect that ratio might be higher for a general population. And given the time from disease onset to being on a ventilator for at least a week (since at least Feb 19 when the patient arrived at UC Davis), the outbreak has had a good head start. That would suggest we already have a significant outbreak and are well behind the curve. We are now well past the equivalent 5:45 moment at Mann Gulch. You can't outrun it. They need to be thinking NPIs locally (full TLC including school closure).

[I will send something I was looking at re the cruise ship data and kids.]

https://www.sacbee.com/news/local/article240682311.html [sacbee.com]

Latest: Coronavirus patient at UC Davis Medical Center since Feb. 19 wasn't tested for days

The Solano County resident who is the nation's first confirmed case of coronavirus from "exposure in the community" has been under the care of UC Davis Medical Center for a week [sacbee.com], according to an internal memo obtained Wednesday night by The Sacramento Bee.

Just before 10 p.m., the hospital published the memo that was sent to employees by UC Davis Health leaders earlier in the day [ucdavis.edu] and outlines the timeline of the patient's admission and disclosed that several employees who were exposed to the patient self-isolate at home "out of abundance of caution."

The patient, whom the U.S. Centers for Disease Control and Prevention confirmed has tested positive the COVID-19 strain, was moved to the Sacramento teaching hospital on Feb. 19, according to the memo sent to staffers by David Lubarsky, the head of the hospital and UC Davis Health's vice chancellor of human health services, and Brad Simmons, the health system's interim CEO.

The patient was transferred to the facility from another hospital, where a medical team had already put the patient on a ventilator.

"The individual is a resident of Solano County and is receiving medical care in Sacramento County. The individual had no known exposure to the virus through travel or close contact with a known infected individual," California Department of Public Health officials said in a news release.

Because physicians at the first hospital suspected the patient had a virus, they issued an order that health care workers should wear personal protective gear when with the patient to guard against exposure to droplets, said the memo, which was first reported by the Davis Enterprise newspaper [davisenterprise.com].

The UCD medical team used the proper infection protocols out of concern that the individual might have coronavirus, according to the memo, and upon the patient's admission, UCD physicians requested that public health officials perform a test to determine whether the person had COVID-19.

"We requested COVID-19 testing by the CDC, since neither Sacramento County nor CDPH is doing testing for coronavirus at this time," the memo says. "Since the patient did not fit the existing CDC criteria for COVID-19, a test was not immediately administered. UC Davis Health does not control the testing process."

On Sunday, the CDC ordered a coronavirus test on the patient, and UC Davis Health officials discovered Wednesday that the patient tested positive for the deadly respiratory illness that causes coughing, fever and shortness of breath. That prompted hospital officials to tell "a small number" of hospital workers to stay home and monitor themselves for possible infection.

"Just as when a health care worker has a small chance of exposure to other illnesses, such as TB or pertussis, we are following standard CDC protocols for determination of exposure and surveillance," the memo said. "So, out of an abundance of caution, in order to assure the health and safety of our employees, we are asking a small number of employees to stay home and monitor their temperature."

"We are handling this in the same way we manage other diseases that require airborne precautions and monitoring," the memo said, adding hospital officials are "in constant communication with the state health department and the CDC and Sacramento County Public Health about the optimal management of this patient and possible employee exposures."

UCD officials did not respond to The Bee's request for comment.

The memo ended: "We are dedicated to providing the best care possible for this patient and continuing to protect the health of our employees who care for them."

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 9:45 PM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Some updates.

Singapore and Hong Kong continue to hold the line.

Singapore (+2 case) 93 cases/0 deaths /7 in ICU (still 4 kids—none currently hospitalized/2 were asymptomatic

Hong Kong (+6) 91 cases/2 deaths/ 4 critical; 2 serious (1 kid age 16)

Japan 189 cases/3 deaths/13 serious

Explosive growth in South Korea, Italy, and Iran

South Korea 1,596 cases/13 deaths/13 serious; 5 critical

Italy 453 cases/12 deaths

Iran 139 cases/19 deaths

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 9:29 PM

To: Tracey McNamara; Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Update Hubei & Wuhan Hospitalizations per 100,000. Hubei curve is plateauing.

	Hubei 2019-nCoV Confirmed Hospital Data							Hubei and Wuhan Cases & Hospitalization Rates				
Date	Total Current Inpatients	Mild Disease	Severely Ill	Critically Ill	Cum Discharges	Cum Deaths	Cum Inpatients	Hubei Cum cases	Wuhan Cases	Hubei Cum Hospitalization Rate per 100,000	Wuhan Cum Hospitalization Rate per 100,000	%Hubei Cases Hospitalized
1/14/20	6		6				6	41	41	0.01	0.5	
1/15/20	5		5			2	7	41	41	0.01	0.5	
1/16/20	5		5			2	7	45	45	0.01	0.5	
1/17/20	8		8			2	10	62	62	0.02	0.7	
1/18/20	136	100	33	3		3	139	121	121	0.2	1.4	
1/19/20	170	126	35	9		4	174	198	198	0.3	2.4	
1/20/20	239	176	51	12		7	246	270	258	0.4	3.1	
1/21/20						15		375	320	0.0	3.8	
1/22/20	399	304	71	24		17	416	444	390	0.7	4.7	
1/23/20	494	365	106	23	31	24	549	549	495	0.9	5.9	100%
1/24/20	658	472	129	57	32	39	729	729	572	1.2	6.8	100%
1/25/20	915		221		85	52	1,052	1,052	618	1.8	7.4	100%
1/26/20	1,645	1,013	563	69	44	76	1,423	1,423	698	2.4	8.3	100%
1/27/20	2,567	1,877	563	127	47	100	2,714	2,714	1,590	4.6	19.0	100%

1/28/20	3,349	2,450	671	228	80	125	3,554	3,554	1,905	6.1	22.8	100%
1/29/20	4,334	3,346	711	277	90	162	4,586	4,586	2,261	7.8	27.0	100%
1/30/20	5,486	4,392	804	290	116	204	5,806	5,806	2,639	9.9	31.5	100%
1/31/20	6,738	5,444	956	338	166	249	7,153	7,153	3,215	12.2	38.4	100%
2/1/20	8,565	7,003	1,118	444	215	294	9,074	9,074	4,109	15.5	49.1	100%
2/2/20	9,618	7,917	1,223	478	295	350	10,263	11,177	5,142	17.5	56.4	92%
2/3/20	10,990	8,857	1,557	576	396	414	11,800	13,522	6,384	20.2	66.6	87%
2/4/20	12,627	10,107	1,809	711	520	479	13,626	16,678	8,351	23.3	81.6	82%
2/5/20	14,314	11,230	2,328	756	633	549	15,496	19,665	10,117	26.5	95.3	79%
2/6/20	15,804	11,802	3,161	841	817	618	17,239	22,112	11,618	29.5	108.3	78%
2/7/20	19,835	14,640	4,188	1,007	1,113	699	21,647	24,953	13,603	37.0	141.1	87%
2/8/20	20,993	15,746	4,093	1,154	1,439	780	23,212	27,100	14,982	39.7	153.4	86%
2/9/20	22,160	16,655	4,269	1,236	1,795	871	24,826	29,631	16,902	42.4	169.3	84%
2/10/20	25,087	18,743	5,046	1,298	2,222	974	28,283	31,728	18,454	48.3	196.7	89%
2/11/20	26,121	18,880	5,724	1,517	2,639	1,068	29,828	31,728	18,454	51.0	207.4	94%
2/12/20	33,693	26,609	5,647	1,437	3,441	1,310	38,444	48,206	32,994	65.7	314.6	80%
2/13/20	36,719	27,081	7,953	1,685	4,131	1,426	42,276	51,986	35,991	72.3	349.9	81%
2/14/20	38,107	27,955	8,276	1,876	4,774	1,457	44,338	54,406	37,914	75.8	369.4	81%
2/15/20	39,447	29,051	8,439	1,957	5,623	1,596	46,666	56,249	39,462	79.8	391.4	83%
2/16/20	40,814	31,017	8,024	1,773	6,639	1,696	49,149	58,182	41,152	84.0	415.6	84%
2/17/20	41,957	30,987	9,117	1,853	7,862	1,789	51,608	59,989	42,752	88.2	439.7	86%
2/18/20	43,471	32,225	9,289	1,957	9,128	1,921	54,520	61,682	44,412	93.2	469.3	88%
2/19/20	43,745	32,567	9,128	2,050	10,337	2,029	56,111	62,013	45,027	95.9	487.0	90%
2/20/20	42,056	31,059	8,979	2,018	11,788	2,144	55,988	62,422	45,346	95.7	486.2	90%
2/21/20	41,036	30,144	8,400	2,492	13,557	2,250	56,843	63,454	45,660	97.2	489.0	90%
2/22/20	39,073	29,643	7,776	1,654	16,738	2,399	58,210	64,287	46,607	99.5	504.5	91%
2/23/20	37,896	29,221	7,090	1,585	18,854	2,563	59,313	64,786	47,071	101.4	515.2	92%
2/24/20	36,242	27,916	6,840	1,486	20,912	2,615	59,769	65,187	47,441	102.2	520.0	92%
2/25/20	34,978	26,994	6,581	1,403	23,200	2,641	60,819	65,596	47,824	104.0	530.1	93%

Sent from Mail [go.microsoft.com] for Windows 10

From: Tracey McNamara

Sent: Wednesday, February 26, 2020 8:35 PM

To: Richard Hatchett; Tom Bossert

Cc: Caneva, Duane; Carter Mecher; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

FEB 26 2020

QIAGEN announces worldwide shipments of QIAstat-Dx test kits for SARS-CoV-2

• QIAstat-Dx Respiratory 2019-nCoV Panel rapidly differentiates novel coronavirus from 21 other pathogens implicated in serious respiratory syndromes

• Panel being tested at four hospitals in China after initial evaluation on clinical samples by a leading Paris hospital

• Adds to QIAGEN's portfolio of molecular testing solutions to aid in global public health emergency

Hilden, Germany, and Germantown, Maryland, February 26, 2020 – QIAGEN (NYSE: QGEN; Frankfurt Prime Standard: QIA) today announced it has shipped its newly developed QIAstat-Dx Respiratory Panel 2019-nCoV test kit to four hospitals in China for evaluation. The new kit detects the novel coronavirus SARS-CoV-2 and adds rapid Sample to Insight syndromic testing to QIAGEN's portfolio of molecular testing solutions in the public health emergency. QIAGEN is also in the process of shipping QIAstat-Dx testing kits to public health institutions in other regions, including Europe, South-East Asia, and the Middle East.

Since January QIAGEN has been providing instruments and consumables to support detection of the virus in China and other markets. Official protocols for SARS-CoV-2 detection include QIAGEN extraction kits, reagents and instruments for real-time polymerase chain reaction (RT-PCR) workflows. Customers also are deploying QIAsymphony modular instruments and NeuMoDx integrated PCR systems to automate higher-throughput processing of their laboratory-developed tests for SARS-CoV-2.

"Our dedicated task force has moved very fast to develop and make available the QIAstat-Dx respiratory panel with SARS-CoV-2 detection. We are partnering closely with authorities and customers around the world to bring rapid, accurate diagnosis to the fight against this deadly infectious disease," said Thierry Bernard, Interim CEO of QIAGEN and Senior Vice President, Head of the Molecular Diagnostics Business Area. "As we have in past health crises such as SARS and the swine flu, QIAGEN is working hard to deliver better, faster testing solutions for hospitals and public health institutions to aid in the effort to monitor and bring the outbreak under control. Our employees' extraordinary response embodies QIAGEN's core mission to make improvements in life possible."

The QIAstat-Dx system was introduced in Europe in 2018 as a CE-product and cleared by the Food and Drug Administration (FDA) in the United States in mid-2019. It enables fast, cost-effective and easy-to-use syndromic testing with novel Sample to Insight workflows. The system streamlines molecular testing from end to end. A technician simply loads a clinical sample (such as a swab) into a single-use QIAstat-Dx cartridge and places it in the analyzer. QIAGEN chemistries for sample processing and analysis are built in, and the QIAstat-Dx instrument delivers results in about one hour.

New QIAstat-Dx testing solution for SARS-CoV-2

The QIAstat-Dx Respiratory 2019-nCoV Panel is a new version of the existing QIAstat-Dx Respiratory Panel for differential analysis of 21 viral and bacterial pathogens in respiratory syndromes. Once the SARS-CoV-2 genome was sequenced in January, QIAGEN developed two highly sensitive assays to detect SARS-CoV-2 targeting Orb1ab and the E gene. The addition of these targets provides parallel tools for combined detection of the novel coronavirus with increased sensitivity.

The expanded QIAstat-Dx panel is currently being evaluated at the Bichat-Claude Bernard Hospital in Paris. “After more than a year of experience using the existing QIAstat-Dx Respiratory Panel to evaluate patients coming into our Emergency Department with respiratory syndromes, we are evaluating the new panel with SARS-CoV-2 against RT-PCR testing using WHO recommended protocols. The QIAstat-Dx solution can provide results in about one hour, with high sensitivity and specificity and minimal hands-on time for hospital or laboratory personnel,” said Dr. Benoit Visseaux, Associate Professor of Virology at Bichat-Claude Bernard Hospital in Paris.

Amid the rapidly evolving response to the coronavirus outbreak, the regulatory status of the QIAstat-Dx Respiratory Panel will vary by location. QIAGEN will apply for emergency authorization for marketing of the new panel from the U.S., the Korean KCDC/MFDS, and FDA and China’s National Medical Products Administration (NMPA); the panel will be available with CE-IVD marking in Europe and other markets.

Multiple other QIAGEN testing solutions for SARS-CoV-2

QIAGEN has moved quickly on several fronts to provide molecular testing solutions to researchers working to counter the international threat from the SARS-CoV-2 virus. Building on its strong position and experience in molecular testing for infectious diseases, QIAGEN is providing a variety of solutions:

- Enabling laboratory-developed tests (LDTs) – extraction kits, PCR enzymes and instruments, supporting in-house testing by laboratories and public health institutions. CDC guidelines for RT-PCR testing list QIAGEN’s EZ1 DSP Virus kits, which run on EZ1 Advanced workstations, and QIAamp DSP Viral RNA Mini kits, which can be automated on QIAcube instruments. Chinese authorities and the Berlin Charitè protocol also include QIAGEN consumables.
- Mid- and high-throughput automation – QIAsymphony modular systems for sample preparation and PCR analysis, as well as NeuMoDx 96 and 288 systems for fully integrated PCR analysis, enabling customers to implement higher-throughput solutions for laboratory-developed RT-PCR tests. QIAGEN recently started placing NeuMoDx systems in China, for use in with LDTs in SARS-CoV-2 testing.
- Additional real-time PCR tests – two new RT-PCR tests for detection of SARS-CoV-2 have been developed at QIAGEN sites in China and the United States and will be available for Research Use Only. The company is investigating potential emergency use options for the automated PCR-based test solutions.

Further information can be also found here [corporate.qiagen.com]

About QIAGEN

QIAGEN N.V., a Netherlands-based holding company, is the leading global provider of Sample to Insight solutions that enable customers to gain valuable molecular insights from samples containing the building blocks of life. Our sample technologies isolate and process DNA, RNA and proteins from blood, tissue and other materials. Assay technologies make these biomolecules visible and ready for analysis. Bioinformatics software and knowledge bases interpret data to report relevant, actionable insights. Automation solutions tie these together in seamless and cost-effective workflows. QIAGEN provides solutions to more than 500,000 customers around the world in Molecular Diagnostics (human healthcare) and Life Sciences (academia, pharma R&D and industrial applications, primarily forensics). As of December 31, 2019, QIAGEN employed approximately 5,100 people in over 35 locations worldwide. Further information can be found athttp://www.qiagen.com [qiagen.com].

From: Richard Hatchett <richard.hatchett@cepi.net>

Sent: Wednesday, February 26, 2020 3:34 PM

To: Tom Bossert <tom.bossert@me.com>

Cc: Caneva, Duane <duane.caneva@hq.dhs.gov>; Carter Mecher <cmecher@charter.net>; Dr. Eva K Lee <evalee-gatech@pm.me>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>

Subject: Re: Red Dawn Breaking Bad, Start Feb 24

Bob K live in the White House Briefing Room now - live feed on WaPo site -

Sent from my iPhone

> On 26 Feb 2020, at 23:08, Tom Bossert <tom.bossert@me.com> wrote:
>
> Why are CDC numbers (on their website) so low? E.g., 14,000 deaths.
>
> -Tom
>
> > On Feb 26, 2020, at 5:56 PM, Caneva, Duane <duane.caneva@hq.dhs.gov> wrote:
> >
> > Master Question List—things to think about, updated.
> >
> > Also,
> >
> > https://www.washingtonpost.com/health/2020/02/25/cdc-coronavirus-test/ [washingtonpost.com]
> >
> > ---
> >
> > **From:** Carter Mecher <cmecher@charter.net>
> >
> > **Sent:** Wednesday, February 26, 2020 3:14 PM
> >
> > **To: Subject:** RE: Red Dawn Breaking Bad, Start Feb 24

Updated cruise ship data including data we can find by country

Country	Passengers/Crew	Cases Hospitalized in Japan	Cases Confirmed upon Repatriation	Total Confirmed Cases	ICU Admissions	Deaths	% Infected
US	434	44	42	86			20%
Hong Kong	364	55	4	59			16%
Canada	256	47		47			18%
Australia	241	47	7	54			22%
UK	78	6	4	10			13%
Italy	35						
South Korea	14						
Israel	11	3	2	5			45%
Japan						4	
Subtotal	1,433	202	59	261			
Total	**3,711**			**744**			**20%**

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the			

	infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tested
11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		1,219 tested; 73 asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,723 tested; 19 seriously ill
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,066 tested; 28 seriously ill; 322 asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	744	4	3,894 tested; 35 seriously ill; 380 asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested	746	4	

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 1:46 PM

To: Richard Hatchett; Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Number of cases from Diamond Princess cruise ship rises to 42 in US (plus 44 in Japan), for total of 86.

<image001.png>

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 12:34 PM

To: Richard Hatchett; Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

I found a treasure trove of information and analysis of the Diamond Princess cruise ship outbreak. Japan's National Institute of Infectious Diseases published a Field Briefing on Feb 21, 2020
https://www.niid.go.jp/niid/en/2019-ncov-e.html [niid.go.jp]

I took the material and built a slide deck.

Take a look.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Wednesday, February 26, 2020 9:08 AM

To: Richard Hatchett; Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Things keep getting more complicated wrt the cruise ship outbreak. Another 45 patients (out of 813 passengers who let off the ship) have developed symptoms and will require testing.

TOKYO: Dozens of passengers allowed off a coronavirus-stricken ship have developed symptoms including fever and will be asked to take tests for the virus, Japan's health minister said Wednesday.

The news came as another death linked to the virus in Japan was reported and the government urged organisers of major events in the next fortnight to consider cancelling or downsizing them to help curb the spread of infections.

The government has contacted 813 former passengers of the Diamond Princess cruise ship and found "45 people had certain symptoms", Health Minister Katsunobu Kato told parliament.

"We asked all of them (who have symptoms) to see a doctor and to take tests."

Around 970 people were allowed off the boat last week after testing negative for the virus, but several have subsequently been diagnosed with the illness.

Japan has come under increasing pressure over its handling of the crisis on the vessel.

Those allowed off the ship after a 14-day quarantine were asked to stay inside, but no formal measures restricting their movement were imposed.

Opposition lawmakers have blamed the government for failing to implement a fresh 14-day quarantine after the passengers left the cruise ship – as was required by countries that repatriated citizens from the boat.

Infections have also continued to rise inside Japan, and Prime Minister Shinzo Abe on Wednesday said hosting large events should be reconsidered.

"In light of the significant infection risks, we will ask that national sporting or cultural events that will attract large crowds be either cancelled, postponed or downsized for the next two weeks," Abe told a cabinet task force meeting on the outbreak.

Concerts cancelled

After the announcement, Nippon Professional Baseball Organization said its unofficial spring games through March 15 would be held in empty stadiums, before the official season opens on March 20.

Some top Japanese musicians, including all-male group Exile and female trio Perfume cancelled concerts, while Tokyo Girls Collection fashion show on Saturday will be held with no audience, according to their organisers.

The virus has also forced professional football, rugby, golf, tennis and other sports to reschedule games or to hold their events with no fans in attendance.

The government has also asked state-operated museums and theatres to consider closing or cancelling shows.

The government has repeatedly said that the coming weeks will be critical in limiting the spread of the virus in Japan.

But its measures have been largely advisory, including recommending that people work from home or commute off-peak.

The recommendations come as the local government in northern Hokkaido announced in its latest update on the virus the death of a local resident, whose name, gender and age were not revealed.

The governor of Hokkaido, where at least 38 people have been diagnosed, said he was requesting local municipalities to close public schools for one week from Thursday.

In Tokyo meanwhile, the regional education board said public high schools may start classes late to spare students travelling on packed commuter trains.

Japan has seen at least 165 infections separate from the outbreak on the cruise ship.

The outbreak has raised fears that the Olympic Games to be hosted in Tokyo this summer could be cancelled, a possibility government officials and organisers have rejected.

“We have not thought about it. We have not heard about it. We have made inquiries, and we were told there is no such plan,” Tokyo 2020 CEO Toshiro Muto told reporters.

“Our basic thinking is to conduct the Olympics and Paralympics as planned. That’s our assumption.”

Sent from Mail [go.microsoft.com] for Windows 10

From: Richard Hatchett

Sent: Wednesday, February 26, 2020 9:01 AM

To: Carter Mecher; Caneva, Duane; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

https://www.theguardian.com/world/2020/feb/26/wuhan-nurses-plea-international-medics-help-fight-coronavirus [theguardian.com]

Moving description from the front lines of conditions in Wuhan . . . And a picture of what we will likely face soon . . .

From: Carter Mecher <cmecher@charter.net>

Sent: 26 February 2020 04:11

To: Caneva, Duane <duane.caneva@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Dr. Eva K Lee <evalee-gatech@pm.me>; Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; HAMILTON, CAMERON <cameron.hamilton@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>; Ryan Morhard <Ryan.Morhard@weforum.org>; Stack, Steven J (CHFS DPH) <steven.stack@ky.gov>

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Watching ILI in a few key areas--NYC, Chicago, CA, and TX. Week 7 data (week ending Feb 15). Flu is now trending down. This data is a little old (now 10 days old). Week 8 data coming soon.

Chicago

NYC

CA

TX

Sent from Mail [go.microsoft.com] for Windows 10

From: Caneva, Duane

Sent: Tuesday, February 25, 2020 10:40 PM

To: Carter Mecher; Richard Hatchett; Dr. Eva K Lee; Martin, Gregory J; Walters, William; HAMILTON, CAMERON; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard; Stack, Steven J (CHFS DPH)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

ASTHO sponsored meeting hosted by White House this evening. Good discussion and input from many state and local Public Health Official partners. We are all in this together, and preparedness and response slowly transitions to community mitigation efforts and the frontline boots on the ground.

Still only 14 cases *detected*.

Red Dawn Breaking…

From: Carter Mecher <cmecher@charter.net>

Sent:

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

https://www.sciencemag.org/news/2020/02/coronavirus-infections-keep-mounting-after-cruise-ship-fiasco-japan [sciencemag.org]

TOKYO—All but a handful of the passengers of the disease-stricken Diamond Princess cruise ship berthed in Yokohama have disembarked. But for Japan, the saga is far from over. Much of the crew remains on board, enduring another 14 days of quarantine—although this time under conditions that Japanese officials hope will prevent any additional infections.

But there has been another worrisome development: As of today, eight public servants who worked on the ship to support the quarantine have tested positive for COVID-19, and more may follow. Most of the roughly 90 health ministry employees who visited the ship during the first 2-week quarantine that ended on 19 February initially returned to their normal work duties, but in light of the infections, the health ministry yesterday revised its policy and now those potentially exposed to the virus on the Diamond Princess are self-quarantining at home for 14 days, according to a ministry official who asked not to be identified.

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Tuesday, February 25, 2020 7:41 PM

To: Richard Hatchett; Dr. Eva K Lee

Cc: Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Some updates. Will send the Hubei/Wuhan update later.

Singapore and Hong Kong continue to hold the line. I attached the case studies we did to monitor when they pulled the trigger in NPIs—lessons for us and for others.

Singapore (+1 case) 91 cases/0 deaths /7 in ICU (still 4 kids—none currently hospitalized/2 were asymptomatic

Hong Kong (+4) 85 cases/2 deaths/ 4 critical; 2 serious (still no kids reported)

Japan 170 cases/1 death/7 serious

Explosive growth in South Korea, Italy, and Iran

South Korea 977 cases/11 deaths/6 critical

99 out of 102 people in the psychiatric department of a hospital in South Korea tested positive for coronavirus infection.

https://www.bloomberg.com/news/articles/2020-02-22/nearly-all-patients-in-south-korean-psychiatric-ward-have-virus [bloomberg.com]

Yesterday, the Korean government raised the alert level from Orange(Level 3) to Red (Level 4) in order to prepare for a possible nation-wide transmission. It was a proactive decision taking into consideration the pattern and speed of transmission.

Italy 322 cases/11 deaths/114 in hospital; 35 in ICU

Public events in Veneto and Lombardy are banned - All schools in Lombardy and Veneto will be closed - Venice Carnival will be shut down, shows canceled at Milan La Scala

Iran 95 cases/16 deaths

Bahrain 23 cases/0 deaths

Bahrain closes all kindergartens, schools, universities, and training centers in the country for at least 2 weeks to prevent the spread of coronavirus

New countries today

- Algeria
- Austria
- Croatia
- Switzerland

Sent from Mail [go.microsoft.com] for Windows 10

From: Richard Hatchett

Sent: Tuesday, February 25, 2020 5:47 PM

To: Dr. Eva K Lee

Cc: Carter Mecher; Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan;

eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G; Ryan Morhard

Subject: Re: Red Dawn Breaking Bad, Start Feb 24

Big news today from China is the continued drop in new cases (down to just over 500 today) and the number of provinces (>20) with no new cases at all. It remains to be seen if China can hold the line but its interventions ARE working to reduce transmission dramatically and Carter is right that Singapore and Hong Kong are demonstrating the value of an early, rapid, aggressive response. Whether the rest of the world, and the U.S., can mount a similarly effective response I do not know, but China has shown what can be done with NPIs.

+ Ryan Morhard from WEF. Welcome Ryan -

Sent from my iPhone

> On 25 Feb 2020, at 18:14, Dr. Eva K Lee <evalee-gatech@pm.me> wrote:
>
> It is unclear if S. Korea will be able to setup so many temp. beds as China. They're very slow in picking up social distancing and social awareness, proper NPI. Iran is way behind in terms of medical care. I fear they will have very high mortality.
>
> evalee-gatech@pm.me
>
> https://newton.isye.gatech.edu/DrLee/ [newton.isye.gatech.edu]
>
> mobile: 404-432-6835
>
> Sent with ProtonMail [protonmail.com] Secure Email.
>
> ------- Original Message -------
>
> On Tuesday, February 25, 2020 11:34 AM, Carter Mecher <cmecher@charter.net> wrote:
>
> > South Korea now has 977 cases and 10 deaths. They are about where Wuhan was on January 25th (so about 1 month behind). Wuhan was overwhelmed less than 2 weeks later. I would expect the same for South Korea with the epicenter being in Seoul.
> >
> > I think Iran is about at the same point (maybe even a little ahead) of South Korea. Tehran is another very large city that will likely becomes its epicenter.
> >
> > I see a few hopeful signs. Singapore and Hong Kong have done a great job thus far and have implemented NPIs very early. Both have great surveillance. They are holding the line. They are also small and islands. Japan on the other hand is struggling and hasn't been as aggressive as Singapore and Hong Kong.
> >
> > The other thing that gives me hope is what I see in Hubei and Wuhan. I realize the data is a little sketchy because China has gone back and forth with the definition of cases, but I tried to smooth that over by looking at cumulative hospitalization rates per 100,000 (like we do for flu). Hubei (and Wuhan is a city within Hubei) reports each day the current number of people in the hospital (# currently in severe condition, # in critical condition), cumulative number of hospital discharges, cumulative deaths, and cumulative cases. From this we can estimate cumulative hospitalizations and then rates. 92% of the cases have been hospitalized (up thru Feb 2nd 100% of the cases they reported were hospitalized). Knowing the number of cases in Wuhan, we have been estimating the number hospitalized assuming a similar % of the cases requiring hospitalization rate for Wuhan (that 92% of the cases are being hospitalized—that number is adjusted each day based on current data). So we really can't back out the Wuhan numbers from the Hubei numbers. The best we can do is compare Hubei totals (including Wuhan) with an estimate of Wuhan. This data is good enough to show that the Chinese appear to be slowing transmission outside of Wuhan (They were late to implement NPIs in Wuhan but were able to implement NPIs earlier in the epidemic outside of Wuhan because the outbreak had about a 2 week head-start in Wuhan).
> >
> > <E0B38B2300CE43F09DC37BFDDDB81F3C.png>
> >
> > We need to emulate the blue curve. If I could subtract Wuhan, this curve would be significantly lower.
> >
> > Remember the goals of NPIs.
> >
> > <CB432B1C32644B219725D229547BEDDC.png>

Sent from Mail [go.microsoft.com] for Windows 10

From: Richard Hatchett

Sent: Tuesday, February 25, 2020 10:30 AM

To: Carter Mecher; Dr. Eva K Lee

Cc: Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Death #4 from Diamond Princess.

https://twitter.com/BNODesk/status/1232124151789477889 [twitter.com]

From: Carter Mecher <cmecher@charter.net>

Sent: 25 February 2020 14:10

To: Dr. Eva K Lee <evalee-gatech@pm.me>

Cc: Martin, Gregory J <MartinGJ@state.gov>; Walters, William <WaltersWA2@state.gov>; cameron.hamilton@hq.dhs.gov; Richard Hatchett <richard.hatchett@cepi.net>; Caneva, Duane <duane.caneva@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <David.Wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Lee, Scott <Scott.Lee@hhs.gov>; Padget, Larry G <PadgetLG@state.gov>

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

We should plan assuming we won't have enough PPE—so need to change the battlefield and how we envision or even define the front lines. The frontlines for mild illness need to pivot from our usual way of dealing with ILI in our clinics and ERs to non-face-to-face alternatives for the delivery of care (by phone/telehealth/home care). It means we need to shrink the problem and think of COVID patients in two groups: (1) those with mild enough disease that they can be managed thru self-care in the home; and (2) those will more severe disease that cannot be managed at home and likely require hospitalization. The first group needs to be managed by phone/telehealth with "prescriptions" for home isolation qD X 14 days (no refills) and home isolation for household members qD X 14 days (refills allowed). And only the second group should be coming to our ERs. It is why we need to look broadly at our healthcare system (even including minute clinics at CVS/Walgreens and stand alone urgent care centers). We need to start introducing this now.

Sent from Mail [go.microsoft.com] for Windows 10

From: Dr. Eva K Lee

Sent: Tuesday, February 25, 2020 8:47 AM

To: Carter Mecher

Cc: Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Lee, Scott; Padget, Larry G

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

This is extremely troubling that healthcare workers, including medical leaders are contracting the COVID-19 while caring for the infected. I am very worried about the supply-chain regarding all the protective gears, medical supplies and everything that is needed to combat this disease. The demand is rising and there is no guarantee that we can continue with the supply since the supply-chain has been disrupted.

I do not know if we have enough resources to protect all frontline providers.

evalee-gatech@pm.me

https://newton.isye.gatech.edu/DrLee/ [newton.isye.gatech.edu]

mobile: 404-432-6835

Sent with ProtonMail [protonmail.com] Secure Email.

------- Original Message -------

On Tuesday, February 25, 2020 8:37 AM, Carter Mecher <cmecher@charter.net> wrote:

> For those who cannot access Twitter but can access YouTube, here is the video.
>
> https://www.youtube.com/watch?v=4AX4dbXIsSw [youtube.com]
>
> Imagine if something like this happened in the US with an equivalent national leader (watching him coughing during a press conference, rubbing his nose, and wiping the sweat from his forehead, and leaning on the podium with one hand while someone else is speaking) and then learning afterwards that he is infected with COVID. That is what has happened in Iran.
>
> Sent from Mail [go.microsoft.com] for Windows 10
>
> ---
>
> **From:** Carter Mecher
>
> **Sent:** Tuesday, February 25, 2020 8:01 AM
>
> **To:** Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott
>
> **Cc:** Padget, Larry G
>
> **Subject:** RE: Red Dawn Breaking Bad, Start Feb 24
>
> Modeling isolation and social distancing (not)
>
> https://twitter.com/BNODesk/status/1232276183305400320 [twitter.com]
>
> Imagine how widespread it must be to see this?

Sent from Mail [go.microsoft.com] for Windows 10

From: Carter Mecher

Sent: Tuesday, February 25, 2020 7:20 AM

To: Martin, Gregory J; Walters, William; cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott

Cc: Padget, Larry G

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Just a word of caution. Here is what those numbers would mean. These are the projections using an attack rate of 30% (could send you the model in Excel and you can plug in whatever attack rate you like). I suspect that those CFRs are inflated because of case ascertainment issues (the actual denominator is much larger). The most recent background annual death data in the US (US Vital Statistics) is from 2017. It is useful to have those numbers of comparison.

I think those CFRs are on the high side., but don't have anything better to offer.

The best data we have for estimating CFR will be from the cruise ship, where we have a circumscribed population. That data is extremely valuable because the cruise ship had a crew of 1,045 (young and health) and 2,666 passengers (elderly). It will be important to look at each group separately. The data that I am aware of (all obtained thru open sources) is shared below this table).

AGE	2017 Census	2017 All Cause Mortality per 100,00	Actual 2017 All Cause Deaths	CFR	Projected 2019-nCoV Deaths	Ratio Projected Deaths to 2017 All Cause Deaths
<1 year	3,853,472	567.0	22,335	0.0%	0	0.00
1-4 years	16,085,388	24.3	3,880	0.0%	0	0.00
5 to 9 years	20,304,238	11.6	2,354	0.0%	0	0.00
10 to 14 years	20,778,454	15.5	3,217	0.2%	12,467	3.88
15 to 19 years	21,131,660	51.5	10,886	0.2%	12,679	1.16
20 to 24 years	22,118,635	95.6	21,139	0.2%	13,271	0.63
25 to 29 years	23,370,460	121.0	28,276	0.2%	14,022	0.50
30 to 34 years	21,972,212	145.4	31,939	0.2%	13,183	0.41
35 to 39 years	21,231,997	173.8	36,901	0.2%	12,739	0.35
40 to 44 years	19,643,373	218.4	42,895	0.4%	23,572	0.55
45 to 49 years	20,973,858	313.2	65,698	0.4%	25,169	0.38
50 to 54 years	21,401,094	488.0	104,444	1.3%	83,464	0.80
55 to 59 years	22,007,956	736.5	162,098	1.3%	85,831	0.53
60 to 64 years	19,987,702	1,050.2	209,908	3.6%	215,867	1.03
65 to 69 years	16,836,381	1,473.5	248,087	3.6%	181,833	0.73
70 to 74 years	12,847,065	2,206.9	283,523	8.0%	308,330	1.09
75 to 79 years	8,741,261	3,517.8	307,498	8.0%	209,790	0.68
80 to 84 years	5,965,290	5,871.7	350,261	14.8%	264,859	0.76
85 years and over	6,468,682	13,573.6	878,035	14.8%	287,209	0.33
Total population	**325,719,178**	**863.8**	**2,813,503**	**1.8%**	**1,764,286**	**0.63**

Attack Rate	30%

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the			

	infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tested
11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		1,219 tested; 73 asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,723 tested; 19 seriously ill
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,066 tested; 28 seriously ill; 322 asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan	691	4	

Total passengers and crew:

691 cases (~50% asymptomatic) / 28 seriously ill (4%) / 4 deaths (a lagging measure)

So overall, a lower limit CFR of 0.6%--this includes the young healthy crew members and the elderly passengers.

Assuming the number of seriously ill approximates the % of cases requiring ICU care (4%) and the typical mortality rates for patients with pneumonia admitted to the ICU are 15%-50%, then CFR would be estimated to be0.6%-2% overall. The ICU data is sketchy (last data point I have is from Japan only on Feb 20). If someone has actual numbers of patients admitted to the ICU, just plug in and make your won estimate.

Americans:

Total Americans 434

- 329 evacuated
- 61 remained on board
- 44 in hospitals in Japan

80 cases (44 hospitalized in Japan/36 cases in US)

Media has only reported on a single American who was in the ICU in Japan (that is from Feb 11). There is nothing being reported in the media on current numbers of cases in ICU of Americans in the US or Japan. If anyone has that data (but cannot share it), would suggest you take that number divide it by the number of known American cases (80) to estimate a % of cases requiring ICU care. Multiply that number by 15%-50% to get a range of CFRs.

A while back I shared some estimates based upon the data from the cruise ship and compared to the 2005 HHS projections of a severe pandemic. Just to put those numbers in perspective. The 2005 estimates were that 30% of the population would become ill (30% attack rate); 11% of those who became ill would require hospitalization; 1.6% of those who became ill would require ICU care; and 2% of those who became ill would die.

We are in the ballpark.

Sent from Mail [go.microsoft.com] for Windows 10

From: Martin, Gregory J

Sent: Tuesday, February 25, 2020 6:04 AM

To: Walters, William; cameron.hamilton@hq.dhs.gov; Richard Hatchett;

Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott; Carter Mecher

Cc: Padget, Larry G

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Wil,

This is what I've been using in our provider PowerPoint

Greg

Gregory J. Martin, MD

Chief, Tropical Medicine-Infectious Diseases

Bureau of Medical Services

US Department of State

2401 E St NW (SA-1)

Washington, DC 20522

BlackBerry while traveling: 202 230-0704

MartinGJ@state.gov

From: Walters, William <WaltersWA2@state.gov>

Sent: Tuesday, February 25, 2020 6:56 PM

To: cameron.hamilton@hq.dhs.gov; Richard Hatchett <richard.hatchett@cepi.net>; Caneva, Duane <duane.caneva@hq.dhs.gov>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Martin, Gregory J <MartinGJ@state.gov>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <David.Wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee-gatech@pm.me>; Lee, Scott <Scott.Lee@hhs.gov>; Carter Mecher <cmecher@charter.net>

Subject: Re: Red Dawn Breaking Bad, Start Feb 24

Colleagues,

Does anyone have a case fatality rate projection broken down by age?

William A. Walters, M.D., MBA

Executive Director and

Managing Director for Operational Medicine

Bureau of Medical Services

U.S. Department of State

(703) 957-9493

walterswa2@state.gov

walterswa2@state.sgov.gov

wwalters@state.ic.gov

From: Carter Mecher <cmecher@charter.net>
Sent: Monday, February 24, 2020 4:58:53 PM
To: cameron.hamilton@hq.dhs.gov <cameron.hamilton@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; Caneva, Duane <duane.caneva@hq.dhs.gov>; rjglassjr@gmail.com <rjglassjr@gmail.com>; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; Walters, William <WaltersWA2@state.gov>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU <jwleduc@utmb.edu>; rbaric@email.unc.edu <rbaric@email.unc.edu>; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Martin, Gregory J <MartinGJ@state.gov>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov <eric.mcdonald@sdcounty.ca.gov>; Wade, David <David.Wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov <david.gruber@dshs.texas.gov>; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee-gatech@pm.me>; Lee, Scott <Scott.Lee@hhs.gov>
Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Several new countries announced first confirmed cases

Afghanistan

Bahrain

Iraq

Kuwait

Oman

Sent from Mail [gcc01.safelinks.protection.outlook.com] for Windows 10

From: Carter Mecher

Sent: Monday, February 24, 2020 1:51 PM

To: cameron.hamilton@hq.dhs.gov; Richard Hatchett; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; Walters, William (STATE.GOV); HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Martin, Gregory J (MartinGJ@state.gov); Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott (OS/ASPR/EMMO)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

The number of Americans confirmed positives from the cruise ship evacuated to the US was incorrect, it should have been 36

Sent from Mail [gcc01.safelinks.protection.outlook.com] for Windows 10

From: Richard Hatchett

Sent: Monday, February 24, 2020 1:28 PM

To: Carter Mecher; Caneva, Duane; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; Walters, William (STATE.GOV); HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; cameron hamilton (hamiltoncd@state.gov); Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Martin, Gregory J (MartinGJ@state.gov); Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott (OS/ASPR/EMMO)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Interesting account from China –

https://www.huffpost.com/entry/coronavirus-covid19-life-china-precautions_n_5e4eaa73c5b6df1e8be3d4d7
[gcc01.safelinks.protection.outlook.com]

From: Carter Mecher <cmecher@charter.net>

Sent: 24 February 2020 18:18

To: Caneva, Duane <duane.caneva@hq.dhs.gov>; Richard Hatchett <richard.hatchett@cepi.net>; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR) <Daniel.Dodgen@HHS.GOV>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; David Marcozzi <DMarcozzi@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Lisa Koonin <lkoonin1@gmail.com>; Walters, William (STATE.GOV) <walterswa2@state.gov>; HARVEY, MELISSA <melissa.harvey@hq.dhs.gov>; WOLFE, HERBERT <HERBERT.WOLFE@hq.dhs.gov>; Eastman, Alexander <alexander.eastman@hq.dhs.gov>; EVANS, MARIEFRED <mariefred.evans@associates.hq.dhs.gov>; cameron hamilton (hamiltoncd@state.gov) <hamiltoncd@state.gov>; Callahan, Michael V.,M.D. <MVCALLAHAN@mgh.harvard.edu>; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA) <Robert.Johnson@hhs.gov>; Yeskey, Kevin <kevin.yeskey@hhs.gov>; Disbrow, Gary (OS/ASPR/BARDA) <Gary.Disbrow@hhs.gov>; Redd, John (OS/ASPR/SPPR) <John.Redd@hhs.gov>; Hassell, David (Chris) (OS/ASPR/IO) <David.Hassell@hhs.gov>; Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Lawler, James V <james.lawler@unmc.edu>; Martin, Gregory J (MartinGJ@state.gov) <MartinGJ@state.gov>; Borio, Luciana <LBorio@iqt.org>; Hanfling, Dan <DHanfling@iqt.org>; eric.mcdonald@sdcounty.ca.gov; Wade, David <david.wade@hq.dhs.gov>; TARANTINO, DAVID A <david.a.tarantino@cbp.dhs.gov>; WILKINSON, THOMAS <THOMAS.WILKINSON@hq.dhs.gov>; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA <sangeeta.kaushik@hq.dhs.gov>; Nathaniel Hupert <nah2005@med.cornell.edu>; Tracey McNamara <tmcNamara@westernu.edu>; Dr. Eva K Lee <evalee-gatech@pm.me>; Lee, Scott (OS/ASPR/EMMO) <Scott.Lee@hhs.gov>

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Headlines:

Markets In Total Panic Mode As Coronavirus Cases Jump

"It's Total Panic" - Store-Shelves

Empty As Virus-Spread Sparks Panic-Buying Food & Masks Across Italy

Sent from Mail [gcc01.safelinks.protection.outlook.com] for Windows 10

From: Carter Mecher

Sent: Monday, February 24, 2020 1:01 PM

To: Caneva, Duane; Richard Hatchett; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; Walters, William (STATE.GOV); HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; cameron hamilton (hamiltoncd@state.gov); Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Martin, Gregory J (MartinGJ@state.gov); Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Lee, Scott (OS/ASPR/EMMO)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

-Singapore +1 over the past 3 days (90 cases/0 deaths) 38 currently hospitalized, 7 in ICU

-Hong Kong now up to 81 cases/2 deaths

-South Korea continues to have explosive growth now up to 833 cases/7 deaths

-Japan is up to 156 cases/2 deaths

> **According to the Ministry of Health, Labor and Welfare, two new cases of infection have been confirmed on the 24th, including employees of the Ministry of Health, Labor and Welfare and quarantine officers who responded on a cruise ship. 7 staff members of the Ministry of Health, Labor and Welfare and quarantine officers have been confirmed +.**

-Italy has 227 cases/7 deaths

-Iran 61 cases/12 deaths

Sent from Mail [gcc01.safelinks.protection.outlook.com] for Windows 10

From: Caneva, Duane

Sent: Monday, February 24, 2020 12:30 PM

To: Richard Hatchett; rjglassjr@gmail.com; Dodgen, Daniel (OS/ASPR/SPPR); DeBord, Kristin (OS/ASPR/SPPR); Phillips, Sally (OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; Walters, William (STATE.GOV); HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; cameron hamilton (hamiltoncd@state.gov); Callahan, Michael V.,M.D.; jwleduc@UTMB.EDU; rbaric@email.unc.edu; Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler, James V; Martin, Gregory J (MartinGJ@state.gov); Borio, Luciana; Hanfling, Dan; eric.mcdonald@sdcounty.ca.gov; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; david.gruber@dshs.texas.gov; KAUSHIK, SANGEETA; Nathaniel Hupert; Tracey McNamara; Dr. Eva K Lee; Redd, John (OS/ASPR/SPPR); Carter Mecher; Yeskey, Kevin; Lee, Scott (OS/ASPR/EMMO)

Subject: RE: Red Dawn Breaking Bad, Start Feb 24

Singapore COVID-19 Guidance Page:

https://www.gov.sg/article/covid-19-sector-specific-advisories [gcc01.safelinks.protection.outlook.com]

Best,

Duane

From: Caneva, Duane

Sent: Monday, February 24, 2020 12:28 PM

To: Subject: Red Dawn Breaking Bad, Start Feb 24

Importance: High

All,

This is a new Red Dawn Email String. Please use this one going forward.

Best,

Duane

Duane C. Caneva, MD, MS

Chief Medical Officer

Department of Homeland Security

202-254-6901 (o)

202-821-5374 (c)

Duane.Caneva@hq.dhs.gov

DCaneva@dhs.ic.gov

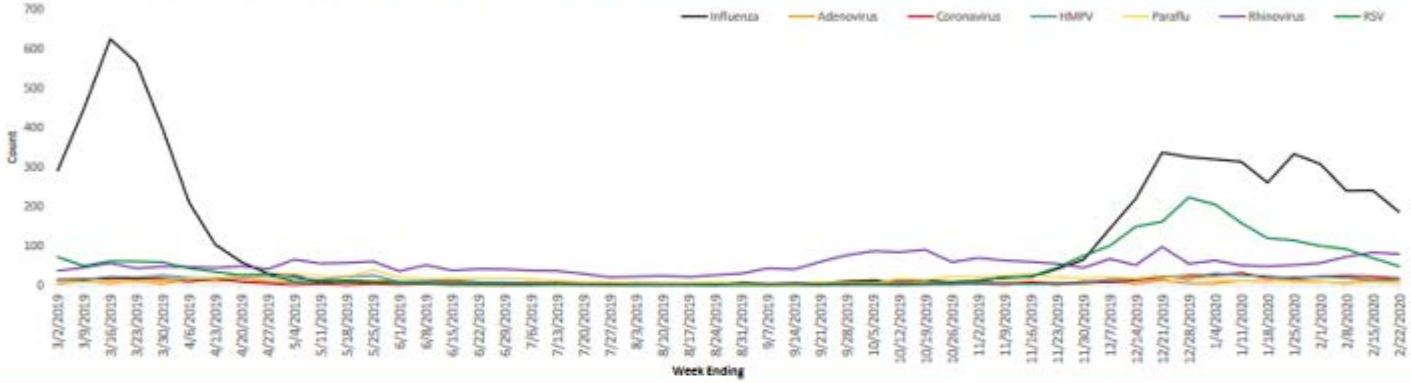
Executive Assistant: Nichole Burton,
nichole.burton2@associates.hq.dhs.gov, 202-254-8284

<2020_02_19_MQL_SARS-CoV-2_CLEARED FOR RELEASE.PDF>

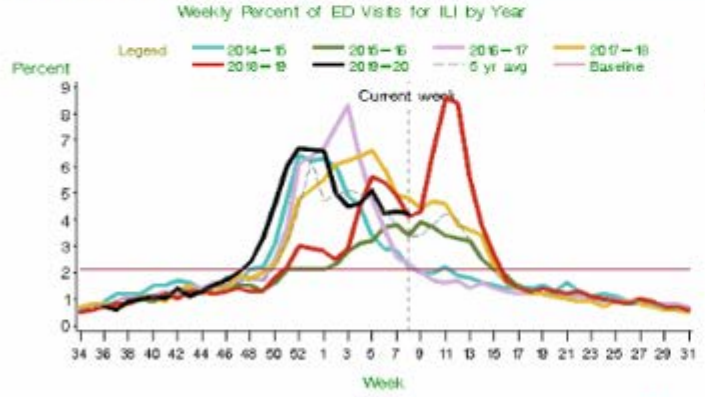
Public Health - Seattle & King County

Summary of Influenza Syndromic and Laboratory Surveillance

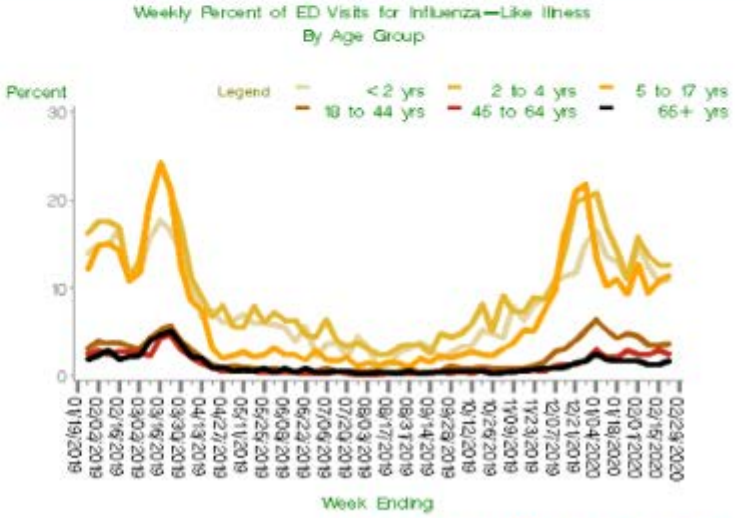
Influenza and other respiratory pathogens, PCR testing only (NREVSS)



King County syndromic surveillance



Note: The change from ICD–9 to ICD–10 codes in October 2015 may impact trends.
Last updated Feb 23, 2020 , 'current week' is week ending Feb 22, 2020
Baseline: Mean % ILI during non–flu weeks for previous three seasons, adding two standard deviations.
A non–flu week is a period of 2+ consecutive weeks where each one accounted for < 2% of the season's total number of specimens that tested positive for influenza by PCR.



ALLHOSPITALS, Last Updated Feb 26, 2020

From:	Duchin, Jeff
To:	Pillai, Satish K. (CDC/DDID/NCEZID/DPEI)
Cc:	Bell, Michael MD (CDC/DDID/NCEZID/DHQP); Armstrong, Gregory (CDC/DDID/NCEZID/OD); Kay, Meagan
Subject:	RE: exposures in hospitals
Date:	Sunday, March 1, 2020 7:41:53 AM

Thanks. Is John leading the entire field team response.

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Sent: Sunday, March 1, 2020 7:27 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Bell, Michael MD (CDC/DDID/NCEZID/DHQP) <zzb8@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Subject: RE: exposures in hospitals

We will be available when you want to talk – we're in meeting w/ dan and Nancy now, have a follow-up at 11 to 12 est, but can work around to find the support you need. Of course, John and team on ground are going to be best positioned. Best,
satish

Satish K. Pillai, MD MPH
Deputy Director, Division of Preparedness and Emerging Infections
CDR, U.S. Public Health Service
National Center for Emerging and Zoonotic Infectious Diseases
Centers for Disease Control and Prevention

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Sunday, March 1, 2020 10:16 AM
To: Bell, Michael MD (CDC/DDID/NCEZID/DHQP) <zzb8@cdc.gov>; Jernigan, Daniel B. (CDC/DDID/NCIRD/ID) <dbj0@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Cc: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
Subject: Fwd: exposures in hospitals

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Cc:	Kay, Meagan; Belay, Ermias (CDC/DDID/NCEZID/DHCPP)
Subject:	RE: exposures in hospitals
Date:	Sunday, March 1, 2020 7:41:16 AM

Thanks. If there are additional team members who could come out here and support hcf response (help track/exposures, provide care, esp nurses) that would be great. We rally need a field team to do testing of exposed HCW that are furloguhted – have not way to test people except in HCF and ithat is increasingly problematic.

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Sent: Sunday, March 1, 2020 7:37 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Bell, Michael MD (CDC/DDID/NCEZID/DHQP) <zzb8@cdc.gov>; Jernigan, Daniel B. (CDC/DDID/NCIRD/ID) <dbj0@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>
Cc: Kay, Meagan <Meagan.Kay@kingcounty.gov>; Belay, Ermias (CDC/DDID/NCEZID/DHCPP) <ebb8@cdc.gov>
Subject: RE: exposures in hospitals

Jeff, Meagan –
Ermias is now going to serve as the HQ POC for the field team, so you have 1 stop to make sure you get prompt responses to you inquiries. As I noted earlier, we will of course be available to support a call later today to discuss issue below.
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Cc:	Kay, Meagan; Belay, Ermias (CDC/DDID/NCEZID/DHCPP)
Subject:	RE: exposures in hospitals
Date:	Sunday, March 1, 2020 7:36:46 AM

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To: Duchin, Jeff
Cc: Bell, Michael MD (CDC/DDID/NCEZID/DHQP); Armstrong, Gregory (CDC/DDID/NCEZID/OD); Kay, Meagan
Subject: RE: exposures in hospitals
Date: Sunday, March 1, 2020 7:27:07 AM

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From: Armstrong, Gregory (CDC/DDID/NCEZID/OD)
To: Duchin, Jeff
Subject: RE: exposures in hospitals
Date: Sunday, March 1, 2020 7:45:23 AM

Tom Clark is the lead.
John is lead of the Infection Control/Prevention team (which is definitely the biggest part so far).

Here in Atlanta, Ermias Belay I is the POC

Gregory Armstrong, MD | currently assigned to CDC Coronavirus Response as Deputy Incident Manager | garmstrong@cdc.gov

---

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Sunday, March 1, 2020 10:42 AM
To: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Cc: Bell, Michael MD (CDC/DDID/NCEZID/DHQP) <zzb8@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
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Cc:	Bell, Michael MD (CDC/DDID/NCEZID/DHQP); Armstrong, Gregory (CDC/DDID/NCEZID/OD); Kay, Meagan
Subject:	RE: exposures in hospitals
Date:	Sunday, March 1, 2020 7:50:06 AM

Tom Clark is overall team lead,
John is leading the healthcare/infection control component
Best,
satish

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From:	Neafcy, Kenneth
To:	Nelson, Laurel; Fong, Michael; Formas, Stephanie; Apreza, Ernesto; Hightower, Kamaria; Sixkiller, Casey; Scoggins, Harold D; Best, Carmen; Humes, Bobby; Goings, Calvin; Hayes, Patty; Aguirre, Jesús; Schmit, Lucia; Grove, Kiersten
Cc:	Mantilla, Andres; Johnson, Jason; Thompson, Adrienne; Noble, Ben; Ranganathan, Shefali; Hirjak, Stephen
Subject:	Re: 8AM Conf Call NOTES - Covid-19 -- FIle access issue resolved.
Date:	Saturday, February 29, 2020 9:45:00 AM
Attachments:	image001.png 2020-02-29 830AM Conference Call Notes.docx

Everyone should be able to access this attachment.

From: Neafcy, Kenneth <Kenneth.Neafcy@seattle.gov>
Sent: Saturday, February 29, 2020 9:27 AM
To: Nelson, Laurel <Laurel.Nelson@seattle.gov>; Fong, Michael <Michael.Fong@seattle.gov>; Formas, Stephanie <Stephanie.Formas@seattle.gov>; Apreza, Ernesto <Ernesto.Apreza@seattle.gov>; Hightower, Kamaria <Kamaria.Hightower@seattle.gov>; Sixkiller, Casey <Casey.Sixkiller@seattle.gov>; Scoggins, Harold D <Harold.Scoggins@seattle.gov>; Best, Carmen <Carmen.Best@seattle.gov>; Humes, Bobby <Bobby.Humes@seattle.gov>; Goings, Calvin <Calvin.Goings@seattle.gov>; Hayes, Patty <Patty.hayes@kingcounty.gov>; Aguirre, Jesús <Jesus.Aguirre@seattle.gov>; Schmit, Lucia <Lucia.Schmit@seattle.gov>; Grove, Kiersten <Kiersten.Grove@seattle.gov>
Cc: Mantilla, Andres <Andres.Mantilla@seattle.gov>; Johnson, Jason <Jason.Johnson@seattle.gov>; Thompson, Adrienne <Adrienne.Thompson@seattle.gov>; Noble, Ben <Ben.Noble@seattle.gov>; Ranganathan, Shefali <Shefali.Ranganathan@seattle.gov>; Hirjak, Stephen <Stephen.Hirjak@seattle.gov>
Subject: 8AM Conf Call NOTES - Covid-19

All,

Attached are some rough notes from this mornings call. I apologize up front for any typos, but we wanted to get this out ASAP.

Any questions, please let me know.

KN

From: Nelson, Laurel
Sent: Friday, February 28, 2020 9:59 PM

To: Nelson, Laurel <Laurel.Nelson@seattle.gov>; Fong, Michael <Michael.Fong@seattle.gov>; Formas, Stephanie <Stephanie.Formas@seattle.gov>; Apreza, Ernesto <Ernesto.Apreza@seattle.gov>; Hightower, Kamaria <Kamaria.Hightower@seattle.gov>; Sixkiller, Casey <Casey.Sixkiller@seattle.gov>; Scoggins, Harold D <Harold.Scoggins@seattle.gov>; Best, Carmen <Carmen.Best@seattle.gov>; Humes, Bobby <Bobby.Humes@seattle.gov>; Goings, Calvin <Calvin.Goings@seattle.gov>; Hayes, Patty <Patty.hayes@kingcounty.gov>; Aguirre, Jesús <Jesus.Aguirre@seattle.gov>; Neafcy, Kenneth <Kenneth.Neafcy@seattle.gov>; Schmit, Lucia <Lucia.Schmit@seattle.gov>; Grove, Kiersten <Kiersten.Grove@seattle.gov>
Cc: Mantilla, Andres <Andres.Mantilla@seattle.gov>; Johnson, Jason <Jason.Johnson@seattle.gov>
Subject: 8AM Conf Call - Covid-19 Update
When: Saturday, February 29, 2020 8:00 AM-8:30 AM.
Where: Dial in: 206-727-8500; Code: 327327#

__Priority__

This evening we have learned of some emergent issues related to Public Health response efforts related to Covid-19. The fact pattern is such that SDM Fong has decided we need to convene a sub-set of dept heads for a call tomorrow at 8AM for a situation update and discussion of actions needed. SDM Fong wants all of you on the 8AM.

Laurel Nelson
Acting Director, **Office of Emergency Management**
City of Seattle
105 5th Avenue South, Suite #300; Seattle, WA 98104
D: 206.233-5075 **|** O: 206.233-5076 **|** laurel.nelson@seattle.gov
Facebook | *Twitter*
Sign up for emergency alerts from AlertSeattle: ***alert.seattle.gov***

Accredited since April 2016

830AM Conference Call Notes

Extreme sensitivity from health community that comms follow HIPPA protocol. Please use extreme discretion with sharing information prior to 1pm call.

The mayor is focused on

1. vulnerable populations
2. Homebound seniors

EVENT UPDATE

- DOH press briefing on 2 positive cases at 8pm
- At the same side notice was received that there was a cluster of cases of a nursing home facility. DOH will take the lead in announcing that at 1PM. Now there is a serious concern there will be focus on KC and Seattle
- Life Center of Kirkland .. 2 confirmed cases .. Redmond param, Kirkland Fire, AMR and hospital workers placed in quarantine for 14 days.

EMPLOYEE COMMUNICATIONS

Bobby Action Item: Need to Take PH Q&A and adjust for our employees. (work with Ernie, PH, Scoggins)
Ernie Action Item: Need to fully understand different methods in addition to email for folks in the field.

Bobby on point, between now and 11:30—clarify what we will do and what they should be ready for. Sketch out: city wide comms to employees, coordinated efforts and outreach to labor unions,

- Who should take the lead in adjusting FAQ for city employees—SDHR has been coordinating with PHSKC. Sent draft message to mayors comms team yesterday—can make any changes based on current situation, this is ready to go. Preference to share the message with all employees today. Is there any different message for front line employees.
- Once we send out an email there will be a lot of questions. CSB, Customer Neighborhood Centers—how does this model change. Ernie will draft talking points from the letter, will put together Q&A for these employees—who from HR should take the first cut?
- Whoever from the city should coordinate with the county—they are also drafting similar guidance. We are directing employees to go to KCPH site as much and EAP and their supervisors. Often people take comfort in talking—need to be ready to handle questions.
- Adriene people going out to independent living seniors
- **Fire PIO can help with the messaging.**

- PD N95 masks—mask pricing is skyrocketing, carefully consider how services are delivered—just putting a mask on employees might not be an option.

Possible next steps:

1. Bobby (and Ernie) should connect with Brenda Bauer (KC) to align FAQ and employee messaging with King County. They may already have stuff we can build upon
2. Messaging to:
    a. Citywide message to employees
    b. Directors should ensure personnel in the field receive communications.
    c. Need first responder FAQ. (police & fire)
    d. A modified first responder FAQ for other field crews.
    e. FAQ's for front line employees (counter personnel).
3. Q&A should include something about cleaning. FAQ should think how employee can clean (***FAS needs to think about how to stage kind and type of supplies for employee use).***
4. Heads up to labor unions
5. **Fire has a PIO to assist.**

WORKPLACE SANITATION

- Cleaning: 26 fewer cleaning staff than 2008. Today we do not have a regular consistent cleaning regime. Have asked about regular weekly cleaning, daily surface cleaning, strike team if there is a place that is exposed
- Equipment: 30 hand sanitation, backpack sanitizing spray, working with warehouse managers across the cities to itemize what the individual departments have—need depts to step up and provide a point.
- Remote operations: 14 day operation plan for how we would provide services if had to move those operations.

PROTOCOL FOR IF EMPLOYEE COMES BACK POSITIVE

Do we have protocol/procedures in place for how we would respond to confirmed diagnosis in – working with very hysterical people, some folks wont come in—FAS can speak to cleaning protocol, but citywide response has to have additional inputs—social distancing, vacating that floor, etc. **Laurel and Bobby leads for protocol on what our procedure will be if we get a diagnosis on employee.**

Possible protocol components:

1. Cleaning task force (FAS) .. securing areas to be cleaned.
2. PH guides advice for employees who came into contact with person. (PH)
3. Relocation of work activities (Dept COOPS should address)
4. What information is shared with employees who came into question. (SDHR)

HOMELESSNESS PLANNING

- **JASON Action Item: Will be ready on Monday with a more detailed plan and doesn't require other dept. assistance at this time**
- Jason: a lot of communication with public health yesterday and today—nav team director, comms with all contract providers—aging and disability service providers. Ask to each of these teams is doubling down on. Have been doing pandemic planning for homeless population. How do we engage with them? They live primarily in congregate settings. Tyring to be as aligned as possible with public health. Guidance revolves around hygiene and isolation—both of which are extremely difficult with this population. Had planned on meeting with providers in person next week—**will move that up to Monday.**
- ADS director is providing normal protocols will want to align that with what public health is asking for. Homebound seniors and people with disabilities
- Kasey: does that planning include shelter operations in city hall—protocol or understanding in place for confirmed case of someone who has been sheltered at city hall. This is the main reason that we want to engage with the provider community.
- We are leaning on existing plans: sheltering plan may be needed to help distribute people
- DOH is leading statewide homeless planning—OEM will provide Contact info for TAG
- Need to provide Jason an EMD contact for Jason regarding homelessness.

From:	Hayes, Patty
To:	Burkland, Anne; Levy, Susan (Susie)
Subject:	Re: BoH Update on coronavirus (COVID-19)
Date:	Saturday, February 29, 2020 5:57:24 PM
Attachments:	image001.png image002.png image003.png image004.png

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Get Outlook for Android

From: Levy, Susan (Susie) <slevy@kingcounty.gov>
Sent: Saturday, February 29, 2020 4:54:21 PM
To: Burkland, Anne <Anne.Burkland@kingcounty.gov>; Hayes, Patty <Patty.Hayes@kingcounty.gov>
Subject: Fwd: BoH Update on coronavirus (COVID-19)

FYI.

Get Outlook for iOS

From: McDermott, Joe <Joe.McDermott@kingcounty.gov>
Sent: Saturday, February 29, 2020 2:51 PM
To: Kohl-Welles, Jeanne; Lambert, Kathy; Dembowski, Rod; lorena.gonzalez@seattle.gov; Tammy Morales (Tammy.Morales@seattle.gov); Bill Daniell; Butch de Castro (butchdec@uw.edu); Teresa.Mosqueda@seattle.gov; Andrew.Lewis@seattle.gov; susan.honda@cityoffederalway.com; krystalm@burienwa.gov; chris.delecki@seattlechildrens.org; jzahn@bellevuewa.gov; dbaker@kenmorewa.gov
Cc: Levy, Susan (Susie); Nguyen, Lan
Subject: BoH Update on coronavirus (COVID-19)

Board of Health Colleagues,

As the number of presumptive positive cases of novel coronavirus in King County increase and we have had the first death of someone presumptive positive for the virus, I wanted to share with you the information I have received today.

Attached and below are media advisories and talking points with current information – which is evolving rapidly. I will work to keep us all informed on the most current information ongoing.

Not included in the attached/below is advice for someone who believes they may have symptoms of the virus. While this is also evolving, current action would be that people should first call their primary doctor/clinic. If the doctor feels they have reason to be concerned, the doctor will contact Public Health. PH then works with DOH to get the test done.

As you can imagine, Public Health Seattle King County is stretched in their immediate response. I would ask that you direct questions and inquiries through me and I will coordinate a response and getting the information out to the entire Board of Health.

Thank you for your commitment to public health. My cell is 206 755 8893.

-Joe

Joe McDermott
King County Councilmember, District 8

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Public Health Seattle & King County

Washington State Department of Health

February 29, 2020

Contacts: Public Health – Seattle & King County Media Line: 206-477-9000
Email: PHPIO@kingcounty.gov
Washington State Department of Health: 253-512-7100
Email: doh-pio@doh.wa.gov
Contact: James Apa, 206-263-8698

First death due to novel coronavirus (COVID-19) in a resident of King County
There are also confirmed cases of COVID-19 from a long-term care facility in King County

Summary

Public Health – Seattle & King County and the Washington State Department of Health are announcing new cases of COVID-19, including one death. The individual who died was a man in his 50s with underlying health conditions who had no history of travel or contact with a known COVID-19 case. Public Health is also reporting two cases of COVID-19 virus connected to a long-term care facility in King County.

Story

Public Health – Seattle & King County, Washington State Department of Health and the Centers for Disease Control and Prevention (CDC) are reporting today four presumptive positive cases of novel coronavirus (COVID-19), including one person who died.

- Two of the confirmed cases are associated with LifeCare nursing facility in Kirkland, King County, Washington:

- One is a health care worker from LifeCare. She is a woman in her 40s, is currently in satisfactory condition at Overlake Hospital, and she has no known travel outside the United States.
- The second case, a woman in her 70's, is a resident at LifeCare and is in serious condition at EvergreenHealth Hospital.

- In addition, over 50 individuals associated with LifeCare are reportedly ill with respiratory symptoms or hospitalized with pneumonia or other respiratory conditions of unknown cause and are being tested for COVID-19. Additional positive cases are expected.
- The death occurred in a patient at EvergreenHealth Hospital but was not a resident of the long-term care facility.

Public Health – Seattle & King County is current working with LifeCare to provide care for ill patients while protecting uninfected patients. The CDC is sending a team of epidemiologists to King County to support our efforts to identify, isolate and test all of those who may be at risk because of these new cases.

Public Health is at the very beginning stages of this investigation and new details and information will emerge over the next days and weeks.

"This is a tragic loss of life and we share our heartfelt condolences with the family," said Dr. Jeff Duchin, Health Officer for Public Health – Seattle & King County. "While the vast majority of cases of COVID-19 are believed to be mild, the virus can be a very serious infection that can lead to death. Protecting the health of our community and supporting the care of health care workers is our top priority."

"I know this news is alarming, but we are doing everything possible to make sure the public is safe. Earlier today I declared an emergency proclamation directing state agencies to use all resources necessary to prepare for and respond to the outbreak. The best thing people can do to help is remain informed and take routine health precautions," Gov. Jay Inslee said. "Our public health officials at the state, local and national levels are working diligently on this, coordinating efforts and keeping the public safe and informed."

"We are fortunate to have one of the best public health agencies in the nation, and we are pulling all available resources into the fight against COVID-19. King County is reviewing all government operations, and we are standing up an Emergency Operations Center to respond appropriately across all agencies and public services. I urge businesses and families to plan and take precautions, referring to Public Health for best practices." King County Executive Dow Constantine

For more information about COVID-19 in King County visit: www.kingcounty.gov/coronavirus

Providing effective and innovative health and disease prevention services for more than two million residents and visitors of King County, Public Health — Seattle & King County works for safer and healthier communities for everyone, every day. More at www.kingcounty.gov/health

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From: Gill, Karan <Karan.Gill@kingcounty.gov>
Sent: Saturday, February 29, 2020 11:16 AM
To: Dembowski, Rod <Rod.Dembowski@kingcounty.gov>; Upthegrove, Dave <Dave.Upthegrove@kingcounty.gov>; Dunn, Reagan <Reagan.Dunn@kingcounty.gov>; Lambert, Kathy <Kathy.Lambert@kingcounty.gov>; von Reichbauer, Pete <Pete.vonReichbauer@kingcounty.gov>; Balducci, Claudia <Claudia.Balducci@kingcounty.gov>; McDermott, Joe <Joe.McDermott@kingcounty.gov>; Zahilay, Girmay <Girmay.Zahilay@kingcounty.gov>; Kohl-Welles, Jeanne <Jeanne.Kohl-Welles@kingcounty.gov>
Cc: Camenzind, Krista <Krista.Camenzind@kingcounty.gov>; Logsdon, Kristina <Kristina.Logsdon@kingcounty.gov>; Phibbs, Diana <Diana.Phibbs@kingcounty.gov>; Nguyen, Lan <Lan.Nguyen@kingcounty.gov>; Lewis, Rhonda <Rhonda.Lewis@kingcounty.gov>; Pichette, Tyler <Tyler.Pichette@kingcounty.gov>; Cooper, Adam <Adam.Cooper@kingcounty.gov>; Eccles, Cody <Cody.Eccles@kingcounty.gov>; Brown, Dylan <Dylan.Brown@kingcounty.gov>; Muhm, Jeff <Jeff.Muhm@kingcounty.gov>; Busch, Carolyn <Carolyn.Busch@kingcounty.gov>
Subject: Fwd: Media Advisory: Update on coronavirus new cases including one death

Hello Councilmembers --

I am forwarding the latest release from Public Health regarding an update on the coronavirus. Also, attaching talking points. There will be a Public Health press conference at 1pm.

This is a rapidly evolving situation - Shannon and I will continue to keep you updated as we are able. We are also doing outreach with cities.

Since Public Health is completley inundated right now, it would be incredibly helpful to please send any questions you have to Shannon and I so we can get answers back to you as soon as possible.

Thanks,

Karan

Subject: Media Advisory: Update on coronavirus new cases including one death

February 29, 2020

Contacts:

Public Health – Seattle & King County Media Line: 206-477-9000

Email: PHPIO@kingcounty.gov

Washington State Department of Health: 253-512-7100

Email: doh-pio@doh.wa.gov

MEDIA ADVISORY

Health officials update on novel coronavirus (COVID-19)in King County, including new cases and one death

Health officials will be providing the latest updates regarding novel coronavirus cases in King County, including new people identified with the infection, one of whom died.

- Dr. Jeff Duchin, Health Officer, Public Health – Seattle & King County
- Dr. Frank Riedo, Medical Director of Infection Control, EvergreenHealth Hospital
- Dr. Kathy Lofy, State Health Officer, Washington State Department of Health
- Patty Hayes, Director, Public Health- Seattle & King County

Time: 1:00 pm PST, Saturday, February 29, 2020

Location: Public Health – Seattle & King County

401 5th Ave, Seattle WA 98104

You can dial in using your phone

206 263-8114 Conference ID 3426240

Press briefing will also be live on Public Health- Seattle & King County's Facebook page @KCPubHealth

Providing effective and innovative health and disease prevention services for more than two million residents and visitors of King County, Public Health – Seattle & King County works for safer and healthier communities for everyone, every day. More at www.kingcounty.gov/health

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Washington State Department of

Health

Public Health

Seattle & King County

Public Health

Seattle & King County

Washington State Department of
Health

From:	Thomas D. Rea
To:	Plorde, Michele; Jacinto, Tracie; Jim Whitney; Adrian Whorton; brant.butte@amr.net; Joel Bodenman; kdunn@redmond.gov; Tim Day; Dave Van Valkenburg; "Smith, T (EMSAC member""
Cc:	Kawakami, Vance; Kay, Meagan; Duchin, Jeff
Subject:	Re: Important updates
Date:	Saturday, February 29, 2020 12:20:12 AM

One last item not in the prior communication is the goal to have patients from the Kirkland facility continue to the extent possible go to Evergreen Hospital in order to confine the hospital location fat least for now. If PH has other considerations about hospital destination for patients that need to be transported, I defer to their wisdom.

Thanks
Tom

++
Tom Rea MD MPH
Professor of Medicine — Medical Program Director
Harborview Medical Center — EMS Division
University of Washington — Public Health - King County
cell 206-255-5513
++

From: Thomas D. Rea
Sent: Saturday, February 29, 2020 12:02 AM
To: Plorde, Michele <Michele.Plorde@kingcounty.gov>; Jacinto, Tracie <Tracie.Jacinto@kingcounty.gov>; Jim Whitney <jwhitney@redmond.gov>; Adrian Whorton <awhorton2@comcast.net>; brant.butte@amr.net <brant.butte@amr.net>; Joel Bodenman <JBodenman@kirklandwa.gov>; kdunn@redmond.gov <kdunn@redmond.gov>; Tim Day <TDay@kirklandwa.gov>; Dave Van Valkenburg <DVanValkenburg@kirklandwa.gov>; 'Smith, T (EMSAC member'' <tfsmith@redmond.gov>
Cc: Kawakami, Vance <Vance.Kawakami@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Subject: Important updates

All

This is a dynamic situation - I believe I have contacted persons on duty for your agencies. Persons I have talked to this evening have been exceptional in their response and helping to get the situation organized - thank you.

I have learned that the location - Life Center of Kirkland - now has 2 confirmed COVID-19

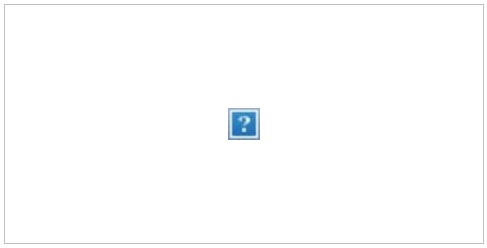
patients that involved Redmond Paramedics, Kirkland Fire Department, and AMR. Reportedly there have been upwards of a dozen EMS responses just in the past week or so - many of these patients are now being or will be tested shortly for COVID-19 given the positive diagnoses.

To my knowledge, the crews were not using full COVID-19 precautions - hence they were not protected at the level recommended by the CDC - very unepected presentation in a SNF - and no way for the crews to expect such a circumstance. I talked with Dr. Duchin about this circumstance. We would recommend that the involved crews step out of "professional circulation" and stay at home in functional quarantine until PH has a better fix on disease burden and the nature of patient-specific exposure. The quarantine may be up to 14 days from the last time they had a potential exposure at the facility. I discussed this plan with their ALS Medical Director - Adrian Whorton, the on-duty Redmond MSO Kelly Dunn, Director Brant Butte of AMR, Chief Smith, and Captain Joel Bodenman of Kirkland Fire about this circumstance this evening.

The guidance for quarantine from CDC is found at this link below. In general, the employees should avoid public and stay at home. They should avoid close contact with family but do not need to isolate so long as they remain asymptomatic. Public Health will provide additional guidance during the follow-up period. Your employees should understand this is done with an abundance of precaution for their safety, the safety of their colleagues, and the safety of the public.

I have asked each agency to generate a list of their employees who have been to the facility in the past 2 weeks and which patients they contacted. This list will need to be communicated to Public Health. I have cc'd Meagan Kay and Vance Kawakami of Public Health.

https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html



Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with 2019 Novel Coronavirus (2019-nCoV) - cdc.gov

Interim U.S. Guidance for Risk Assessment and

Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with 2019 Novel Coronavirus (2019-nCoV)

www.cdc.gov

I am on my cell and happy to discuss your concerns. I appreciate information is developing quickly. Really appreciate the efforts by all.

Tom Rea

++
Tom Rea MD MPH

Professor of Medicine	Medical Program Director
Harborview Medical Center	EMS Division
University of Washington	Public Health - King County

cell 206-255-5513
++

From: Patanjal Vyas
To: Duchin, Jeff
Subject: Re: Keeping cloves (Syzygium aromaticum) in mouth could solve COVID-19?
Date: Saturday, February 29, 2020 5:01:35 PM

I would request you to consider sharing my story with Life Care Center patients. They can choose to experiment with this method of keeping an antiviral like a clove in mouth all the time even during sleep, for 2-3 days and see if symptoms improve. I know this method has not been widely researched but it has been working well to me for 3 years for many infections and I am just trying to share my personal experience with patients. I get my cloves from nearby Herbal Wellness in Kirkland which are certified organically grown but any good quality ones should work.

Thanks
Pat

On Sat, Feb 29, 2020, 3:32 PM Patanjal Vyas <patanjal.vyas@gmail.com> wrote:

> Hi Jeff,
>
> I am Pat. I am a software engineer living in Seattle. I wanted to share one of my habits that I have found useful in fighting viral infections that I think could also help coronavirus situation.
>
> I stopped taking flu shot since 3 years in favor of trying natural foods as medicine. I experimented with many organic foods with antiviral properties, I found that nothing was more reliable and simple in killing infections early than just keeping cloves in mouth as long as I can. I don't think it was because cloves were better antivirals. I think it may have been because cloves can be kept in mouth for a long time, just like a chewing gum, pressing and sucking on them may be providing steady support to immune system to prevent or kill early stage infections. It became habit just like washing hands.
>
> I noticed when I would start using cloves as soon as I felt little unwell, such as having scratchy or sore throat, it never escalated to a flu or cold, and I was generally better by the next day. Sometimes I started using cloves late in infection stage and I even would sleep with cloves in my mouth, it seemed to help me feel better and recover faster. I have successfully used cloves to even treat food poisoning and skin tags by applying it tropically.
>
> I believe there's a chance that telling people to use cloves like a chewing gum can be a simple and effective way to prevent general viral infections such as cold and flu, and may be even coronavirus.
>
> May be there can be more research and RCTs which evaluates

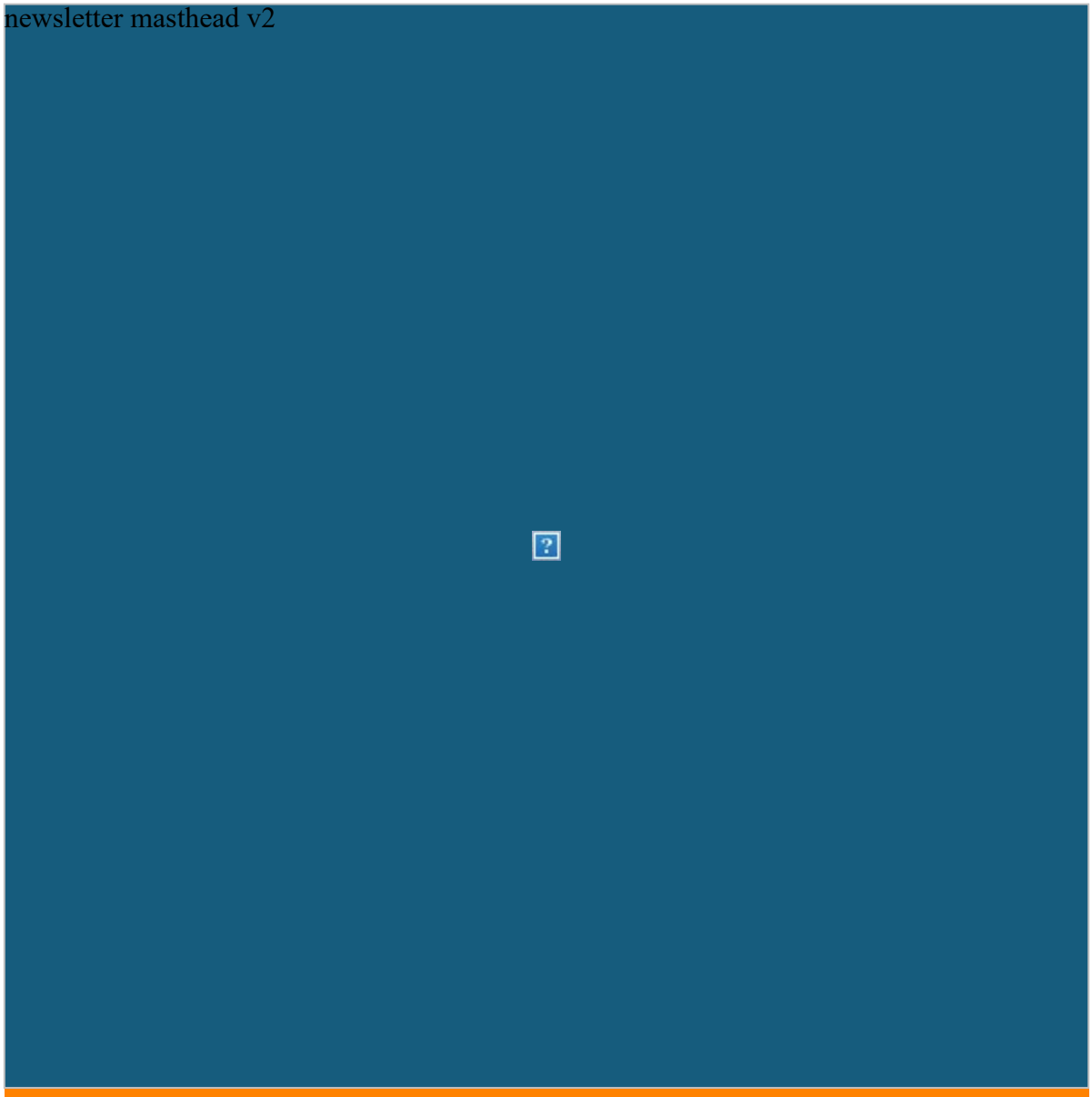
effectiveness of this method of keeping cloves in mouth in preventing & fighting different viral infections.

I would be glad to share more details from my experiences if this interests you.

Pat

From: King County, WA
To: Hayes, Patty
Subject: This Month in Public Health - February Edition
Date: Thursday, February 27, 2020 4:03:01 PM

View this in your browser.



Highlights from Public Health Insider and this month's headlines
February 2020

Pandemic steps

WHAT HAPPENS IF THE NOVEL CORONAVIRUS SPREADS HERE?

A CONVERSATION WITH OUR HEALTH OFFICER.

With continuing spread of the novel coronavirus (COVID-19) outbreak to more countries, it is increasingly likely that we will see a worldwide spread (or pandemic) that will reach the US at some point. How would a coronavirus pandemic potentially play out and what can we do to protect ourselves and get through it? We asked Dr. Jeff Duchin, Health Officer for Public Health – Seattle & King County.

If we still have a relatively small number of cases of COVID-19 in the US right now, why are health officials talking about planning for possible pandemic?

With the growing spread in other countries, we can anticipate that eventually there will be more cases in the United States. Remember that the term pandemic tells us about the extent of an outbreak – a new virus that spreads readily to many countries around the world – but it doesn't tell us about the severity of the outbreak. We still can't predict

exactly when a pandemic outbreak might reach us nor how severe a COVID-19 pandemic might be locally. But if it happens, and that seems likely, it could cause many people to become ill in a short time. This will stress our healthcare system and disrupt many of our regular activities, including school, work, and social events.

Although it's possible that a severe outbreak will not happen here, it's better to be prepared for a serious pandemic and not have one than not be ready if it does happen. Containment efforts have bought us valuable time to plan. **It's important we prepare now in order to reduce the number of illnesses and negative effects that could occur in our community.**

READ MORE>>>

ADDRESSING STIGMA: UNITED RESPONSE TO CORONAVIRUS

Public health professionals and community leaders joined together earlier this month in a strong stance against stigma and discrimination that can be exacerbated during global outbreaks.

We know that protecting health and safety is not only about safety from a virus, it is also about creating communities where people support each other and we all have our basic needs met.

Public Health – Seattle & King County has launched new resources for our collective community to help address stigma.

We acknowledge that people's past history and trauma can get exacerbated during these times of stress. Instead of acting from places of fear or stigma, by having the correct information we can understand the low level of risk from the current coronavirus.

READ MORE>>>

Stigma press conf

THREE FENTANYL OVERDOSES DEATHS IN ONE DAY

Public Health Alert

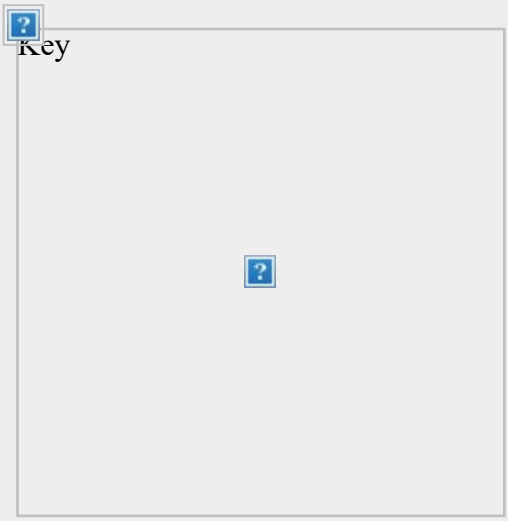
Public Health – Seattle & King County is alerting people to avoid pills from the street or online. The warning comes after three fatal overdoses were reported near the border of Kent and Renton on the morning of February 6, 2020. These three deaths were close together geographically and within a short time period, causing particular concern.

The King County Medical Examiner's Office identified that these three drug overdose deaths involved fentanyl.

This continues an alarming trend across the county of increases in fentanyl-involved overdose deaths from counterfit pills. Locally, illicit fentanyl has most commonly been found in counterfeit percocet and oxydocone pills. Fentanyl could potentially be present in any illicit drug, in any form.

You can't see, smell, or taste fentanyl. The amount of fentanyl in street drugs can vary, even within the same batch.

READ MORE>>>



MEDICAL EXAMINER'S OFFICE IDENTIFIES A MAN 35 YEARS AFTER HIS DEATH IN A SEATTLE PARK

After 35 years of wondering, a family finally has answers to what happened to their loved one who had been missing for more than three decades. And the King County Medical Examiner's Office is finally able to officially identify an unidentified person who died in a Seattle park in 1985. The King County Medical Examiner's Office Dr. Kathy Taylor told the Public Health Insider how all the pieces came together:

In October 1984 the King County Medical Examiner's Office (KCMEO) investigated the death of a young adult male who was found in a local park. The man had no identification. The KCMEO used all methods available at the time in an attempt to identify the man, including obtaining a full set of fingerprints.

The fingerprints were regularly run through the Automated Fingerprint Identification System (AFIS) in the years following his death. His profile and a sketch were posted on publicly accessible websites including the National Missing and Unidentified Persons System (NamUs) and the Doe Network. Unfortunately, despite ongoing attempts, no positive leads were made to link the dead man to any missing person.

Meanwhile, a woman living out of state began to investigate what happened to her uncle, who had been missing since the early 1980s. As part of her search, she read a decedent's profile on NamUs and the Doe Network and noted strong similarities to what she knew of her missing uncle. In the fall of 2019 she contacted Dr. Kathy Taylor at the KCMEO to see if Dr. Taylor could help.

READ MORE>>>

WORKING AT THE INTERSECTION OF HUNGER AND HEALTH

Typically, when a patient with diabetes or high blood pressure visits their doctor, you may expect they receive counseling on what types of foods they should be eating. Although important, this practice oftentimes doesn't consider if the patient has the means to eat healthy food. Now let's take a moment to imagine a healthcare system that not only focuses on what the individual *should*

Hunger and Health

eat but also strives to ensure that those patients struggling financially are connected to resources that will help them get healthy foods. That is the vision of the Food Insecurity Screening Community of Practice, a group of ten healthcare systems and six patient advisors working to streamline healthcare screening and referral processes for patients experiencing food insecurity.

What is food insecurity?

Food insecurity is defined by the United States Department of Agriculture as the "lack of consistent access to enough food for an active, healthy life" and typically involves a lack of available financial resources for food. In 2017, 11.5% of people living in King County experienced food insecurity, amounting to 244,170 individuals. People experiencing food insecurity report that they often run out of food and don't have money to buy more.

When people can't afford healthy, nutritious foods, they tend to have difficulty managing chronic diseases like diabetes and heart disease. A poor diet worsens poor health conditions, resulting in more visits to the doctor and greater financial burden. Consequently, individuals experiencing food insecurity are often trapped in a cycle of worsening health. Healthcare systems are incorporating innovative strategies that strive to improve the health of their patients by addressing social needs, such as food insecurity, and to reduce the burden of disease, health disparities, and the cost of healthcare.

READ MORE>>>

Condom

6 THINGS YOU DON'T KNOW (BUT SHOULD) ABOUT STIS

Sex positivity is in, sex shaming is out. More people are comfortable talking about what it means to have a healthy sexual relationship, and that's a good thing. But there's one thing that many of us still feel awkward or downright avoid talking about: sexually transmitted infections (STIs).

You may know them as sexually transmitted diseases, or STDs, which is the term doctors use

when an STI has symptoms. (We'll be using the term STI throughout this article because it's broader.) This omission can lead some people to assume there's no real risk, says Dr. Lindley Barbee, an infectious disease specialist and medical director for the Public Health Seattle & King County Sexual Health Clinic at Harborview Medical Center. Unfortunately, the risk is very real. Consider this the STI 101 class you probably never got in high school.

STI rates are going way up

The two most common STIs in the country, chlamydia and gonorrhea, are getting more common. From 2014 to 2018, rates of chlamydia rose by 19% while rates of gonorrhea rose by a whopping 63%, according to a national report from the Centers for Disease Control and Prevention (CDC).

In Washington state, there were 465 cases of chlamydia per 100,000 people and 151 cases of gonorrhea per 100,000 people in 2018. These rates are midrange, neither the highest nor the lowest in the country. And so much for that idea that millennials aren't having sex: STI rates are increasing the most among teen and millennial women. Doctors don't know why STI rates are so high, but it's likely due to several factors, Barbee says, not all of which are bad.

READ MORE>>>

PUBLIC HEALTH VALENTINES

Sugar valentine

These love letters go out to ALL our public health staff, partners and colleagues in the field. Share them with the ones you love.

SEE MORE>>>

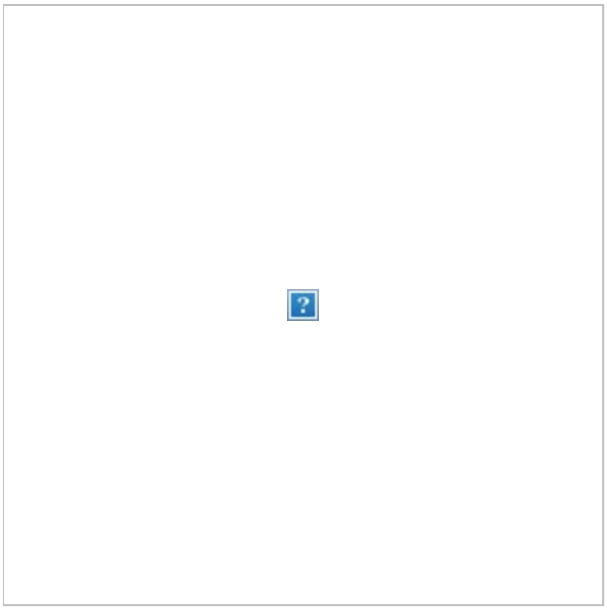
Additional Headlines

- King County opens doors to controversial new youth detention center (KUOW)
- New ‘Public Charge’ rule threatens community health (Courier-Herald)
- If Doctors Prescribe a High Dose of Opioids, They Should Also Prescribe the Overdose Antidote (SLOG)
- Half of the patients at this free, pop-up health clinic already have insurance (KUOW)
- Come together to support youth in King County [OPINION] (Seattle Times)

- Levy funds to help expand mental health services (Reporter)
- King County sober van effort slowed by shelter closure (KOMO)
- Health officer demands Seattle Children's release mold-related documents (KING 5)
- A police officer's lie, a Seattle man's suicide: Family and friends learn what really happened (Seattle Times)

Trending: Coronavirus

- Snohomish County man with novel coronavirus discharged from hospital (Seattle Times)
- It takes all of us to reduce stigma during disease outbreaks (Medium)
- How coronavirus has tested Seattle's infectious disease response (Crosscut)
- Coronavirus taking toll on King County public health staff (KIRO 7)
- Containing the Coronavirus (Route Fifty)
- Health officials say King County remains safe from coronavirus — for now (Crosscut)
- Home quarantine for travelers buys time as new virus spreads (AP)
- COVID-19: How One U.S. City Is Handling Home Quarantines (WBUR)



Questions?
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STAY CONNECTED:

From: ANA SmartBrief
To: Hayes, Patty
Subject: USPSTF: Cognitive screening for older adults lacks evidence
Date: Friday, February 28, 2020 11:09:19 AM

February 28, 2020 **CONNECT WITH ANA**

ANA SmartBrief

News for the nursing profession **SIGN UP · SHARE**

TOP STORY

Over 8,400 monitored for possible coronavirus in Calif.

(Mario Tama/Getty Images)

California Gov. Gavin Newsom said at least 8,400 people are being monitored after the CDC confirmed the first possible domestic community spread of the emerging coronavirus in a Solano County, Calif., resident. Newsom said the state only has 200 testing kits available, but he said the CDC plans to significantly improve the state's testing capacity in the coming days.**Full Story:** CNBC (2/27), Reuters (2/27)

- **Read the joint AHA/ANA letter to Capitol Hill regarding COVID-19**
- **See ANA's coronavirus resources**

NURSING, HEALTH & MEDICAL SCIENCE

USPSTF: Cognitive screening for older adults lacks evidence

The US Preventive Services Task Force this week released a final recommendation statement that says there is insufficient evidence to assess the harms and benefits of

screening older adults for cognitive impairment. Even after reviewing updated evidence, the statement is virtually the same as the USPSTF's 2014 recommendation, which the AAFP supported.**Full Story:** AAFP News (2/26)

Cost of care may factor into decrease in primary care visits

A study in the Annals of Family Medicine found a 24.2% decrease in primary care visits by insured adults over nine years, and researchers said possible reasons include financial barriers, a lower real or perceived need, and alternative sources of care. "We continue to see the devastating effects of delaying or declining prescribed medications and needed treatments because patients can't afford them," said AAFP President Gary LeRoy, M.D., citing the report in a letter responding to President Donald Trump's State of the Union address.**Full Story:** AAFP News (2/26)

Study: Sugar-sweetened drinks affect cholesterol, triglycerides

Consuming more than 12 ounces of sugar-sweetened soda or fruit juice daily was associated with a 53% higher risk of having high triglyceride levels and a 98% higher likelihood of having low high-density lipoprotein cholesterol, compared with drinking lesser amounts, according to a study in the Journal of the American Heart Association. Registered dietitian Samantha Heller says young children should not get sugar-sweetened drinks and older children and adults can get the bubbly effect of soda by choosing flavored seltzers or adding a little juice to tea or plain seltzer.**Full Story:** HealthDay News (2/26)

Study looks at insulin requirements post-surgery

More insulin may be required for patients with type 2 diabetes who just had a surgery procedure, especially if they experience elevations in C-reactive protein or A1C level, suggests a study in the Journal of Diabetes Investigation. The findings, based on data from 49 adults with type 2 diabetes, showed that insulin requirements rose by a mean of 3.11 U per day after surgery.**Full Story:** Healio (free registration)/Endocrine Today (2/26)

TRENDS & TECHNOLOGIES

CDC: Over 4 in 10 American adults have obesity

More than four in 10 American adults, or 42.4%, had obesity and over 9% had severe obesity in 2017 and 2018, according to a report from the CDC's National Center for Health Statistics. The prevalence of obesity among American adults has risen steadily since 2011, and it is highest among adults ages 40 to 59 at 44.8% and non-Hispanic black adults at 49.6%.**Full Story:** United Press International (2/27), HealthDay News (2/27)

Study examines parental influence on childhood eating habits

A survey of 100 parents found children ages 3 to 5 followed their mother's example for eating raw and cooked vegetables, fruit and berries, but their father's influence was greatest on children eating cooked vegetables, researchers reported in the journal Food Quality and Preference. The study found dinner was the best meal for teaching children to eat vegetables while a night-time snack was important for getting them to eat fruit.**Full Story:** HealthDay News (2/26)

BATM creates novel coronavirus diagnostic kit

Israel-based BATM reports that it has developed a rapid diagnostic kit for the novel coronavirus that can detect the virus within 25 minutes.**Full Story:** The Jewish Press (2/27)

LEGISLATIVE POLICY & REGULATORY NEWS

Lawmakers eye up to $8B in funding to fight coronavirus

Congress is considering a spending package that would provide the government between $6 billion and $8 billion to combat the novel coronavirus in the US, and lawmakers hope to finalize the deal and get it passed by both chambers before an upcoming recess, sources say. Meanwhile, administration officials said President Donald Trump is thinking of invoking special powers through the Defense Production Act to expand domestic production of protective masks and clothing after HHS Secretary Alex Azar said in a hearing the US doesn't have enough N95 masks on hand for medical workers.**Full Story:** The Hill (2/27), Reuters (2/27)

ANA NEWS

NCPD Summit

The NCPD Summit will take place on Wednesday, March 18, from 8:00 a.m. to 4:00 p.m. at the Omni Nashville Hotel. It's a full-day preconference event focusing on nursing professional development, and it's the perfect way to kick off your entire AONL 2020 experience. You'll see an inspiring interview, hear from three special guest speakers, and learn from two different panel presentations that will leave you feeling empowered, engaged, and energized. Learn more and register now.

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EDITOR'S NOTE

SmartBrief Reader Survey

You might have noticed we have updated our newsletter template. Please let us know what you think by taking this two-minute survey.

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- **Full-Time Faculty Nursing**
  READING AREA COMMUNITY COLLEGE - *Reading, Pennsylvania, United States*
- **FT Faculty Nursing (Medical-Surgical - Mental Health Specialty)**
  READING AREA COMMUNITY COLLEGE - *Reading, Pennsylvania, United States*
- **Registered Nurse II - Main OR**
  MUSC HEALTH - *Charleston, South Carolina, United States*
- **Registered Nurse II - Neonatal Nurseries**

MUSC HEALTH - *Charleston, South Carolina, United States*

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Life is very short. What we have to do must be done in the now.

Audre Lorde,
writer, civil rights activist
February is Black History Month

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From: Center for Vaccine Ethics and Policy :: GE2P2 Global Foundation
To: Duchin, Jeff
Subject: Vaccines and Global Health: The Week in Review 29 February 2020 :: Number 543
Date: Saturday, February 29, 2020 8:55:45 PM

Vaccines and Global Health: The Week in Review
29 February 2020 :: Number 543
Center for Vaccine Ethics & Policy (CVEP)

This weekly digest targets news, events, announcements, articles and research in the vaccine and global health ethics and policy space and is aggregated from key governmental, NGO, international organization and industry sources, key peer-reviewed journals, and other media channels. This summary proceeds from the broad base of themes and issues monitored by the Center for Vaccine Ethics & Policy in its work: it is not intended to be exhaustive in its coverage.

Vaccines and Global Health: The Week in Review is also posted in pdf form and as a set of blog posts at https://centerforvaccineethicsandpolicy.net. This blog allows full-text searching of over 8,000 entries.
Comments and suggestions should be directed to
David R. Curry, MS
Editor and Executive Director
Center for Vaccine Ethics & Policy
david.r.curry@centerforvaccineethicsandpolicy.org

Request an email version: Vaccines and Global Health: The Week in Review is published as a single email summary, scheduled for release each Saturday evening at midnight (EST/U.S.). If you would like to receive the email version, please send your request to david.r.curry@centerforvaccineethicsandpolicy.org.

Support this knowledge-sharing service: Your financial support helps us cover our costs and to address a current shortfall in our annual operating budget. Click here to donate and thank you in advance for your contribution.

Contents *[click on link below to move to associated content]*

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Milestones :: Perspectives :: Research

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Global institutions must act urgently and decisively to tackle COVID-19
Opinion | 27 February 2020
Jeremy Farrar, Director, Wellcome Trust
The COVID-19 outbreak is not just a public health crisis, it's rapidly becoming a global crisis – of health, economics and politics.

A queue of Italian shoppers outside a supermarket with empty trolleys. It's not an image we automatically associate with a global public health crisis. But when this picture, from the quarantined Lombardy town of

Casalpusterlengo, led news reports earlier this week, it captured something infectious disease researchers, like me, have been struggling to express clearly. It is that epidemics like COVID-19 are so much more than just a public health crisis. Like the worst financial crashes, they are global events, which can impact every sector of society all at once.

For the people of Lombardy and Veneto – and those of Daegu in South Korea, and Wuhan and many more towns and cities in China – fear of falling ill is just the start. With quarantine, or even containment tactics that do much less to infringe civil liberties, the social disruption is everywhere. The supermarket with empty shelves. The trains that don't run. The shuttered workplace. The children sent home from school. The features of normal life we take for granted turned upside down.

These social impacts feed economic ones and have sent most of the world's major stock exchanges sharply downwards in the past few days. Cruise ships, prisons, hotels and villages in one part of the world could just as easily be care homes, schools, work places or refugee camps in another. Even with scientists' best estimates, it is near-impossible to predict whether this virus will stay with us long-term, or, like the SARS outbreak in 2003, will burn out.

But what can we do to curb this wider societal contagion?

In the past month, governments around the world have stepped up public health responses, from airport screenings and quarantining potential cases on the return from affected areas, to finding extra capacity for national health services. These actions have been crucial to reducing and delaying the spread of this virus – because, as yet, we have no vaccine or proven treatment. Communities, particularly in China, have paid a heavy price, but have bought the rest of the world critical time.

What more, then? I believe our greatest weapon against uncertainty and panic is trust, which in much of the world is at a historic low. To regain it, our global powers, including the World Bank, International Monetary Fund (IMF), and leaders of the G7 and G20, must make decisions that demonstrate they see this as a global crisis, and continue the current containment approach while also preparing for the worst. Three key pieces of insight should help kickstart action.

First, agreement that the chances of this becoming something that we can't contain are uncomfortably high and acting as if this is a certainty is now our best bet. Second, decisions must keep pace with this epidemic, which means coordinated action should be adapted as needed on an almost daily basis. Third, and as the residents of northern Italy and South Korea already know, recognising that the possible impact of coronavirus is far beyond a health emergency – it's a global crisis with the potential to reach the scale of the global financial crisis of 2008.

Then, global financial institutions such as the IMF and World Bank were admirably swift to act. They did what the world needed – and while negative consequences couldn't be avoided, the immediate impact was to some extent mitigated. These same institutions can no longer stand by in the face of a crisis that is no less threatening. They are designed to be the world's insurance policy and they must release the significant funds they hold without hesitation.

Anything less than an urgent initial commitment of $10 billion from the World Bank leaves us at risk of much greater costs later and long-term catastrophe. The sums are considerable. The decision to release funds should not be taken lightly, but the stakes could not be higher. Economists have previously warned that even a moderately severe pandemic could knock 4-5% off global output.

The investment should be used to bolster the public health response in the most vulnerable countries, coordinated through the World Health Organization, and to develop diagnostics, treatments and vaccines. If COVID-19 burns out, then the hours and money spent on our response will not have been wasted but will represent a crucial investment in global health.

Likewise, the IMF needs to ensure it allocates appropriate capital to support central banks across the world. The economic impact of an epidemic can be devastating, particularly on low- and middle-income countries and small businesses. When SARS spread through Asia in 2003, it cost the world economy $60 billion in less than a year. The Ebola epidemic of 2014-15 more than halved Liberia's GDP growth that year. Maintaining access to credit while we weather the storm is vital.

Those with wealth and power must ensure that no country is left behind, particularly those with vulnerable health care systems and fragile economies. This is not just a public health crisis, it's rapidly becoming a global crisis – of health, economics and politics. The best of the world's multilateral financial and political institutions need to ask themselves what they can do to help avert it, and how they can build trust in themselves in the process. The world needs these institutions to act urgently and decisively.

Related content
Wellcome has launched a COVID-19 funding call to support researchers who want to investigate new approaches for preventing and controlling the epidemic, with a focus on low- and middle-income countries.

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EMERGENCIES

Editor's Note:
While we have concentrated the most current key reports just below, COVID-19 announcements, analysis and commentary will be found throughout this issue, in all sections.
Beyond the considerable continuing coverage in the global general media:
Daily WHO situation reports here: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports
WHO Coronavirus disease (COVID-2019) daily press briefings here: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/media-resources/press-briefings

Coronavirus [COVID-19]
Public Health Emergency of International Concern (PHEIC)

Situation report - 39 [WHO]
Novel Coronavirus (COVID-19)
28 February 2020
[Excerpts]
SITUATION IN NUMBERS
Globally :: 83,652 laboratory-confirmed [1358 new]
[Week ago: 77,794 laboratory-confirmed [599 new]]
China :: 78,961 laboratory-confirmed [331 new]
:: 2,791 deaths [109 new]
Outside of China
:: 4,691 laboratory-confirmed [1027 new]
:: 52 countries *[28 countries last week]*
:: 67 deaths [10 new]

WHO RISK ASSESSMENT
China - Very High
Regional Level – Very High
Global Level – Very High

HIGHLIGHTS
:: Five new Member States (Belarus, Lithuania, Netherlands, New Zealand, and Nigeria) reported cases of COVID-19 in the past 24 hours.
:: WHO has increased the assessment of the risk of spread and risk of impact ofCOVID-19 to very high at the global level. More information can be found here.
:: The WHO-China Joint Mission, which was conducted from 16 through 24February, has published its findings. The full report can be found here.
:: WHO has updated the guidance on Global Surveillance for human infection with coronavirus disease (COVID-19). This document includes revised surveillance case definitions for COVID-19.
:: As of 27 February, there are 36 117 (26 403 in Hubei and 15 826 in Wuhan) cases who have recovered from COVID-19 in China.
:: Under the International Health Regulations (2005), States Parties implementing additional health measures that significantly interfere with international traffics hall notify WHO of the public health rationale of those measures within 48 hours of their implementation. As of 27 February, 41 States Parties are officially reporting additional health measures.

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Here is the report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19), published as received from the mission, unabridged by WHO
16-24 February 2020 :: 40 pages
Excerpt
IV. Major Recommendations
For China
1. Maintain an appropriate level of emergency management protocols, depending on the assessed risk in each area and recognizing the real risk of new cases and clusters of COVID-19 as economic activity resumes, movement restrictions are lifted, and schools reopen;

2. Carefully monitor the phased lifting of the current restrictions on movement and public gatherings, beginning with the return of workers and migrant labor, followed by the eventual reopening of schools and lifting other measures;

3. Further strengthen the readiness of emergency management mechanisms, public

health institutions (e.g. CDCs), medical facilities, and community engagement mechanisms to ensure sustained capacity to immediately launch containment activities in response to any resurgence in cases;

4. Prioritize research that rapidly informs response and risk management decisions, particularly household and health care facility studies, age-stratified seroepidemiologic surveys and rigorous investigation of the animal-human interface;

establish a centralized research program to fast-track the most promising rapid diagnostics and serologic assays, the testing of potential antivirals and vaccine candidates, and Chinese engagement in selected multi-country trials; and

5. As the country with the greatest knowledge on COVID-19, further enhance the systematic and real-time sharing of epidemiologic data, clinical results and experience to inform the global response.

For countries with imported cases and/or outbreaks of COVID-19
1. Immediately activate the highest level of national Response Management protocols to ensure the all-of-government and all-of-society approach needed to contain COVID-19 with non-pharmaceutical public health measures;

2. Prioritize active, exhaustive case finding and immediate testing and isolation, painstaking contact tracing and rigorous quarantine of close contacts;

3. Fully educate the general public on the seriousness of COVID-19 and their role in preventing its spread;

4. Immediately expand surveillance to detect COVID-19 transmission chains, by testing all patients with atypical pneumonias, conducting screening in some patients with upper respiratory illnesses and/or recent COVID-19 exposure, and adding testing for the COVID-19 virus to existing surveillance systems (e.g. systems for influenza-like-illness and SARI); and

5. Conduct multi-sector scenario planning and simulations for the deployment of even more stringent measures to interrupt transmission chains as needed (e.g. the suspension of large-scale gatherings and the closure of schools and workplaces).

For uninfected countries
1. Prepare to immediately activate the highest level of emergency response mechanisms to trigger the all-of-government and all-of society approach that is essential for early containment of a COVID-19 outbreak;

2. Rapidly test national preparedness plans in light of new knowledge on the effectiveness of non-pharmaceutical measures against COVID-19; incorporate rapid detection, largescale case isolation and respiratory support capacities, and rigorous contact tracing and management in national COVID-19 readiness and response plans and capacities;

3. Immediately enhance surveillance for COVID-19 as rapid detection is crucial to containing spread; consider testing all patients with atypical pneumonia for the COVID-19 virus, and adding testing for the virus to existing influenza surveillance systems;

4. Begin now to enforce rigorous application of infection prevention and control measures in all healthcare facilities, especially in emergency departments and outpatient clinics, as this is where COVID-19 will enter the health system; and

5. Rapidly assess the general population's understanding of COVID-19, adjust national health promotion materials and activities accordingly, and engage clinical champions to communicate with the media.

For the public
1. Recognize that COVID-19 is a new and concerning disease, but that outbreaks can managed with the right response and that the vast majority of infected people will recover;

2. Begin now to adopt and rigorously practice the most important preventive measures for COVID-19 by frequent hand washing and always covering your mouth and nose when sneezing or coughing;

3. Continually update yourself on COVID-19 and its signs and symptoms (i.e. fever and dry cough), because the strategies and response activities will constantly improve as new information on this disease is accumulating every day; and

4. Be prepared to actively support a response to COVID-19 in a variety of ways, including the adoption of more stringent 'social distancing' practices and helping the high-risk elderly population.

For the international community
1. Recognize that true solidarity and collaboration is essential between nations to tackle the common threat that COVID-19 represents and operationalize this principle;

2. Rapidly share information as required under the International Health Regulations (IHR) including detailed information about imported cases to facilitate contact tracing and inform containment measures that span countries;

3. Recognize the rapidly changing risk profile of COVID-19 affected countries and continually monitor outbreak trends and control capacities to reassess any 'additional health measures' that significantly interfere with international travel and trade.

WHO Director-General's opening remarks at media briefing on COVID-19 (28 February 2020)

27 February 2020 *Statement*
A Joint Statement on Tourism and COVID-19 - UNWTO and WHO Call for Responsibility and Coordination
As the current outbreak of the Coronavirus Disease (COVID-19) continues to develop, the World Health Organization (WHO) and the World Tourism Organization (UNWTO) are committed to working together in guiding the travel and tourism sectors' response to COVID-19.

On 30 January 2020, the Director-General of the World Health Organization (WHO) declared the outbreak of COVID-19 to be a Public Health Emergency of International Concern and issued a set of Temporary Recommendations. WHO did not recommend any travel or trade restriction based on the current information available. WHO is working closely with global experts, governments and partners to rapidly expand scientific knowledge on this new virus, to track the spread and virulence of the virus, and to provide advice to countries and the global community on measures to protect health and prevent the spread of this outbreak.

Cooperation is key
The tourism sector is fully committed to putting people and their well-being first. International cooperation is vital for ensuring the sector can effectively contribute to the containment of COVID-19. UNWTO and WHO are working in close consultation and with other partners to assist States in ensuring that health measures be implemented in ways that minimize unnecessary interference with international traffic and trade.

Tourism's response needs to be measured and consistent, proportionate to the public health threat and based on local risk assessment, involving every part of the tourism value chain – public bodies, private companies and tourists, in line with WHO's overall guidance and recommendations.

UNWTO and WHO stand ready to work closely with all those communities and countries affected by the current health emergency, to build for a better and more resilient future. Travel restrictions going beyond these may cause unnecessary interference with international traffic, including negative repercussions on the tourism sector.

At this challenging time, UNWTO and WHO join the international community in standing in solidarity with affected countries.

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Moderna Ships mRNA Vaccine Against Novel Coronavirus (mRNA-1273) for Phase 1 Study
February 24, 2020

Clover and GSK Announce Research Collaboration to Evaluate Coronavirus (COVID-19) Vaccine Candidate with Pandemic Adjuvant System
February 24, 2020

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Emergencies

Ebola – DRC+
Public Health Emergency of International Concern (PHEIC)

Ebola Outbreak in DRC 81: 23 February 2020
[Excerpts]
Situation Update
This week, the incidence of new confirmed Ebola virus disease (EVD) cases remained low (Figure 1). From 17 to 23 February 2020, one new confirmed case was reported in the Democratic Republic of the Congo. The case was reported in Beni Health Zone, North Kivu Province on 17 February 2020. The person is a contact of a confirmed case, was under surveillance at the time of illness onset, and is now receiving care at an Ebola Treatment Centre.

In the past 21 days (3 to 23 February 2020), the outbreak has been confined to a relatively small geographic area. During this period, five new confirmed cases were reported from two health areas in North Kivu Province; both areas are within Beni Health Zone (Figure 2, Table 1). It has been more than 21 days since new cases were confirmed from Mabalako Health Zone, and over 42 days since new cases were detected in Musienene Health Zone.

While we are cautiously optimistic about the overall trend and reduced geographic spread of the outbreak, the risk of resurgence within the Democratic Republic of the Congo and neighbouring countries remains high, and the continued containment of the outbreak is contingent on maintaining access and security in affected communities…

…Conclusion
For the third consecutive week, new confirmed cases have only been reported from Beni Health Zone. While there is room for cautious optimism regarding the low number of new confirmed cases reported recently, continued access and heightened vigilance is required to mitigate risks of potential re-emergence of the outbreak.

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Emergencies

POLIO
Public Health Emergency of International Concern (PHEIC)
http://polioeradication.org/polio-today/polio-now/this-week/

Polio this week as of 26 February 2020
:: Do you wish to become a member of the Polio Transition Independent Monitoring Board? If so, you are invited to send in your application by 11 March 2020. Details of role requirements can be found here.
:: To know more about the state of poliovirus surveillance and the opportunities explored to enhance surveillance in priority areas, take a look at the newly released 2019 Global Polio Surveillance Status Report.

Summary of new viruses this week (AFP cases and ES positives):
:: Afghanistan: one WPV1 positive environmental sample
:: Pakistan: two WPV1 cases and 14 WPV1 positive environmental samples
:: *Central African Republic:* one cVDPV2 positive environmental sample
:: Benin: one cVDPV2 case
:: Ghana: six cVDPV2 cases and two cVDPV2 positive environmental samples
:: Togo: two cVDPV2 cases

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WHO Grade 3 Emergencies [to 29 Feb 2020]
Democratic Republic of the Congo
:: Ebola Outbreak in DRC 81: 23 February 2020
[See Emergencies above for detail]

Nigeria
:: WHO reaffirms commitment to support Nigeria in response to COVID19
28 February 2020

Mozambique floods - *No new digest announcements identified*
Somalia - *No new digest announcements identified*
South Sudan - *No new digest announcements identified*
Syrian Arab Republic - *No new digest announcements identified*
Yemen - *No new digest announcements identified*

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WHO Grade 2 Emergencies [to 29 Feb 2020]
Measles in Europe
:: Supporting Serbia to strengthen health systems and improve health 28-02-2020

Iraq
:: WHO delivers ambulances to strengthen referral pathways in Kurdistan region of Iraq
Erbil, 17 February 2020 – The World Health Organization (WHO) today handed over a new batch of fully equipped ambulances to the Ministry of Health in Kurdistan Region of Iraq to support the needs of internally displaced persons (IDP) and the host community.

Afghanistan - *No new digest announcements identified*
Angola - *No new digest announcements identified*
Burkina Faso [in French] - *No new digest announcements identified*
Burundi - *No new digest announcements identified*
Cameroon - *No new digest announcements identified*
Central African Republic - *No new digest announcements identified*
Ethiopia - *No new digest announcements identified*
HIV in Pakistan - *No new digest announcements identified*
Iran floods 2019 - *No new digest announcements identified*
Libya - *No new digest announcements identified*
Malawi floods - *No new digest announcements identified*
MERS-CoV - *No new digest announcements identified*
Myanmar - *No new digest announcements identified*
Niger - *No new digest announcements identified*
occupied Palestinian territory - *No new digest announcements identified*
Sudan - *No new digest announcements identified*
Ukraine - *No new digest announcements identified*
Zimbabwe - *No new digest announcements identified*

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WHO Grade 1 Emergencies [to 29 Feb 2020]
Chad - *No new digest announcements identified*
Djibouti - *No new digest announcements identified*
Kenya - *No new digest announcements identified*
Mali - *No new digest announcements identified*
Namibia - viral hepatitis - *No new digest announcements identified*
Tanzania - *No new digest announcements identified*

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UN OCHA – L3 Emergencies
The UN and its humanitarian partners are currently responding to three 'L3' emergencies. This is the global humanitarian system's classification for the response to the most severe, large-scale humanitarian crises.
Syrian Arab Republic
:: Recent Developments in Northwest Syria - Situation Report No. 9 - As of 26 February 2020
HIGHLIGHTS
More than 948,000 people have been displaced in northwest Syria since 1 December 2019. Some 569,000 of them are children and over 195,000 of them are women, together comprising 81 percent of the newly displaced population.
The current crisis is the worst that northwest Syria has experienced since the beginning of the conflict. More people have been displaced into a smaller area in a shorter period of time than ever before, with nowhere else to flee. Lives are increasingly at risk as increasing numbers of people are concentrated in smaller areas. Many are moving to unsafe areas as they have no other options. Their vulnerability and desperation is increasing, with reports of exploitation of women and girls, the separation of children from their families, and increasing rates of malnutrition.
The humanitarian community has revised its readiness and response plan to reflect the needs of the newly displaced people, host communities and people who had previously been displaced. Increased funding, reprogramming flexibility and other support is needed to enable humanitarian partners to suitably scale up the emergency response. Most importantly, an immediate cessation of violence is critical to save lives and alleviate suffering of hundreds of thousands of people.

Yemen - *No new digest announcements identified*

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UN OCHA – Corporate Emergencies
When the USG/ERC declares a Corporate Emergency Response, all OCHA offices, branches and sections provide their full support to response activities both at HQ and in the field.

CYCLONE IDAI and Kenneth - *No new digest announcements identified*
EBOLA OUTBREAK IN THE DRC - *No new digest announcements identified*

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WHO & Regional Offices [to 29 Feb 2020]
27 February 2020 *Statement*
A Joint Statement on Tourism and COVID-19 - UNWTO and WHO Call for Responsibility and Coordination
[See COVID-19 above for detail]

24 February 2020 News release
France pledges US$100 million (€90 million) for WHO Academy

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Weekly Epidemiological Record, 21 February 2020, vol. 95, 08 (pp. 69–76)
:: Progress towards measles elimination – China, January 2013–June 2019
:: COVID-19 update
::::::

WHO Regional Offices
Selected Press Releases, Announcements
WHO African Region AFRO
:: Nigeria targets nearly 12 million in Yellow fever vaccination across two high risk S...
28 February 2020

WHO Region of the Americas PAHO
:: Face masks during outbreaks: Who, when, where and how to use them (02/28/2020)
:: PAHO Director calls on countries of the Americas to intensify COVID-19 preparedness and response activities (02/26/2020)

WHO South-East Asia Region SEARO
:: 27 January 2020 *News release*
Readiness is the key to detect, combat spread of the new coronavirus
:: 26 December 2019 *News release*
15 years of Indian Ocean tsunami - WHO South-East Asia Region continues to prioritize preparedness to respond to public health emergencies

WHO European Region EURO
:: Supporting Serbia to strengthen health systems and improve health 28-02-2020
:: Smartphone app aids midwives in Kyrgyzstan 28-02-2020
:: Statement for the joint press conference on COVID-19 26-02-2020
:: Joint WHO and ECDC mission in Italy to support COVID-19 control and prevention efforts 24-02-2020

WHO Eastern Mediterranean Region EMRO
No new digest content identified.

WHO Western Pacific Region
No new digest content identified.

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CDC/ACIP [to 29 Feb 2020]
http://www.cdc.gov/media/index.html
https://www.cdc.gov/vaccines/acip/index.html
Latest News Releases
CDC Announces Additional COVID-19 Presumptive Positive Cases Friday, February 28, 2020

Transcript for the CDC Telebriefing Update on COVID-19 Friday, February 28, 2020

CDC Confirms Possible Instance of Community Spread of COVID-19 in U.S. Wednesday, February 26, 2020

Transcript for the CDC Telebriefing Update on COVID-19 Wednesday, February 26, 2020

MMWR News Synopsis Friday, February 28, 2020

Update: Public Health Response to the Coronavirus Disease 2019 Outbreak — United States, February 24, 2020

::::::

Africa CDC [to 29 Feb 2020]
http://www.africacdc.org/
News
African Union Mobilizes Continent-Wide Response to COVID-19 Outbreak
ADDIS ABABA, ETHIOPIA, 24 FEBRUARY 2020. The Chairperson, African Union Commission, H.E. Mr Moussa Faki Mahamat, said that the Commission will strengthen partnerships and coordination across Africa to to respond to the 2019 novel coronavirus disease (COVID-19) outbreak…

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China CDC
http://www.chinacdc.cn/en/
No new digest content identified.

National Health Commission of the People's Republic of China
http://en.nhc.gov.cn/
News
Feb 29: Daily briefing on novel coronavirus cases in China
On Feb 28, 31 provincial-level regions on the Chinese mainland as well as the Xinjiang Production and Construction Corps reported 427 new cases of confirmed infections, 248 new cases of suspected infections, and 47 deaths.

Li urges more R&D in outbreak fight
2020-02-29
Premier calls for developing enhanced test kits, pharmaceuticals, vaccines
Premier Li Keqiang urged greater breakthroughs in the research and development of more efficient test kits, pharmaceuticals and vaccines to help the country better battle the novel coronavirus epidemic.
Li's remark on Friday came as he visited a national emergency response platform in Beijing coping with the COVID-19 outbreak…

Epidemic easing at its epicenter
2020-02-29

Health official calls for caution as work resumes
2020-02-29

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Announcements

Paul G. Allen Frontiers Group [to 29 Feb 2020]
https://alleninstitute.org/what-we-do/frontiers-group/news-press/
News
No new digest content identified.

BMGF - Gates Foundation [to 29 Feb 2020]
http://www.gatesfoundation.org/Media-Center/Press-Releases
FEBRUARY 24, 2020
Bill & Melinda Gates Foundation Commits $10 Million to Support Global Response on East Africa Locust Invasion
SEATTLE February 24, 2020 – The Bill & Melinda Gates Foundation announced today that it is contributing $10 million to the United Nations Food and Agriculture Organization (FAO) to support its work with governments in Ethiopia, Kenya, and Somalia, to combat a locust infestation in East Africa that is posing a significant threat to food production and livelihoods in the region. The foundation is joining several other donors in responding to FAO's urgent appeal to contain the crisis.

Bill & Melinda Gates Medical Research Institute [to 29 Feb 2020]
https://www.gatesmri.org/
The Bill & Melinda Gates Medical Research Institute is a non-profit biotech organization. Our mission is to develop products to fight malaria, tuberculosis, and diarrheal diseases—three major causes of mortality, poverty, and inequality in developing countries. The world has unprecedented scientific tools at its disposal; now is the time to use them to save the lives of the world's poorest people

No new digest content identified.

CARB-X **[**to 29 Feb 2020]
https://carb-x.org/
CARB-X is a non-profit public-private partnership dedicated to accelerating antibacterial research to tackle the global rising threat of drug-resistant bacteria.
02.25.2020 |
CARB-X funds Peptilogics to develop a new class of antibiotics to treat serious superbug infections associated with implants
CARB-X is awarding Peptilogics, headquartered in Pittsburgh, USA, up to US$2.56 million in non-dilutive funding to develop a new class of peptide antibiotics with broad activity against drug-resistant bacteria. The company could receive up to $9.61 million more in additional funding if the project achieves certain development milestones, for a potential total of up to $12.17 million.

CEPI – Coalition for Epidemic Preparedness Innovations [to 29 Feb 2020]
News
No new digest content identified.

Clinton Health Access Initiative, Inc. (CHAI) [to 29 Feb 2020]
https://clintonhealthaccess.org/
News & Press Releases
No new digest content identified.

EDCTP [to 29 Feb 2020]
http://www.edctp.org/
The European & Developing Countries Clinical Trials Partnership (EDCTP) aims to accelerate the development of new or improved drugs, vaccines, microbicides and diagnostics against HIV/AIDS, tuberculosis and malaria as well as other poverty-related and neglected infectious diseases in sub-Saharan Africa, with a focus on phase II and III clinical trials
Latest news
No new digest content identified.

Emory Vaccine Center [to 29 Feb 2020]
http://www.vaccines.emory.edu/
No new digest content identified.

European Medicines Agency [to 29 Feb 2020]
http://www.ema.europa.eu/ema/
News & Press Releases
News: Meeting highlights from the Committee for Medicinal Products for Human Use (CHMP) 24-27 February 2020
CHMP, Last updated: 28/02/2020

European Vaccine Initiative [to 29 Feb 2020]
http://www.euvaccine.eu/news-events
No new digest content identified.

FDA [to 29 Feb 2020]
https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/default.htm
Press Announcements
Coronavirus (COVID-19) Update: FDA Issues New Policy to Help Expedite Availability of Diagnostics
Feb 29, 2020, 10:33 ET
…The new policy is for certain laboratories that develop and begin to use validated COVID-19 diagnostics before the FDA has completed review of their Emergency Use Authorization (EUA) requests. The FDA can issue an EUA to permit the use, based on scientific data, of certain medical products that may be effective in diagnosing, treating or preventing a disease or condition when there is a determination, by the Secretary of Health and Human Services (HHS), that there is a public health emergency or a significant potential for a public health emergency that has a significant potential to affect national security or the health and security of U.S. citizens, and a declaration that circumstances exist justifying the medical products' emergency use.
On Feb. 4, 2020, the Secretary of HHS determined that there is a public health emergency and that circumstances exist justifying the authorization of emergency use of in vitro diagnostics for detection and/or diagnosis of the COVID-19 outbreak. Rapid detection of COVID-19 cases in the U.S. requires wide availability of

diagnostic testing to control the emergence of a rapidly spreading, severe illness. The FDA has authorized one EUA for COVID-19 that is in use by the U.S. Centers for Disease Control and Prevention (CDC) and some public health labs across the country.
The guidance issued today describes a policy enabling laboratories to immediately use tests they developed and validated in order to achieve more rapid testing capacity in the U.S…

February 27, 2020 - Coronavirus (COVID-19) Supply Chain Update
…Since January 24, the FDA has been in touch with more than 180 manufacturers of human drugs, not only to remind them of applicable legal requirements for notifying the FDA of any anticipated supply disruptions, but also asking them to evaluate their entire supply chain, including active pharmaceutical ingredients (the main ingredient in the drug and part that produces the intended effects, e.g., acetaminophen) and other components manufactured in China.
Also, as part of our efforts, the FDA has identified about 20 other drugs, which solely source their active pharmaceutical ingredients or finished drug products from China. We have been in contact with those firms to assess whether they face any drug shortage risks due to the outbreak. None of these firms have reported any shortage to date. Also, these drugs are considered non-critical drugs.
We will remain in contact with manufacturers so that we can continue to assist them with any potential issues in the fastest way…

February 24, 2020 - Coronavirus Update: FDA steps to ensure quality of foreign products

Fondation Merieux [to 29 Feb 2020]
http://www.fondation-merieux.org/
News, Events
Mérieux Foundation co-organized event
5th Meeting of the GTFCC Water, Sanitation and Hygiene (WASH) Working Group
March 3 - 4, 2020 - Dar es Salam (Tanzania)

Gavi [to 29 Feb 2020]
https://www.gavi.org/
25 February 2020
DRC: vaccination sessions increase by 50% in vulnerable provinces since 2018
:: In the nine provinces where half of all the DRC's under-immunised children live, there are now 24,000 routine vaccination sessions per month
:: New technology enabling health workers to monitor key indicators in real time has contributed to the dramatic increase
:: Progress comes at a time when the country is battling outbreaks of Ebola, measles and cholera, among other diseases

GHIT Fund [to 29 Feb 2020]
https://www.ghitfund.org/newsroom/press
GHIT was set up in 2012 with the aim of developing new tools to tackle infectious diseases that No new digest content identified.

Global Fund [to 29 Feb 2020]
https://www.theglobalfund.org/en/news/
News & Stories
Updates
Search for Independent Board Committee Members
26 February 2020
The Global Fund Board is looking for three independent experts to serve as non-voting members of Global Fund Board standing committees for 2020-2022. Financial audit, forensics investigations and ethics experts are invited to submit applications to serve on the Audit and Finance Committee and the Ethics and Governance Committee. The application deadline is 27 March 2020.

Updates
Search for Chief Financial Officer and Head of Health Finance
25 February 2020

Hilleman Laboratories [to 29 Feb 2020]
http://www.hillemanlabs.org/
No new digest content identified.

Human Vaccines Project [to 29 Feb 2020]

http://www.humanvaccinesproject.org/media/press-releases/
Press Releases
No new digest content identified.

IAVI [to 29 Feb 2020]
https://www.iavi.org/newsroom
No new digest content identified.

International Coalition of Medicines Regulatory Authorities [ICMRA]
http://www.icmra.info/drupal/en/news
Selected Statements, Press Releases, Research
No new digest content identified.

International Generic and Biosimilar Medicines Association [IGBA]
https://www.igbamedicines.org/
News
No new digest content identified.

IFFIm
http://www.iffim.org/
06 Feb 2020
IFFIm Vaccine Bond issuance named 2019 "Deal of the Year" by mtn-i
London, 6 February 2020 -- IFFIm, Skandinaviska Enskilda Banken (SEB) and the Toronto-Dominion Bank have been awarded SRI "Deal of the Year" by news, data and analytics publisher mtn-i for a July 2019 Vaccine Bond issuance that raised funding to research and develop new vaccines.
The award was given in the SRI: Green/Social category for IFFIm's July 2019 issuance that raised 600 million Norwegian krone (US$ 65 million) for CEPI, the Coalition for Epidemic Preparedness Innovations. CEPI is a public private initiative that accelerates development of vaccines against emerging infectious diseases and enables equitable access to these vaccines during outbreaks. These bonds provided immediate funding to combat diseases like MERS, Nipah virus and Lassa fever.
The transaction allowed Norway to accelerate its multi-year pledge to CEPI by leveraging IFFIm's access to the capital markets. Norway is a donor to IFFIm, Gavi and CEPI…

IFRC [to 29 Feb 2020]
http://media.ifrc.org/ifrc/news/press-releases/
Selected Press Releases, Announcements
DPRK
Red Cross granted exemption from UN sanctions to provide humanitarian aid in DPRK
Pyongyang/Kuala Lumpur/Geneva, 24 February 2020 – The International Federation of Red Cross and Red Crescent Socieities (IFRC) has been granted an exemption to United Nations sanctions, imposed on the Democratic People's Republic of Korea by United Nations Security Council Resolution 1718 (2006) and subsequent resolutions, allowing for the provision of life-saving support to protect people from the spread of the new coronavirus, COVID-19.
The potential for an outbreak of COVID-19 in the Democratic People's Republic of Korea poses a threat to millions of people who are already in need of humanitarian assistance.
Xavier Castellanos, IFRC's Asia Pacific Regional Director said: "We know that there is urgent need of personal protective gear and testing kits, items vital to prepare for a possible outbreak. This exemption is a life-saving intervention and an important measure to ensure that sanctions do not bear a negative impact on the people of the Democratic People's Republic of Korea."

IVAC [to 29 Feb 2020]
https://www.jhsph.edu/research/centers-and-institutes/ivac/index.html
Updates
No new digest content identified.

IVI [to 29 Feb 2020]
http://www.ivi.int/
Selected IVI News & Announcements
Korea should join efforts in vaccine development to prevent pandemics
by Jerome H. Kim, Director General of the International Vaccine Institute (IVI)
Feb 26,2020
Originally published in the JoongAng Ilbo (Korean language) and Korea JoongAng Daily (English language)

JEE Alliance [to 29 Feb 2020]
https://www.jeealliance.org/
Selected News and Events
No new digest content identified.

MSF/Médecins Sans Frontières [to 29 Feb 2020]
http://www.msf.org/
Latest [Selected Announcements]
Syria
MSF to scale up response in Idlib, Syria as tensions reach a new peak
Statement 28 Feb 2020

Mediterranean migration
Ocean Viking arbitrarily quarantined by Italian authorities over COVID…
Project Update 28 Feb 2020
As Italy was hit by the COVID-19 coronavirus outbreak late last week, the Ocean Viking, the search and rescue ship operated by Médecins Sans Frontières (MSF) and SOS MEDITERRANEE, was put under quarantine following the disembarkation of 276 people rescued at sea in the prior days.
The Ocean Viking has complied with all measures and has now been anchored off Sicily for five days. It is increasingly clear that quarantine restrictions are being discriminatorily applied only to search and rescue vessels.
"Quarantining the Ocean Viking is equivalent to stopping an ambulance in the middle of an emergency," said Michael Fark, MSF head of mission for Search and Rescue. "This is a discriminatory action – the only vessels that have been put into quarantine are those conducting rescues."
In the past 48 hours we have had reports of boats in distress in the central Mediterranean. We are deeply worried about the fate of people travelling in them…

National Vaccine Program Office - U.S. HHS [to 29 Feb 2020]
https://www.hhs.gov/vaccines/about/index.html
NVAC 2020 Meetings
June 9-10, 2020 NVAC Meeting
September 23-24, 2020 Meeting (Virtual)

NIH [to 29 Feb 2020]
http://www.nih.gov/news-events/news-releases
Selected News Releases
COVID-19 a Reminder of the Challenge of Emerging Infectious Diseases
February 28, 2020 — The respiratory illness caused by a novel coronavirus poses complex challenges to the global public health, research and medical communities.

NIH announces $1 million prize competition to target global disease diagnostics
February 26, 2020 — Bill & Melinda Gates Foundation to offer supplementary support for designs that can be developed into products on a rapid timeframe.

NIH clinical trial of remdesivir to treat COVID-19 begins
February 25, 2020 — Study enrolling hospitalized adults with COVID-19 in Nebraska.
A randomized, controlled clinical trial to evaluate the safety and efficacy of the investigational antiviral remdesivir in hospitalized adults diagnosed with coronavirus disease 2019 (COVID-19) has begun at the University of Nebraska Medical Center (UNMC) in Omaha. The trial regulatory sponsor is the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health. This is the first clinical trial in the United States to evaluate an experimental treatment for COVID-19, the respiratory disease first detected in December 2019 in Wuhan, Hubei Province, China…

PATH [to 29 Feb 2020]
https://www.path.org/media-center/
Selected Announcements
No new digest content identified.

Sabin Vaccine Institute [to 29 Feb 2020]
http://www.sabin.org/updates/pressreleases
Statements and Press Releases
Sabin Vaccine Institute Launches Vaccine Acceptance and Demand Program -- Now recruiting for a number of positions:
Senior Manager, Vaccine Acceptance
Reports to: Vice President, Vaccine Acceptance and Demand Location: Washington, DC

Vice President, Vaccine Acceptance and Demand
Reports to: President, Global Immunization Location: Washington, DC
Senior Manager, Social Media Research
Reports to: Vice President, Vaccine Acceptance and Demand Location: Washington, DC
Senior Manager, Immunization Advocates
Reports to: Vice President, Vaccine Acceptance and Demand Location: Washington, DC

UNAIDS [to 29 Feb 2020]
http://www.unaids.org/en
Selected Press Releases/Reports/Statements
March 1, 2020
ZERO DISCRIMINATION AGAINST WOMEN AND GIRLS
On Zero Discrimination Day this year, UNAIDS is challenging the discrimination faced by women and girls in all their diversity and raising awareness and mobilizing action to promote equality and empowerment for women and girls.

24 February 2020
Investing in HIV really does pay off

UNICEF [to 29 Feb 2020]
https://www.unicef.org/media/press-releases
Press release
Statement
UNICEF Executive Director Henrietta Fore: Briefing to the Security Council on the situation for children in Syria
This is a summary of what was said by Henrietta Fore, UNICEF Executive Director – to whom quoted text may be attributed – at today's Security Council briefing at United Nations in New York
27/02/2020

Statement
Remarks by Afshan Khan, UNICEF Regional Director, On behalf of Henrietta Fore, UNICEF Executive Director
Human Rights Council Panel Geneva, Switzerland February 24, 2020 [Children's rights are human rights]
25/02/2020

Vaccination Acceptance Research Network (VARN) [to 29 Feb 2020]
https://vaccineacceptance.org/news.html#header1-2r
Announcements
Sabin Vaccine Institute Launches Vaccine Acceptance and Demand Program -- Now recruiting for a number of positions:
Senior Manager, Vaccine Acceptance
Reports to: Vice President, Vaccine Acceptance and Demand Location: Washington, DC
Vice President, Vaccine Acceptance and Demand
Reports to: President, Global Immunization Location: Washington, DC
Senior Manager, Social Media Research
Reports to: Vice President, Vaccine Acceptance and Demand Location: Washington, DC
Senior Manager, Immunization Advocates
Reports to: Vice President, Vaccine Acceptance and Demand Location: Washington, DC

Vaccine Confidence Project [to 29 Feb 2020]
http://www.vaccineconfidence.org/
Latest News & Archive
No new digest content identified.

Vaccine Education Center – Children's Hospital of Philadelphia [to 29 Feb 2020]
http://www.chop.edu/centers-programs/vaccine-education-center
Newsletter February 2020
Announcements: Updated Q&A sheets, new videos, and Dr. Offit interview

Wellcome Trust [to 29 Feb 2020]
https://wellcome.ac.uk/news
Opinion | 27 February 2020
Global institutions must act urgently and decisively to tackle COVID-19
Jeremy Farrar, Director Wellcome Trust

The COVID-19 outbreak is not just a public health crisis, it's rapidly becoming a global crisis – of health, economics and politics.
[See Emergencies above]

The Wistar Institute [to 29 Feb 2020]
https://www.wistar.org/news/press-releases
Press Releases
No new digest content identified.

World Organisation for Animal Health (OIE) [to 29 Feb 2020]
https://www.oie.int/en/for-the-media/press-releases/2020/
Press Releases
No new digest content identified.

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ARM [Alliance for Regenerative Medicine] [to 29 Feb 2020]
https://alliancerm.org/press-releases/
Press Releases
No new digest content identified.

BIO [to 29 Feb 2020]
https://www.bio.org/press-releases
Press Releases
**BIO Asia Conference in Tokyo Cancelled Amid
COVID-19 Outbreak**
Washington, DC – February 21, 2020 - The Biotechnology Innovation Organization (BIO) announced today, it is canceling the annual BIO Asia conference in Tokyo scheduled for March 10-11. The decision was based on the global impact of COVID-19 and Japanese government recommendations.
"Our attendees' health and safety are our utmost priority," said Jim Greenwood, BIO President & CEO. "We offer our support and sympathy to all of those who've been impacted by the virus around the world."…

DCVMN – Developing Country Vaccine Manufacturers Network [to 29 Feb 2020]
http://www.dcvmn.org/
News
Mini E-workshop on Vaccine Safety monitoring and Pharmacovigilance tools
16 March 2020 to 18 March 2020 / International (Webex)

IFPMA [to 29 Feb 2020]
http://www.ifpma.org/resources/news-releases/
Selected Press Releases, Statements, Publications
No new digest content identified.

PhRMA [to 29 Feb 2020]
http://www.phrma.org/
Selected Press Releases, Statements
Rare Disease Day 2020: Progress toward cures
Richard Moscicki, M.D. | February 24, 2020
Stephen J. Ubl | February 20, 2020
Today kicks off Rare Disease Week, an annual opportunity to celebrate the incredible progress that has been made to treat rare diseases and reflect on the need for continued research and development (R&D) to address unmet medical needs. While categorized as rare, 30 million Americans, or 10% of the population, are still impacted by one of 7,000 rare diseases.
Conquering rare diseases presents a unique scientific challenge for researchers and requires collaboration among stakeholders across the public and private sectors. Although advances in pediatric research have improved the lives of infants, children, adolescents and society at large, tremendous unmet needs remain. Currently just 5% of rare diseases, including those that impact children, have an available treatment option. America's biopharmaceutical companies have more than 560 medicines in development for rare diseases and more that 770 medicines have been approved to treat rare diseases over the past 35 years. Last year, America's biopharmaceutical companies made significant progress toward this commitment with 21 novel medicines approved to treat rare diseases…

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Journal Watch

Vaccines and Global Health: The Week in Review continues its weekly scanning of key peer-reviewed journals to identify and cite articles, commentary and editorials, books reviews and other content supporting our focu-s on vaccine ethics and policy. Journal Watch is not intended to be exhaustive, but indicative of themes and issues the Center is actively tracking. We selectively provide full text of some editorial and comment articles that are specifically relevant to our work. Successful access to some of the links provided may require subscription or other access arrangement unique to the publisher.

If you would like to suggest other journal titles to include in this service, please contact David Curry at: david.r.curry@centerforvaccineethicsandpolicy.org

American Journal of Infection Control
March 2020 Volume 48, Issue 3, p239-354
http://www.ajicjournal.org/current
[Reviewed earlier]

American Journal of Preventive Medicine
March 2020 Volume 58, Issue 3, p313-472
http://www.ajpmonline.org/current
[Reviewed earlier]

American Journal of Public Health
March 2020 110(33)
http://ajph.aphapublications.org/toc/ajph/current
[Reviewed earlier]

American Journal of Tropical Medicine and Hygiene
Volume 102, Issue 2, February 2020
http://www.ajtmh.org/content/journals/14761645/102/2
[Reviewed earlier]

Annals of Internal Medicine
18 February 2020 Vol: 172, Issue 4
http://annals.org/aim/issue
[Reviewed earlier]

Artificial Intelligence – An International Journal
Volume 281 April 2020
https://www.sciencedirect.com/journal/artificial-intelligence/vol/281/suppl/C
Research article Abstract only
Ethical approaches and autonomous systems
T.J.M. Bench-Capon
Article 103239
Abstract
In this paper we consider how the three main approaches to ethics – deontology, consequentialism and virtue ethics – relate to the implementation of ethical agents. We provide a description of each approach and how agents might be implemented by designers following the different approaches. Although there are numerous examples of agents implemented within the consequentialist and deontological approaches, this is not so for virtue ethics. We therefore propose a novel means of implementing agents within the virtue ethics approach. It is seen that each approach has its own particular strengths and weaknesses when considered as the basis for implementing ethical agents, and that the different approaches are appropriate to different kinds of system.

BMC Cost Effectiveness and Resource Allocation
http://resource-allocation.biomedcentral.com/
(Accessed 29 Feb 2020)
[No new digest content identified]

BMJ Global Health
February 2020 - Volume 5 - 2
https://gh.bmj.com/content/5/2
[Reviewed earlier]

BMC Health Services Research
http://www.biomedcentral.com/bmchealthservres/content
(Accessed 29 Feb 2020)
[No new digest content identified]

BMC Infectious Diseases
http://www.biomedcentral.com/bmcinfectdis/content
(Accessed 29 Feb 2020)
[No new digest content identified]

BMC Medical Ethics
http://www.biomedcentral.com/bmcmedethics/content
(Accessed 29 Feb 2020)
[No new digest content identified]

BMC Medicine
http://www.biomedcentral.com/bmcmed/content
(Accessed 29 Feb 2020)
[No new digest content identified]

BMC Pregnancy and Childbirth
http://www.biomedcentral.com/bmcpregnancychildbirth/content
(Accessed 29 Feb 2020)
[No new digest content identified]

BMC Public Health
http://bmcpublichealth.biomedcentral.com/articles
(Accessed 29 Feb 2020)
Can the prophylactic quadrivalent HPV vaccine be used as a therapeutic agent in women with CIN? A randomized trial
Human papillomavirus (HPV) is one of the most significant risk factors for cervical cancer. The HPV vaccine has a very significant impact on the incidence of cervical cancer. The present study aimed to investi...
Authors: Mojgan Karimi-Zarchi, Leila Allahqoli, Ameneh Nehmati, Abolfazl Mehdizadeh Kashi, Shokouh Taghipour-Zahir and Ibrahim Alkatout
Citation: BMC Public Health 2020 20:274
Content type: Research article
Published on: 27 February 2020

Impact of mother's education on full immunization of children aged 12–23 months in Eritrea: population and health survey 2010 data analysis
Although vaccination coverage in Eritrea has improved in recent years, some children are still missing out, and it's important to identify risk factors for lower coverage in order to target campaigns and inter...
Authors: Fitsum Kibreab, Sonia Lewycka and Andebrhan Tewelde
Citation: BMC Public Health 2020 20:267
Content type: Research article
Published on: 22 February 2020

BMC Research Notes
http://www.biomedcentral.com/bmcresnotes/content
(Accessed 29 Feb 2020)
[No new digest content identified]

BMJ Open
January 2020 - Volume 10 - 1
http://bmjopen.bmj.com/content/current
[Reviewed earlier]

Bulletin of the World Health Organization
Volume 98, Number 2, February 2020, 77-148
https://www.who.int/bulletin/volumes/98/2/en/
Special theme: accelerating universal health coverage
[Reviewed earlier]

Child Care, Health and Development
Volume 46, Issue 2 Pages: 155-248 March 2020
https://onlinelibrary.wiley.com/toc/13652214/current
[Reviewed earlier]

Clinical Therapeutics
January 2020 Volume 42, Issue 1, p1-236
http://www.clinicaltherapeutics.com/current
[Reviewed earlier]

Clinical Trials
Volume 17 Issue 1, February 2020
https://journals.sagepub.com/toc/ctja/17/1
[Reviewed earlier]

Conflict and Health
http://www.conflictandhealth.com/
[Accessed 29 Feb 2020]
[No new digest content identified]

Contemporary Clinical Trials
Volume 89 February 2020
https://www.sciencedirect.com/journal/contemporary-clinical-trials/vol/89/suppl/C
[Reviewed earlier]

The CRISPR Journal
Volume 3, Issue 1 / February 2020
https://www.liebertpub.com/toc/crispr/3/1
Editorial
Ushering in the Next CRISPR Decade
Rodolphe Barrangou
Page:2
Published Online:17 February 2020

Perspectives
Ethical Considerations in Therapeutic Clinical Trials Involving Novel Human Germline-Editing Technology
Carolyn Brokowski and Mazhar Adli
Pages:18–26
Published Online:17 February 2020
https://doi.org/10.1089/crispr.2019.0051
Abstract
Much of the international community opposes editing the human germline. Yet, given enough experience to become better acquainted with strengths and limitations, prominent international figures are cautiously optimistic about using CRISPR-like novel technologies for clinical applications. Not only might such applications be morally (ethically) permissible, but clinical trials for therapeutic aims could be necessary. Here, we assess critical dimensions of early-phase trials deploying germline-editing technologies for "bench-to-bedside" translation. While assuming no overarching position favoring or opposing such research, our discussion primarily focuses on normative considerations. First, we evaluate the imperative of conducting trials to produce reliable, reproducible knowledge and advancement, if possible, for human diseases that are incurable and/or whose treatments are deficient. Second, we address complexities in assessing risk and potential-benefit profiles. Third, we review the moral foundations of trial participation through well-established and accepted bioethical principles: autonomy, nonmaleficence, beneficence, and distributive justice. Finally, we raise critical questions about the scope of regulatory authority and investigator and funder accountability for these applications that could have everlasting impacts.

Open Access
Procreative Non-Maleficence: A South African Human Rights Perspective on Heritable Human Genome Editing
Donrich Thaldar and Bonginkosi Shozi
Pages:32–36
Published Online:17 February 2020
https://doi.org/10.1089/crispr.2019.0036

Ordo-Responsibility for Germline Gene Editing
Robert Ranisch, Tina Rudolph, Hans-Joachim Cremer, and Nikolaus Knoepffler
Pages:37–43
Published Online:17 February 2020
https://doi.org/10.1089/crispr.2019.0040

Research Articlen Open Access
Germline Genome Editing Research: What Are Gamete Donors (Not) Informed About in Consent Forms?
Emilia Niemiec and Heidi Carmen Howard
Pages:52–63
Published Online:17 February 2020
https://doi.org/10.1089/crispr.2019.0043

Current Genetic Medicine Reports
Volume 8, Issue 1, March 2020
https://link.springer.com/journal/40142/8/1
[Reviewed earlier]

Current Opinion in Infectious Diseases
February 2020 - Volume 33 - Issue 1
https://journals.lww.com/co-infectiousdiseases/pages/currenttoc.aspx
[Reviewed earlier]

Developing World Bioethics
Volume 19, Issue 4 Pages: 187-247 December 2019
https://onlinelibrary.wiley.com/toc/14718847/current
[Reviewed earlier]

Development in Practice
Volume 30, Issue 1, 2020
http://www.tandfonline.com/toc/cdip20/current
[Reviewed earlier]

Disaster Medicine and Public Health Preparedness
Volume 13 - Issue 5-6 - December 2019
https://www.cambridge.org/core/journals/disaster-medicine-and-public-health-preparedness/
[Reviewed earlier]

Disasters
Volume 44, Issue 1 Pages: 1-232 January 2020
https://onlinelibrary.wiley.com/toc/14677717/current
[Reviewed earlier]

EMBO Reports
Volume 21 Issue 2 5 February 2020
https://www.embopress.org/toc/14693178/current
[Reviewed earlier]

Emerging Infectious Diseases
Volume 26, Number 2—February 2020
http://wwwnc.cdc.gov/eid/
[Reviewed earlier]

Epidemics
Volume 29 December 2019
https://www.sciencedirect.com/journal/epidemics/vol/29/suppl/C
[Reviewed earlier]

Epidemiology and Infection
Volume 148 - 2020
https://www.cambridge.org/core/journals/epidemiology-and-infection/latest-issue
[Reviewed earlier]

Ethics & Human Research
Volume 42, Issue 1 Pages: 1-40 January–February 2020
https://onlinelibrary.wiley.com/toc/25782363/current
Off-Trial Access :: Deception :: Crowdsourced Research :: Single IRBs
[Reviewed earlier]

The European Journal of Public Health
Volume 30, Issue 1, February 2020
https://academic.oup.com/eurpub/issue/30/1
[Reviewed earlier]

Gates Open Research
https://gatesopenresearch.org/browse/articles
[Accessed 29 Feb 2020]
[No new digest content identified]

Genome Medicine
https://genomemedicine.biomedcentral.com/articles
[Accessed 29 Feb 2020]
Large-scale public data reuse to model immunotherapy response and resistance
Authors: Jingxin Fu, Karen Li, Wubing Zhang, Changxin Wan, Jing Zhang, Peng Jiang and X. Shirley Liu
Citation: Genome Medicine 2020 12:21
Content type: Database
Published on: 26 February 2020
Abstract
Despite growing numbers of immune checkpoint blockade (ICB) trials with available omics data, it remains challenging to evaluate the robustness of ICB response and immune evasion mechanisms comprehensively. To address these challenges, we integrated large-scale omics data and biomarkers on published ICB trials, non-immunotherapy tumor profiles, and CRISPR screens on a web platform TIDE (http://tide.dfci.harvard.edu). We processed the omics data for over 33K samples in 188 tumor cohorts from public databases, 998 tumors from 12 ICB clinical studies, and eight CRISPR screens that identified gene modulators of the anticancer immune response. Integrating these data on the TIDE web platform with three interactive analysis modules, we demonstrate the utility of public data reuse in hypothesis generation, biomarker optimization, and patient stratification.

Global Health Action
Volume 12, 2019 Issue 1
https://www.tandfonline.com/toc/zgha20/12/sup1?nav=tocList
[Reviewed earlier]

Global Health: Science and Practice (GHSP)
Vol. 7, No. 4 December 23, 2019
http://www.ghspjournal.org/content/current
[Reviewed earlier]

Global Public Health
Volume 15, 2020 Issue 3
http://www.tandfonline.com/toc/rgph20/current
Article
Medical populism and immunisation programmes: Illustrative examples and consequences for public health
Gideon Lasco & Heidi J. Larson
Pages: 334-344
Published online: 20 Oct 2019
ABSTRACT
Various factors have been implicated in vaccine hesitancy and loss of vaccine confidence, but the specific ways and particular moments in which immunisation programmes and vaccine scares are politicised, exacerbating negative attitudes about vaccines and leading to retrogressive policies, have been relatively under-examined. This paper applies the concept of 'medical populism' [Lasco, G., & Curato, N. (2019). Medical populism. Social Science &

Medicine, 221(1), 1–8. doi:10.1016/j.socscimed.2018.12.006] to examine these under-studied dynamics, looking at political actors and how they 'construct antagonistic relations between "the people" whose lives have been put at risk by "the establishment"' in the performance of vaccine-related crises. Four illustrative cases – from Nigeria, Italy, Ukraine, and the Philippines – are presented to demonstrate the descriptive and analytic value of medical populism beyond the framing and characterisation of the politics of health. The study underscores the need to understand people's perceptions and 'explanatory models' of vaccines and vaccine failures, to look at the political milieux that underpin immunisation programmes, and to anticipate and address knowledge claims made by political actors.

Globalization and Health
http://www.globalizationandhealth.com/
[Accessed 29 Feb 2020]
Leaving no one behind: lessons from implementation of policies for universal HIV treatment to universal health coverage
Authors: Yibeltal Assefa, Peter S. Hill, Wim Van Damme, Judith Dean and Charles F. Gilks
Content type: Research
24 February 2020

Health Affairs
Vol. 39, No. 2 February 2020
https://www.healthaffairs.org/toc/hlthaff/current
Opioids, Investing In Social Determinants & More
[New issue; No digest content identified]

Health and Human Rights
Volume 21, Issue 2, December 2019
https://www.hhrjournal.org/volume-21-issue-2-december-2019/
Special Section: Abortion in the Middle East and North Africa
Special Section: Abortion Law Reform
Special Section: Human Rights for Health across the United Nations
[Reviewed earlier]

Health Economics, Policy and Law
Volume 15 - Issue 1 - January 2020
https://www.cambridge.org/core/journals/health-economics-policy-and-law/latest-issue
[Reviewed earlier]

Health Policy and Planning
Volume 34, Issue Supplement_3, December 2019
https://academic.oup.com/heapol/issue/34/Supplement_3
Access to Medicines through Health Systems in Low- and Middle-Income Countries
[Reviewed earlier]

Health Research Policy and Systems
http://www.health-policy-systems.com/content
[Accessed 29 Feb 2020]
[No new digest content identified]

Human Gene Therapy
Volume 31, Issue 3-4 / February 2020
https://www.liebertpub.com/toc/hum/31/3-4
[Reviewed earlier]

Humanitarian Exchange Magazine
Number 76, January 2020
https://odihpn.org/magazine/the-crisis-in-yemen/
The Crisis in Yemen
by HPN
This edition of Humanitarian Exchange focuses on the crisis in Yemen. Since the war there began in 2014, thousands of civilians have been killed or injured and air strikes and ground operations have destroyed hospitals, schools and critical infrastructure. An estimated 80% of Yemenis need humanitarian assistance.

In the lead article, Laurie Lee highlights the critical role Yemenis and Yemeni organisations are playing in addressing the humanitarian challenges in the country, and how NGOs can better support them. Genevieve Gauthier and Marcus Skinner reinforce this point with reference to two local organisations, the Yemen Women's Union and Al Hikma. Warda Saleh, the founder of another Yemeni grassroots organisation, discusses the increased risk of gender-based violence facing women and girls, while Ibrahim Jalal and Sherine El Taraboulsi-McCarthy focus on internal displacement and the opportunities for a more effective humanitarian response. Reflecting on child protection programming in Yemen, Mohammed Alshamaa and Amanda Brydon conclude that multisectoral approaches with local authorities result in better and more sustainable outcomes. Padraic McCluskey and Jana Brandt consider the ethical dilemmas Médecins Sans Frontières (MSF) faced in trying to balance quality and coverage in a mother and child hospital in Taiz. Lindsay Spainhour Baker and colleagues reflect on the challenges involved in gathering and analysing information on the humanitarian situation while Lamis Al-Iryani, Sikandra Kurdi and Sarah Palmer-Felgate discuss the findings from an evaluation of the Yemen Social Fund for Development (SFD) Cash for Nutrition programme. An article by Kristine Beckerle and Osamah Al-Fakih details Yemeni and international organisations' efforts to document and mitigate harm to civilians caught up in the conflict. The edition ends with a piece by Fanny Pettibon, Anica Heinlein and Dhabie Brown outlining CARE's advocacy on the arms trade.

Finally, readers will note that this edition is shorter than usual, largely because it was very difficult to persuade potential authors to write on the Yemen crisis. Many of the individuals and organisations we contacted were either too busy responding or were concerned that writing frankly about their work could negatively affect their operations. HPN has covered many similarly sensitive contexts in Humanitarian Exchange over the last 26 years, but this is the first time we have experienced such reluctance to engage. A worrying sign.

Human Vaccines & Immunotherapeutics (formerly Human Vaccines)
Volume 16, Issue 1, 2020
http://www.tandfonline.com/toc/khvi20/current
[Reviewed earlier]

Infectious Agents and Cancer
http://www.infectagentscancer.com/content
[Accessed 29 Feb 2020]
[No new digest content identified]

Infectious Diseases of Poverty
http://www.idpjournal.com/content
[Accessed 29 Feb 2020]
A mathematical model for simulating the phase-based transmissibility of a novel coronavirus
Authors: Tian-Mu Chen, Jia Rui, Qiu-Peng Wang, Ze-Yu Zhao, Jing-An Cui and Ling Yin
Content type: Research Article
28 February 2020

International Health
Volume 12, Issue 2, February 2020
https://academic.oup.com/inthealth/issue/12/2
[Reviewed earlier]

International Journal of Community Medicine and Public Health
Vol 7, No 3 (2020) March 2020
https://www.ijcmph.com/index.php/ijcmph/issue/view/60
Original Research Articles
Not covered enough: inadequate age appropriate immunisation in urban slums of Delhi: a community based cross sectional survey
Sonali Randhawa, Shomik Ray

Assessment of immunization among newborns: comparison between children delivered vaginally and by cesarean section
Arvinder Pal Singh Narula, Prakash Prabhakarrao Doke, Varsha Mahesh Vaidya, Archana Vasantrao Patil, Tushar Madhavrao Panchanadikar, Girija Narendrakumar Wagh

International Journal of Epidemiology
Volume 48, Issue 6, December 2019
https://academic.oup.com/ije/issue/48/6
[Reviewed earlier]

International Journal of Human Rights in Healthcare
Volume 12 Issue 5
https://www.emerald.com/insight/publication/issn/2056-4902/vol/12/iss/5
[Reviewed earlier]

International Journal of Infectious Diseases
February 2020 Volume 91, p1-270
https://www.ijidonline.com/issue/S1201-9712(19)X0020-X
[Reviewed earlier]

JAMA
February 25, 2020, Vol 323, No. 8, Pages 691-800
http://jama.jamanetwork.com/issue.aspx
Viewpoint
Coronavirus Infections—More Than Just the Common Cold
Catharine I. Paules, MD; Hilary D. Marston, MD, MPH; Anthony S. Fauci, MD
free access has active quiz has multimedia has audio
JAMA. 2020;323(8):707-708. doi:10.1001/jama.2020.0757
In this Viewpoint Anthony Fauci and colleagues review the emergence of pathogenic human coronaviruses (SARS-Cov and MERS-CoV) as background for discussing a rapidly spreading novel coronavirus (2019-nCoV) identified in 2019 in China and the public health strategies necessary to contain the threat.
Audio Interview: Coronavirus Infections—More Than Just the Common Cold
Clinical Review Audio: Dr Anthony Fauci: What Clinicians Need to Know About Coronavirus (CME)
Audio Interview: The 2019 Novel Coronavirus Outbreak – Update From NIAID's Anthony Fauci, MD
Audio Interview: COVID-19 Update From China

The Novel Coronavirus Originating in Wuhan, ChinaChallenges for Global Health Governance
Alexandra L. Phelan, SJD, LLM; Rebecca Katz, PhD, MPH; Lawrence O. Gostin, JD
free access has active quiz has multimedia has audio
JAMA. 2020;323(8):709-710. doi:10.1001/jama.2020.1097
In this Viewpoint, Gostin and colleagues review the emerging novel coronavirus (2019-nCoV) outbreak, discuss the public health benefits and risks of the Chinese government's large city quarantines, and call for WHO leadership to coordinate a global coordinated response that could contain this and prevent similar future outbreaks.
Clinical Review Audio: Dr Anthony Fauci: What Clinicians Need to Know About Coronavirus (CME)
Audio Interview: COVID-19 Update From China

JAMA Pediatrics
February 2020, Vol 174, No. 2, Pages 109-217
http://archpedi.jamanetwork.com/issue.aspx
[Reviewed earlier]

JBI Database of Systematic Review and Implementation Reports
February 2020 - Volume 18 - Issue 2
https://journals.lww.com/jbisrir/Pages/currenttoc.aspx
[Reviewed earlier]

Journal of Adolescent Health
February 2020 Volume 66, Issue 2, p133-264
https://www.jahonline.org/issue/S1054-139X(19)X0007-5
[New issue; No digest content identified]

Journal of Artificial Intelligence Research
Vol. 67 (2020)
https://www.jair.org/index.php/jair
[New issue; No digest content identified]

Journal of Community Health
Volume 45, Issue 1, February 2020
https://link.springer.com/journal/10900/45/1
[Reviewed earlier]

Journal of Development Economics
Volume 143 March 2020
https://www.sciencedirect.com/journal/journal-of-development-economics/vol/143/suppl/C
[New issue; No digest content identified]

Journal of Empirical Research on Human Research Ethics
Volume 15 Issue 1-2, February-April 2020
http://journals.sagepub.com/toc/jre/current
Special Issue: Ethical Issues in Social Media Research
Ethics Review of Social Media Research
Ethical Considerations in Using Social Media to Engage Research Participants: Perspectives of Australian Researchers and Ethics Committee Members
Stacey Hokke, Naomi J. Hackworth, Shannon K. Bennetts, Jan M. Nicholson, Patrick Keyzer, Jayne Lucke, Lawrie Zion, Sharinne B. Crawford
First Published June 14, 2019; pp. 12–27

Reasoning "Uncharted Territory": Notions of Expertise Within Ethics Review Panels Assessing Research Use of Social Media
Chelsea Sellers, Gabrielle Samuel, Gemma Derrick
First Published December 12, 2019; pp. 28–39

Linking Survey and Twitter Data: Informed Consent, Disclosure, Security, and Archiving
Luke Sloan, Curtis Jessop, Tarek Al Baghal, Matthew Williams
First Published June 21, 2019; pp. 63–76

Journal of Epidemiology & Community Health
February 2020 - Volume 74 - 2
https://jech.bmj.com/content/74/1
[Reviewed earlier]

Journal of Evidence-Based Medicine
Volume 13, Issue 1 Pages: 1-88 February 2020
https://onlinelibrary.wiley.com/toc/17565391/current
ARTICLES
Preliminary prediction of the basic reproduction number of the Wuhan novel coronavirus 2019-nCoV
Tao Zhou et al
Pages: 3-7 First Published: 12 February 2020

REVIEWS
Open Access
Brief introduction of medical database and data mining technology in big data era
Jin Yang et al
Pages: 57-69
First Published: 22 February 2020

Journal of Global Ethics
Volume 15, Issue 3, 2019
http://www.tandfonline.com/toc/rjge20/current
Special Issue: Global Justice and Childhood
[Reviewed earlier]

Journal of Health Care for the Poor and Underserved (JHCPU)
Volume 31, Number 1, February 2020
https://muse.jhu.edu/journal/278
Table of Contents
[Reviewed earlier]

Journal of Immigrant and Minority Health
Volume 22, Issue 1, February 2020
https://link.springer.com/journal/10903/22/1
[Reviewed earlier]

Journal of Immigrant & Refugee Studies

Volume 18, 2020 Issue 1
https://www.tandfonline.com/toc/wimm20/current
[Reviewed earlier]

Journal of Infectious Diseases
Volume 221, Issue 2, 15 January 2020
https://academic.oup.com/jid/issue/221/2
[Reviewed earlier]

Journal of Medical Ethics
March 2020 - Volume 46 - 3
http://jme.bmj.com/content/current
[Reviewed earlier]

Journal of Patient-Centered Research and Reviews
Volume 7, Issue 1 (2020)
https://digitalrepository.aurorahealthcare.org/jpcrr/
[Reviewed earlier]

Journal of Pediatrics
February 2020 Volume 217, p1-224
http://www.jpeds.com/current
[Reviewed earlier]

Journal of Pharmaceutical Policy and Practice
https://joppp.biomedcentral.com/
[Accessed 29 Feb 2020]
[No new digest content identified]

Journal of Public Health Management & Practice
January/February 2020 - Volume 26 - Issue 1
https://journals.lww.com/jphmp/pages/currenttoc.aspx
[Reviewed earlier]

Journal of Public Health Policy
Volume 41, Issue 1, March 2020
https://link.springer.com/journal/41271/41/1
[New issue; No digest content identified]

Journal of Refugee & Global Health
Volume 2, Issue 2 (2019)
https://ir.library.louisville.edu/rgh/
[Reviewed earlier]

Journal of the Royal Society – Interface
01 February 2020 Volume 17 Issue 163
https://royalsocietypublishing.org/toc/rsif/current
[Reviewed earlier]

Journal of Travel Medicine
Volume 27, Issue 1, January 2020
https://academic.oup.com/jtm/issue/27/1
[Reviewed earlier]

Journal of Virology
February 2020; Volume 94, Issue 3
http://jvi.asm.org/content/current
[Reviewed earlier]

The Lancet
Feb 29, 2020 Volume 395 Number 10225 p659-754, e41
https://www.thelancet.com/journals/lancet/issue/current
Editorial
Rare diseases need sustainable options
The Lancet

Comment
Do not violate the International Health Regulations during the COVID-19 outbreak
Roojin Habibi, et al

Articles
Nowcasting and forecasting the potential domestic and international spread of the 2019-nCoV outbreak originating in Wuhan, China: a modelling study
Joseph T Wu, Kathy Leung, Gabriel M Leung

The Lancet Child & Adolescent Health
Feb 2020 Volume 4 Number 2 p91-166, e5
https://www.thelancet.com/journals/lanchi/issue/current
[Reviewed earlier]

Lancet Digital Health
Feb 2020 Volume 2 Number 2 e49-e101
https://www.thelancet.com/journals/landig/issue/current
[Reviewed earlier]

Lancet Global Health
Feb 2020 Volume 8 Number 2 e152-e304
http://www.thelancet.com/journals/langlo/issue/current
[Reviewed earlier]

Lancet Infectious Diseases
Feb 2020 Volume 20 Number 2 p145-260, e26-e62
http://www.thelancet.com/journals/laninf/issue/current
[Reviewed earlier]

Lancet Public Health
Feb 2020 Volume 5 Number 2 e71-e126
https://www.thelancet.com/journals/lanpub/issue/current
[Reviewed earlier]

Lancet Respiratory Medicine
Feb 2020 Volume 8 Number 2 p125-216, e4-e7
http://www.thelancet.com/journals/lanres/issue/current
[Reviewed earlier]

Maternal and Child Health Journal
Volume 24, Issue 2, February 2020
https://link.springer.com/journal/10995/24/2
[Reviewed earlier]

Medical Decision Making (MDM)
Volume 40 Issue 1, January 2020
http://mdm.sagepub.com/content/current
[Reviewed earlier]

The Milbank Quarterly
A Multidisciplinary Journal of Population Health and Health Policy
Volume 97, Issue 4 Pages: 881-1242 December 2019
https://onlinelibrary.wiley.com/toc/14680009/current
[Reviewed earlier]

Nature
Volume 578 Issue 7796, 27 February 2020
http://www.nature.com/nature/current_issue.html
[New issue; No digest content identified]

Nature Biotechnology
Volume 38 Issue 2, February 2020
https://www.nature.com/nbt/volumes/38/issues/1
[Reviewed earlier]

Nature Genetics
Volume 52 Issue 2, February 2020
https://www.nature.com/ng/volumes/52/issues/2
[Reviewed earlier]

Nature Medicine
Volume 26 Issue 2, February 2020
https://www.nature.com/nm/volumes/26/issues/2
[Reviewed earlier]

Nature Reviews Genetics
Volume 21 Issue 2, February 2020
https://www.nature.com/nrg/volumes/21/issues/2
[Reviewed earlier]

Nature Reviews Immunology
Volume 20 Issue 2, February 2020
https://www.nature.com/nri/volumes/20/issues/2
[Reviewed earlier]

New England Journal of Medicine
February 27, 2020 Vol. 382 No. 9
http://www.nejm.org/toc/nejm/medical-journal
Perspective
Influenza in U.S. Detention Centers — The Desperate Need for Immunization
C. Foppiano Palacios, J.J. Openshaw, and M.A. Travassos

Perspective
Transforming Global Health with AI
M.C. Mehta, I.T. Katz, and A.K. Jha
Artificial intelligence could revolutionize health and health care in low- and middle-income countries by addressing the large knowledge and judgment gaps that make care delivery poor. But for AI to fulfill this promise, some key challenges will need to be addressed.

Pediatrics
February 01, 2020; Volume 145,Issue 2
https://pediatrics.aappublications.org/content/145/2
[Reviewed earlier]

Pharmaceutics
Volume 12, Issue 1 (January 2020)
https://www.mdpi.com/1999-4923/12/1
[Reviewed earlier]

PharmacoEconomics
Volume 38, Issue 2, February 2020
https://link.springer.com/journal/40273/38/2
[Reviewed earlier]

PLoS Genetics
https://journals.plos.org/plosgenetics/
(Accessed 29 Feb 2020)
[No new digest content identified]

PLoS Medicine
http://www.plosmedicine.org/
(Accessed 29 Feb 2020)
[No new digest content identified]

PLoS Neglected Tropical Diseases
http://www.plosntds.org/
(Accessed 29 Feb 2020)
[No new digest content identified]

PLoS One
http://www.plosone.org/
[No new digest content identified]

PLoS Pathogens
http://journals.plos.org/plospathogens/
[Accessed 29 Feb 2020]
[No new digest content identified]

PNAS - Proceedings of the National Academy of Sciences of the United States of America
http://www.pnas.org/content/early/
[Accessed 29 Feb 2020]
[No new digest content identified]

Prehospital & Disaster Medicine
Volume 35 - Issue 1 - February 2020
https://www.cambridge.org/core/journals/prehospital-and-disaster-medicine/latest-issue
[Reviewed earlier]

Preventive Medicine
Volume 131 February 2020
https://www.sciencedirect.com/journal/preventive-medicine/vol/131/suppl/C
[Reviewed earlier]

Proceedings of the Royal Society B
12 February 2020 Volume 287 Issue 1920
https://royalsocietypublishing.org/toc/rspb/current
[Reviewed earlier]

Public Health
Volume 179 Pages A1-A2, 1-198 (February 2020)
https://www.sciencedirect.com/journal/public-health/vol/179/suppl/C
Research article Abstract only
Factors associated with Tdap vaccination receipt during pregnancy: a cross-sectional study
D.P. Wales, S. Khan, D. Suresh, A. Ata, B. Morris
Pages 38-44

Public Health Ethics
Volume 12, Issue 3, November 2019
http://phe.oxfordjournals.org/content/current
[Reviewed earlier]

Public Health Reports
Volume 135 Issue 2, March/April 2020
https://journals.sagepub.com/toc/phrg/135/2
[Reviewed earlier]

Qualitative Health Research
Volume 30 Issue 4, March 2020
http://qhr.sagepub.com/content/current
[Reviewed earlier]

Research Ethics
Volume 15 Issue 3-4, July-October 2019
http://journals.sagepub.com/toc/reab/current
[Reviewed earlier]

Reproductive Health
http://www.reproductive-health-journal.com/content
[Accessed 29 Feb 2020]
[No new digest content identified]

Revista Panamericana de Salud Pública/Pan American Journal of Public Health (RPSP/PAJPH)
https://www.paho.org/journal/en
Latest articles
[No new digest content identified]

Risk Analysis
Volume 40, Issue 2 Pages: 215-438 February 2020
https://onlinelibrary.wiley.com/toc/15396924/current
[Reviewed earlier]

Risk Management and Healthcare Policy
https://www.dovepress.com/risk-management-and-healthcare-policy-archive56
[Accessed 29 Feb 2020]
[No new digest content identified]

Risk Analysis
Volume 40, Issue 2 Pages: 215-438 February 2020
https://onlinelibrary.wiley.com/toc/15396924/current
[Reviewed earlier]

Risk Management and Healthcare Policy
https://www.dovepress.com/risk-management-and-healthcare-policy-archive56
[Accessed 29 Feb 2020]
[No new digest content identified]

Science
28 February 2020 Vol 367, Issue 6481
http://www.sciencemag.org/current.dtl
[New issue; No digest content identified]

Science Translational Medicine
26 February 2020 Vol 12, Issue 532
https://stm.sciencemag.org/
[New issue; No digest content identified]

Social Science & Medicine
Volume 246 February 2020
https://www.sciencedirect.com/journal/social-science-and-medicine/vol/246/suppl/C
[Reviewed earlier]

Systematic Reviews
https://systematicreviewsjournal.biomedcentral.com/articles
[Accessed 29 Feb 2020]

Benefits and harms of the human papillomavirus (HPV) vaccines: systematic review with meta-analyses of trial data from clinical study reports
To assess the benefits and harms of the human papillomavirus (HPV) vaccines.
Authors: Lars Jørgensen, Peter C. Gøtzsche and Tom Jefferson
Citation: Systematic Reviews 2020 9:43
Content type: Research
Published on: 28 February 2020

Benefits and harms of the human papillomavirus (HPV) vaccines: comparison of trial data from clinical study reports with corresponding trial register entries and journal publications
No study has looked at differences of pooled estimates—such as meta-analyses—of corresponding study documents of the same intervention. In this study, we compared meta-analyses of human papillomavirus (HPV) va...
Authors: Lars Jørgensen, Peter C. Gøtzsche and Tom Jefferson
Citation: Systematic Reviews 2020 9:42
Content type: Research
Published on: 28 February 2020

What the systematic review of HPV vaccine clinical study reports does, and does not, reveal: commentary on Jørgensen et al.
Authors: Hilda Bastian
Citation: Systematic Reviews 2020 9:41
Content type: Commentary
Published on: 28 February 2020

Travel Medicine and Infectious Diseases
Volume 33 January–February 2020
https://www.sciencedirect.com/journal/travel-medicine-and-infectious-disease/vol/33/suppl/C
[Reviewed earlier]

Tropical Medicine & International Health
Volume 25, Issue 2 Pages: i-iv, 143-275 February 2020
https://onlinelibrary.wiley.com/toc/13653156/current
[Reviewed earlier]

Vaccine
Volume 38, Issue 9 Pages 2115-2272 (24 February 2020)
https://www.sciencedirect.com/journal/vaccine/vol/38/issue/9
Review article Abstract only
Performance of the United States Vaccine Injury Compensation Program (VICP): 1988–2019
Kimberly M. Thompson, Walter A. Orenstein, Alan R. Hinman
Pages 2136-2143

Review article Open access
Finding equipoise: CEPI revises its equitable access policy
Brenda Huneycutt, Nicole Lurie, Sara Rotenberg, Richard Wilder, Richard Hatchett
Pages 2144-2148
Abstract
Launched at Davos in January 2017 with funding from sovereign investors and philanthropic institutions, the Coalition for Epidemic Preparedness Innovations (CEPI) is an innovative partnership between public, private, philanthropic, and civil organisations whose mission is to stimulate, finance and co-ordinate vaccine development against diseases with epidemic potential in cases where market incentives fail. As of December 2019, CEPI has committed to investing up to $706 million in vaccine development. This includes 19 vaccine candidates against its priority pathogens (Lassa fever virus, Middle East respiratory syndrome coronavirus, Nipah virus, Chikungunya, Rift Valley fever) and three vaccine platforms to develop vaccines against Disease X, a novel or unanticipated pathogen.
As an entity largely supported by public funds, ensuring equitable access to vaccines whose development it supports in low- and middle-income countries is CEPI's primary focus. CEPI developed an initial equitable access policy shortly after its formation, with key stakeholders expressing strong views about its content and prescriptive nature. The CEPI board instructed that it be revisited after a year. This paper describes the process of revising the policy, and how key issues were resolved. CEPI will continue to take an iterative, rather than prescriptive, approach to its policy—one that reflects the needs of multiple stakeholders and ensures it can meet its equitable access goals.

Research article Abstract only
Men having sex with men and the HPV vaccine in France: A low vaccine coverage that may be due to its infrequent proposal by physicians
Benoit Petit, Olivier Epaulard
Pages 2160-2165

Research article Abstract only
Vaccine hesitancy towards childhood immunisation amongst urban pregnant mothers in Malaysia
Aida Kalok, Sweet Yi Esther Loh, Kah Teik Chew, Nor Haslinda Abdul Aziz, ... Zaleha Abdullah Mahdy
Pages 2183-2189

Research article Abstract only
Survey of influenza vaccine knowledge, attitudes, and beliefs among pregnant women in the 2016–17 season
Jennifer P. King, Kayla E. Hanson, James G. Donahue, Jason M. Glanz, ... Edward A. Belongia
Pages 2202-2208

Research article Abstract only
The effect of performance-based financing on child vaccinations in northern Nigeria
Ryoko Sato, Abdullahi Belel
Pages 2209-2215

Research article Abstract only
An investment case for maternal and neonatal tetanus elimination
Sarah K. Laing, Ulla Griffiths, Azhar Abid Raza, Flint Zulu, ... Sachiko Ozawa
Pages 2241-2249

Vaccines — Open Access Journal
http://www.mdpi.com/journal/vaccines
(Accessed 29 Feb 2020)
Open Access Article
Will We Have a Cohort of Healthcare Workers Full Vaccinated against Measles, Mumps, and Rubella?
by Andrea Trevisan , Chiara Bertoncello , Elisa Artuso , Clara Frasson , Laura Lago , Davide De Nuzzo , Annamaria Nicolli and Stefano Maso
Vaccines 2020, 8(1), 104; https://doi.org/10.3390/vaccines8010104 - 27 Feb 2020
Abstract
Healthcare workers are a population exposed to several infectious diseases, and an immunization programme is essential for the maintenance of good vaccination coverage to protect workers and patients. A population of 10,653 students attending degree courses at Padua Medical School (medicine and surgery, dentistry and health professions) was screened for vaccination coverage and antibody titres against rubella, mumps, and measles. The students were subdivided into five age classes according to their date of birth: those born before 1980, between 1980 and 1985, between 1986 and 1990, between 1991 and 1995, and after 1995. Vaccination coverage was very low in students born before 1980, but the rate of positive antibody titre was high due to infection in infancy. Increasing date of birth showed increased vaccination coverage. In contrast, immune coverage was high for rubella (more than 90%) but not for mumps and measles (approximately 80%). An "anomaly" was observed for mumps and measles in the cohort born between 1991 and 1995, probably due to the trivalent vaccine formulation. Students born after 1990 showed vaccination coverage that exceeded 90%. It is therefore very likely that we will have a future generation of healthcare workers with optimal vaccination coverage.

Value in Health
February 2020 Volume 23, Issue 2, p139-276
https://www.valueinhealthjournal.com/issue/S1098-3015(20)X0003-9
Commentary
Value-Based Pharmaceutical Contracts: Value for Whom?
Joseph T. Kannarkat, Chester B. Good, Natasha Parekh
p154–156
Published online: December 5, 2019
Highlights
:: The nature of who benefits from value-based pharmaceutical contracts (VBPCs) is unclear.
:: VBPCs are reimbursement agreements between healthcare payers and pharmaceutical manufacturers that tie price, amount, or nature of drug reimbursements to value-based outcomes.
:: We discuss how VBPCs compare with value-based payer–provider arrangements in terms of performance-based reimbursements and alignment of incentives.
:: We examine how VBPCs can affect costs, clinical outcomes, and access to medications.
:: We recommend a patient-outcome centered approach for developing VBPCs and tying VBPCs to overarching drug cost reduction strategies.
Abstract
Value-based pharmaceutical contracts (VBPCs) are performance-based reimbursement agreements between

healthcare payers and pharmaceutical manufacturers in which the price, amount, or nature of reimbursement is tied to value-based outcomes. VBPCs are often complex, and the nature of who benefits and in what ways can be unclear. We discuss how VBPCs compare with value-based payer–provider arrangements in terms of performance-based reimbursements and alignment of incentives. In addition, we examine how VBPCs can affect costs, clinical outcomes, and access to medications. Because these contracts are unlikely to reduce costs in isolation, we recommend taking a patient-centered approach when developing VBPCs and tying VBPCs to more overarching payer drug cost reduction strategies.

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From Google Scholar & other sources: Selected Journal Articles, Newsletters, Dissertations, Theses, Commentary

No new digest content identified.

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Media/Policy Watch

This watch section is intended to alert readers to substantive news, analysis and opinion from the general media and selected think tanks and similar organizations on vaccines, immunization, global public health and related themes. *Media Watch* is not intended to be exhaustive, but indicative of themes and issues CVEP is actively tracking. This section will grow from an initial base of newspapers, magazines and blog sources, and is segregated from *Journal Watch* above which scans the peer-reviewed journal ecology.

We acknowledge the Western/Northern bias in this initial selection of titles and invite suggestions for expanded coverage. We are conservative in our outlook in adding news sources which largely report on primary content we are already covering above. Many electronic media sources have tiered, fee-based subscription models for access. We will provide full-text where content is published without restriction, but most publications require registration and some subscription level.

The Atlantic
http://www.theatlantic.com/magazine/
Accessed 29 Feb 2020
Ideas
Democracies Are Better at Fighting Outbreaks
China's harsh response to the coronavirus has influential admirers, but Western nations recognize that public health fundamentally depends on public trust.
February 24, 2020
Ariana A. Berengaut
Penn Biden Center's director of programs, partnerships, and strategic planning

Health
You're Likely to Get the Coronavirus
Most cases are not life-threatening, which is also what makes the virus a historic challenge to contain.
James Hamblin
February 24, 2020

BBC
http://www.bbc.co.uk/
Accessed 29 Feb 2020
Health
Coronavirus: Where are we with a vaccine?
By James Gallagher Health and science correspondent
27 February 2020

The Economist
http://www.economist.com/
Accessed 29 Feb 2020
[No new, unique, relevant content]

Financial Times
http://www.ft.com/home/uk
Accessed 29 Feb 2020
Lunch with the FT
Ebola co-discoverer Peter Piot on how to respond to the coronavirus
February 28 2020

Forbes
http://www.forbes.com/
Feb 28, 2020
Bill Gates: Governments Should Invest Billions To Battle 'Once-In-A-Century' Pathogen
"That's the scale of investment required to solve the problem."
By Lisette Voytko Forbes Staff

Foreign Affairs
http://www.foreignaffairs.com/
Accessed 29 Feb 2020
[No new, unique, relevant content]

Foreign Policy
http://foreignpolicy.com/
Accessed 29 Feb 2020
How Hackers and Spies Could Sabotage the Coronavirus Fight
Intelligence services have a long history of manipulating information on health issues, and an epidemic is especially tempting for interference. Why aren't we better prepared?

Argument | Bruce Schneier, Margaret Bourdeaux
The West Is About to Fail the Coronavirus Test
China made huge mistakes managing the outbreak. The rest of the world may not do any better.

Argument | Melissa Chan, Ethan Guillén
Virus Travel Bans Are Inevitable But Ineffective
Experts can't stop restrictions, but they can mitigate them.
Argument | Mara Pillinger

The Guardian
http://www.guardiannews.com/
Accessed 29 Feb 2020
[No new, unique, relevant content]

New Yorker
http://www.newyorker.com/
Accessed 29 Feb 2020
[No new, unique, relevant content]

New York Times
http://www.nytimes.com/
Accessed 29 Feb 2020
Health
Who's on the U.S. Coronavirus Task Force
Several of the nation's top health officials are among those sitting on an advisory panel formed by President Trump.
29 Feb 2020

Sunday Review
We've Ignored the Warnings About Global Pandemics
Now, after many fire drills, the world may be facing a real fire.
By The Editorial Board

Business
Japan's Leader Announces $2.5B Package to Help Fight Virus
Japanese Prime Minister Shinzo Abe on Saturday announced a 270 billion yen ($2.5 billion) emergency economic package to help fight the coronavirus as he sought the public's support for his government's fight against the outbreak.
By The Associated Press

Washington Post
https://www.washingtonpost.com/
Accessed 29 Feb 2020
Azar Says U.S.-Funded Drug, Vaccine Must Be Accessible (Feb 29, 202012:30 p.m. NY)
Any drug or vaccine developed by companies with help from the government must be financially accessible for people, Health and Human Services Secretary Alex Azar told Congress Thursday.
"I have directed my teams that if we do any joint venture with a private enterprise that we're cofunding the research and development program that we would ensure there's access to the fruits of that, whether vaccine or therapeutics," Azar said at a congressional hearing. The U.S. government is collaborating with pharmaceutical and biotechnology firms to develop vaccines and drugs for the coronavirus.
Azar's comments are a shift from remarks Wednesday, when he said, "we would want to ensure that we work to

make it affordable, but we can't control that price, because we need the private sector to invest. Price controls won't get us there."…

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Think Tanks et al

Brookings
http://www.brookings.edu/
Accessed 29 Feb 2020
[No new relevant content]

Center for Global Development [to 29 Feb 2020]
http://www.cgdev.org/page/press-center
Selected Publications, News and Events
February 28, 2020
The Impact of Coronavirus on China's SMEs: Findings from the Enterprise Survey for Innovation and Entrepreneurship in China
Since the coronavirus outbreak began in January, Chinese business activity has been severely slowed, affecting China's position in the global industrial supply chain. The Enterprise Survey for Innovation and Entrepreneurship in China (ESIEC) launched a survey on the "condition of micro, small and medium-sized enterprises (SMEs) amidst the coronavirus outbreak."
Rouchen Dai , Junpeng Hu and Xiaobo Zhang

February 28, 2020
Reconciling SME Production in China with Coronavirus Control
With the steady decline in new confirmed cases of coronavirus in China beyond Hubei Province, public scrutiny has increasingly shifted to the economy affected by the outbreak, particularly the impact on the plethora of small and medium enterprises (SMEs). An earlier CGD note explored the impact of coronavirus on SMEs using data from the Enterprise Survey for Innovation and Entrepreneurship in China (ESIEC) and follow-up interviews. In this accompanying note, we consider how SMEs can resume production without compromising epidemic control.
Xiaobo Zhang and Ruixin Wang

February 26, 2020
China's "Counterpart Assistance" Approach to Coronavirus: Lessons from the Wenchuan Earthquake Response
In early 2020, a new type of coronavirus epidemic (COVID-19) emerged suddenly and spread steadily from China's Wuhan City, Hubei Province, disrupting China's social order. The epicenter of the epidemic, Hubei Province lacked medical personnel and epidemic prevention supplies; assistance was urgently needed. This note identifies the Chinese government's "counterpart aid" strategy in response to the epidemic and explores the strategy's utility, drawing on earlier experiences with disaster response.
Xiaobo Zhang and Lihe Xu

CSIS
https://www.csis.org/
Accessed 29 Feb 2020
Podcast Episode
COVID-19: New Reality
February 26, 2020 | H. Andrew Schwartz, J. Stephen Morrison, Jude Blanchette, Stephanie Segal
In this episode, Andrew invites CSIS's Steve Morrison, Jude Blanchette, and Stephanie Segal to discuss how the coronavirus outbreak, also known as COVID-19, is directly affecting the global...

Transcript
COVID-19: New Reality
February 27, 2020

Report
Sustaining U.S. Support for Gavi: A Critical Global Health Security and Development Partner
February 24, 2020 | Katherine Bliss As Gavi, the Vaccine Alliance, seeks funding to support its ambitious new 2021-2025 work plan, the United States should take steps to reinforce its longstanding support of the Alliance and help ensure continued progress on critical health security and development goals.

Council on Foreign Relations
http://www.cfr.org/
Accessed 29 Feb 2020
February 27, 2020

Coronavirus
What You Need to Know About the Coronavirus Outbreak
A new coronavirus that originated in China has sparked fears of a potential pandemic, as health experts seek to answer questions about how it spreads.
Backgrounder by Claire Felter and Lindsay Maizland

Kaiser Family Foundation
https://www.kff.org/search/?post_type=press-release
Accessed 29 Feb 2020
[No new relevant content]

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Support for this service is provided by the Bill & Melinda Gates Foundation; PATH, and industry resource members Janssen/J&J, Pfizer, Sanofi Pasteur U.S.,Takeda, Moderna Therapeutics (list in formation).

Support is also provided by a growing list of individuals who use this membership service to support their roles in public health, clinical practice, government, NGOs and other international institutions, academia and research organizations, and industry.

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From: DOH-LOFR (DOH)

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	Troy (DOHi); Hilton, David (DOHi); Ibach, Ryan (DOHi); Johnson, Nathan (DOHi); Knutson, Kasey (DOHi); Lantz, Melissa (DOHi); Levy, Alison; Maier, Nikki (DOHi); McKenzie, Lisa (DOHi); Michael, Stephanie (DOHi); Miron, Cindy (DOHi); Moen, Anne (DOHi); Mund, Ed (DOHi); Parker, Carrie (DOHi); Potts, Karen (DOHi); Poyner, Sue (DOHi); Probasco, Brianne (DOHi); Raaka, Mark (DOHi); Schanz, Matt (DOHi); Schmitz, Lou (DOHi); Shopbell, Stephanie (DOHi); Skidmore, Chris (DOHi); Solari, Nicholas; Stone, Ben (DOHi); Thomas, Heather (DOHi); Torres, Jennifer (DOHi); Trotter, Dianna S (DOH); Turner, Suzanne (DOHi); Turner, Tiffany (DOHi); Vanmeter, Joyous (DOHi); Vavricka, Zach (DOHi)
Subject:	Washington State Department of Health Non-Pharmaceutical Intervention (NPI) Guidance version 1.0
Date:	Thursday, February 27, 2020 2:00:50 PM
Attachments:	image001.png NPI Guidance - Intervention Overview and Implementation v1.0.pdf

Good afternoon all,

The Washington State Department of Health Non-Pharmaceutical Intervention (NPI) Guidance lists 13 Interventions to mitigate the spread of a contagious disease, such as a novel virus. It is part of the state's Communicable Disease and Pandemic Response plan and includes personal, community, and environmental methods of control. Its purpose is to help public health officials, emergency management, and partners choose which mitigation strategies to implement to limit and prevent the spread of novel respiratory diseases of concern.

The interventions included are:

1. Increase handwashing and use of alcohol-based sanitizer
2. Respiratory hygiene and cough etiquette
3. Keep distance from others (> 6 feet)
4. Frequently clean and disinfect surfaces
5. Remain home during a respiratory illness
6. Voluntary isolation of sick persons
7. Voluntary quarantine of contacts of sick persons
8. Involuntary isolation of sick persons
9. Involuntary quarantine of contacts of sick persons
10. Order cancellation of major public and large private gatherings
11. Order closure of schools, child care facilities, workplaces, and public buildings
12. Prevent non-emergency travel outside of the home
13. Establish cordon sanitaire

You may download the full guidance document here: https://www.doh.wa.gov/Portals/1/Documents/1600/NPIGuidanceandImplementation.pdf. Please share with any pertinent partners that you feel would be appropriate. That said, please consider this document close hold.

We encourage you to take time to refresh yourself and your partners on your current mitigation and response plans related to pandemic planning or communicable disease efforts. The ultimate goal is to reduce health impacts on our communities and create a more resilient public health system.

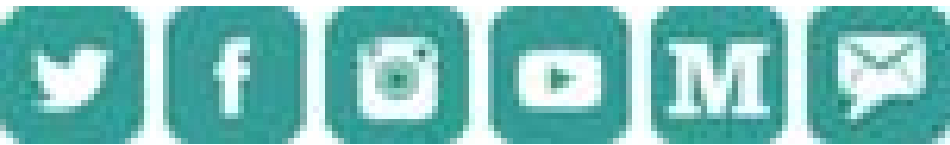
Please consider the last four interventions, 10-13, and the steps necessary that your

organization/jurisdiction would need to take to implement them. We want you to identify the partners who would be involved in carrying out of these interventions and start discussing your plans with them. DOH and other state agencies are working on more specific guidance and will be providing guidance as it becomes available.

This guide was developed from the Communicable Disease and Pandemic Response Plan, Risk Matrix and Recommendations Table of Annex 4. (Document link — WA Emergency Management Division). Additionally, Center for Disease Control & Prevention (CDC) 2017 guidelines provide evidence-based recommendations on the use of NPIs in mitigating the effects of pandemic influenza. While pandemic influenza is NPI mitigation strategies are not identical to likely recommended strategies for COVID-19, these evidence-based recommendations may help in informing your agency's own strategies and implementations.

COVID-19 Webinar – February 28, 2020
Friday, February 28, 2020 at 10:00 AM DOH will provide an update on where the epidemic currently stands and what policy and planning considerations around non-pharmaceutical interventions local elected officials, emergency managers, and public health jurisdictions should engage in.
Link **https://meet.lync.com/mil.wa.gov/chris.utzinger/1VRN9V41**. For audio, you can dial **1-877-820-7831 with access code 782831#.**

Troy Parks – 360-236-3610
Liaison Officer – Incident Management Team (IMT)
Washington State Department of Health (WSDOH)
https://www.doh.wa.gov/Emergencies/Coronavirus
Viruses don't discriminate and neither will we.



Washington State Department of Health

Non-Pharmaceutical Interventions (NPI) Implementation Guide

NPIs are mitigation strategies to limit and prevent exposure to disease. These include personal protective steps for everyday use, community containment, and environmental measures to control viral disease outbreaks and pandemics.

This guide will help you decide what NPIs to consider implementing in an outbreak. Public health officials will need to determine the appropriate set of interventions to implement in combination for a given incident.

This guide is intended for an Incident Management Team, the Department of Health, multi-agency coordination policy groups, and local health officers.

FEBRUARY 2020

Contents

NPIs

This guide lists 13 interventions to mitigate the spread of a contagious disease, such as a novel virus. It is part of the state's Communicable Disease and Pandemic Response plan and includes personal, community, and environmental methods of control.

Its purpose is to help public health officials and partners choose which mitigation strategies to implement to limit and prevent the spread of novel respiratory diseases of concern.

The interventions included are:

1. Increase handwashing and use of alcohol-based sanitizer
2. Respiratory hygiene and cough etiquette
3. Keep distance from others (> 6 feet)
4. Frequently clean and disinfect surfaces
5. Remain home during a respiratory illness
6. Voluntary isolation of sick persons
7. Voluntary quarantine of contacts of sick persons
8. Involuntary isolation of sick persons
9. Involuntary quarantine of contacts of sick persons
10. Recommend or order cancellation of major public and large private gatherings
11. Recommend or order closure of schools, child care facilities, workplaces, and public buildings
12. Prevent non-emergency travel outside of the home
13. Establish cordon sanitaire

Table 1 lists expected results on the spread of disease if each intervention were to be used, and gives examples of how each of the interventions can be done.

Transmissibility, Severity

Each intervention lists a scaled measure of transmissibility and a scaled measure of clinical severity as identified by the CDC.

- **Transmissibility** is a scale of 1 to 5, with 5 being the most contagious
- **Clinical severity** is a scale of 1 to 7, with 7 being the most severe in terms of number of cases, number of hospitalizations, and fatality ratio.

The complexity of the interventions increases as transmissibility and clinical severity increase. **Table 1** connects these scales to each intervention and **Table 2** defines them.

ESF-8 Supporting Agencies

These Emergency Support Function 8 (ESF-8) supporting agencies contribute to public health response efforts, including community mitigation strategies, in collaboration with the Department of Health as the lead agency for ESF-8.

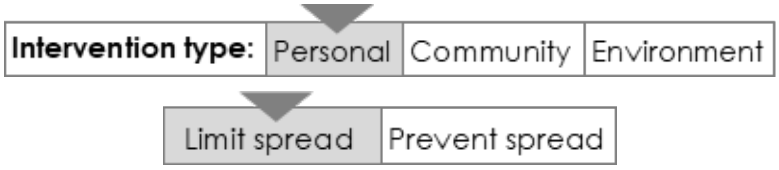
- Department of Agriculture
- Department of Ecology
- Department of Enterprise Services
- Department of Fish and Wildlife
- Department of Labor and Industries
- Department of Licensing
- Department of Social and Health Services
- Department of Transportation
- Washington Military Department
- Washington State Health Care Authority
- Washington State Patrol
- Washington State Pharmacy Association
- Washington State Office of the Attorney General
- Washington State Hospital Association
- Washington State Pharmacy Association
- Washington State Disaster Medical Advisory Committee
- Northwest Healthcare Response Network
- Local Health Officers
- Local Emergency Management Agencies
- Tribal Governments

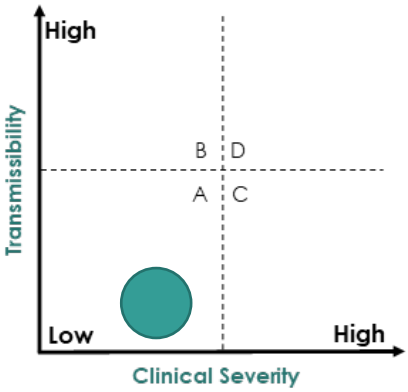
This guide was developed from the Communicable Disease and Pandemic Response Plan, Risk Matrix and Recommendations Table of Annex 4. (Document link — WA Emergency Management Division)

Intervention 1: Increase Handwashing and Use of Alcohol-Based Hand Sanitizer

Reduce probability of direct and indirect transmission of the disease by handwashing regularly with soap and water or using hand sanitizer.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Hand hygiene reduces the transmission of viruses that occurs when one person touches another with a contaminated hand, or when a person touches an object or surface that's been contaminated and then touches their own nose or face with that hand before washing it.

Success Factors: Success depends on public education effectiveness, public compliance, and access to handwashing facilities and sanitizing stations.

Possible Drawbacks: None anticipated, although there is a potential concern about the supply chain for hand sanitizer and soap.

Possible Benefits: Quick and easy to implement; effective at reducing illness due to direct/indirect contact.

Settings and Use

- Personal non-pharmaceutical interventions (NPIs) are everyday preventive actions that can help keep someone from getting and spreading respiratory illnesses transmitted by droplet routes.
- Use at homes, child care facilities, schools, workplaces, houses of worship, public transit, and other settings where people regularly gather.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers

State

Key Decision Makers: The Secretary of Health has the same authority as a local health officer (LHO) to control and prevent the spread of disease (under RCW 43.70.130), and may exercise the authority in an emergency, when LHOs agree, or when LHOs fail or are unable to act, per RCW 43.70.130(7). This includes the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Determine financial responsibility for providing handwashing stations and/or hand sanitizer.
- Research/discuss resource procurement needs:
    - Local/state/national partners
    - Private/public partners
- Develop communication strategies and communication plans.
- Engage community partnerships to promote message.

Implementation Methods

- **Create an inclusive public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.
    - Communicate on multiple platforms appropriate to the affected communities.
    - Connect with community leaders or representatives for advice and buy-in.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Provide consistent messaging throughout the state via media outreach.
    - Encourage workplaces to make handwashing a priority among employees.

- **Create and distribute accessible, public messaging**
    - Display culturally appropriate messaging in public places.
        - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.

- **Place hand-washing or hand sanitizer stations in accessible areas**
    - Deploy disinfectant stations in the following or similar locations: Bus stations, transit centers, transportation hubs, health care facilities, schools, shopping centers, entertainment venues, workplaces
        - Prioritize areas of known exposure or at increased risk of exposure.

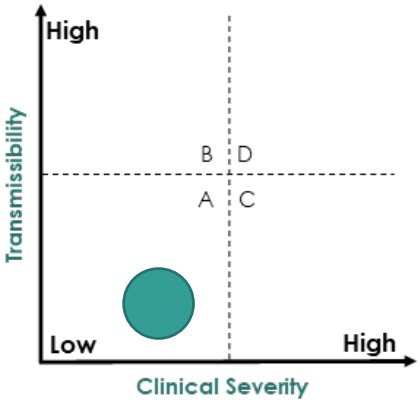
Intervention 2: Respiratory Hygiene/Cough Etiquette

Reduce probability of droplet transmission of the disease by reducing the range of respiratory droplets and aerosols from coughs, sneezes, and other sources.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D

Intervention type:	Personal	Community	Environment

Limit spread	Prevent spread



Rationale for Use as Public Health Strategy

Respiratory etiquette is widely supported in literature and by studies, and is recommended by experts as a way to control the spread of disease. Droplets from those who do not cover their coughs or sneezes can travel up to six feet. Studies of influenza transmission and practical experience in controlling influenza outbreaks reinforce that respiratory hygiene is an important factor in infection control.

Success Factors: Success depends on public education effectiveness and public compliance.

Possible Drawbacks: None anticipated. There could be potential concerns about supply chain for tissues/alcohol-based hand sanitizer.

Possible Benefits: Quick and easy to implement; effective at reducing illness due to droplet transmission.

Settings and Use

- Personal non-pharmaceutical interventions (NPIs) such as covering a cough are everyday preventive actions that can help keep persons from getting and spreading respiratory illnesses transmitted by droplets.
- Use at homes, child care facilities, schools, workplaces, houses of worship, public transit, and other settings where people regularly gather.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers

State

Key Decision Makers: The Secretary of Health also has the same authority as local health officers (LHO) to control and prevent the spread of disease (under RCW 43.70.130), and may exercise the authority in an emergency or when LHO(s) agree or fail or are unable to act, per RCW 43.70.130(7). This includes the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Determine financial responsibility for providing tissues, handwashing stations, and/or hand sanitizer.
- Research/discuss resource procurement needs:
    - Local/state/national partners
    - Private/public partners
- Develop communication strategies and communication plan.
- Engage community partnerships to promote key messages.

Implementation Methods

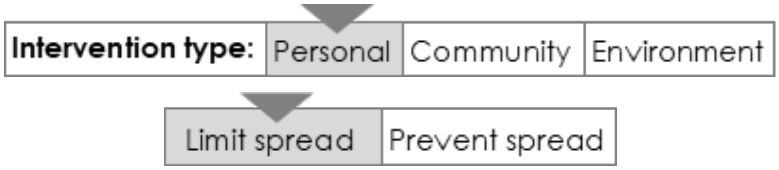
- **Create an inclusive public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.

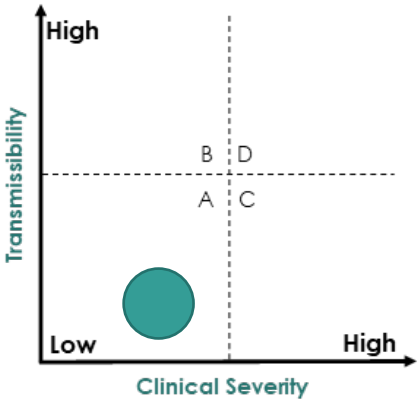
    - Communicate on multiple platforms appropriate to the affected communities
    - Connect with community leaders or representatives for advice and buy-in.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Provide consistent messaging throughout the state via media outreach.
- **Create and distribute accessible, public messaging**
    - Display culturally appropriate messaging in public places.
        - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
        - Flyers should be translated into locally appropriate languages.
- **Provide respiratory hygiene stations in accessible areas.**
    - Provide tissues and waste receptacle at every public hand sanitizer station in accessible areas.
    - Consider bus stations, transit centers, transportation hubs, health care facilities, schools, shopping centers, entertainment venues, etc.
        - Prioritize areas of known exposure or at increased risk of exposure.

Intervention 3: Keep distance from others (> 6 feet)

Reduce probability of direct and droplet transmission by reducing the number of interpersonal contacts.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Keeping distance from others is the most basic form of social distancing that reduce opportunities for person-to-person virus transmission and can help delay and slow the exponential growth of disease spread. It's a common-sense approach to limit disease spread by limiting contact and possible exposures. Droplets from those who do not cover their coughs or sneezes can travel up to six feet. Keeping distance from others if you are sick or from others who may be sick is limits possible spread.

Other more restrictive forms of social distancing are discussed in later interventions and include closure of buildings, isolation and quarantine. The optimal strategy may be to implement several social distancing measures simultaneously where groups of people gather.

Success Factors: Success depends on public education effectiveness and public compliance.

Possible Drawbacks: Certain cultural and religious groups may be unwilling or unable to comply due to conflict with cultural/religious norms or practices. Persons may feel anxious, worried, or fearsome due to being socially distant from others.

Possible Benefits: Quick and easy to implement; effective at reducing illness due to droplet transmission.

Settings and Use

- Personal NPIs such as keeping distance from others who may be sick are everyday preventive actions that can help keep persons from getting and spreading respiratory illnesses transmitted by droplets. Diseases are transmitted by direct contact, indirect contact, droplet, and/or airborne routes. Ill persons can spread illness everywhere they go and surfaces they touch.
- Use at homes, child care facilities, schools, workplaces, houses of worship, public transit, and other settings where people regularly gather.
- Examples that reduce in-person contact include: telecommuting instead of meeting in-person, staggering work hours, spacing workers further apart at the worksite, limiting non-essential travel, and avoiding close contact with people who are sick.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers

State

Key Decision Makers: The Secretary of Health also has the same authority as local health officers (LHO) to control and prevent the spread of disease (under RCW 43.70.130), and may exercise the authority in an emergency or when LHO(s) agree or fail or are unable to act, per RCW 43.70.130(7). This includes the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Implementation Methods

- **Create an inclusive public messaging campaign**
  - Work with communications team to create messages that:
    - Are culturally competent and at an appropriate reading level.
    - Are translated into the most spoken languages in the affected area.
    - Are relevant to the changing nature of the incident/outbreak.
  - Communicate on multiple platforms appropriate to the affected communities
  - Connect with community leaders or representatives for advice and buy-in.
  - Provide messages to LHJs and other partners to share with their constituents.
  - Provide consistent messaging throughout the state via media outreach.
- **Create and distribute accessible, public messaging**
  - Display culturally appropriate messaging in public places.
    - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
    - Connect with community leaders or representatives for advice.
    - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
    - Flyers should be translated into locally appropriate languages.

Decisional Objectives/Key Decision Points

- Communication strategies and communication plan
    - Outreach to major employers
    - Community and faith-based partners
    - Schools, child care facilities, and other settings where people regularly gather
- Social distancing on public transit
- Social distancing for ill persons or the public at large

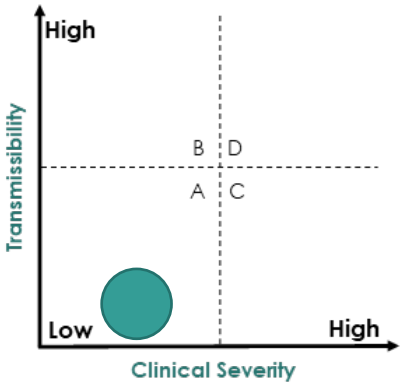
Intervention 4: Frequently Clean and Disinfect Personal Surfaces

Reduce probability of indirect transmission of the disease by disinfecting fomites, or objects that can carry infection. This includes doorknobs, phones, keyboards, etc.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D

Intervention type:	Personal	Community	Environment

Limit spread	Prevent spread



Rationale for Use as Public Health Strategy

Contact transmission (i.e., hand transfer of virus from contaminated objects to the eyes, nose, or mouth) is a recognized route of virus spread. The routine use of disinfection measures that eliminate viruses from contaminated surfaces might reduce the spread of viruses.

Success Factors: Success depends on public education effectiveness, public compliance, and access to appropriate disinfectants at home.

Possible Drawbacks: Lack of available cleaning supplies.

Possible Benefits: Environmental disinfection is effective at reducing illness due to indirect contacts (fomites).

Settings and Use

- Environmental NPIs include routine disinfection of surfaces that helps to eliminate viruses from frequently touched surfaces and objects, such as phones, toys, keyboards, desks, and doorknobs.
- Disinfect homes, child care facilities, schools, workplaces, houses of worship, other settings where people regularly gather, and all frequently touched surfaces with a disinfectant labeled to kill viruses and bacteria.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers

State

Key Decision Makers: The Secretary of Health also has the same authority as local health officers (LHO) to control and prevent the spread of disease (under RCW 43.70.130), and may exercise the authority in an emergency or when LHO(s) agree or fail or are unable to act, per RCW 43.70.130(7). This includes the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Determine communication strategies and communication plan.
  - Outreach to major employers
  - Community and faith-based partners
- Research/discuss resource procurement needs, including fiscal responsibility:
  - Local/state/national partners
  - Private/public partners
- Engage business and community partnerships to implement and promote messages.

Implementation Methods

- **Create an inclusive public messaging campaign**
  - Work with communications team to create messages that:
    - Are culturally competent and at an appropriate reading level.
    - Are translated into the most spoken languages in the affected area.
    - Are relevant to the changing nature of the incident/outbreak.
  - Communicate on multiple platforms appropriate to the affected communities
  - Connect with community leaders or representatives for advice and buy-in.
  - Provide messages to LHJs and other partners to share with their constituents.
- **Create and distribute accessible, public messaging**
  - Display culturally appropriate messaging in public places.
    - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.

        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
- **Distribute disinfectant in accessible locations**
    - Deploy disinfectant stations in the following locations: Bus stations, transit centers, transportation hubs, health care facilities, schools, shopping centers, grocery stores, entertainment venues, and other areas where community members gather.
        - Prioritize areas of known exposure or increased risk of exposure.

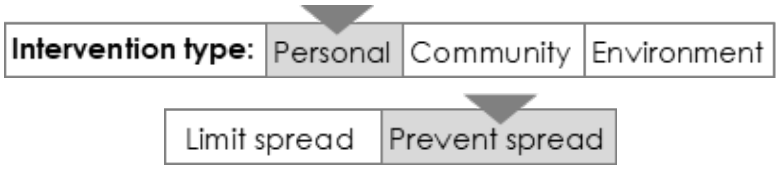
Decisional Objectives/Key Decision Points

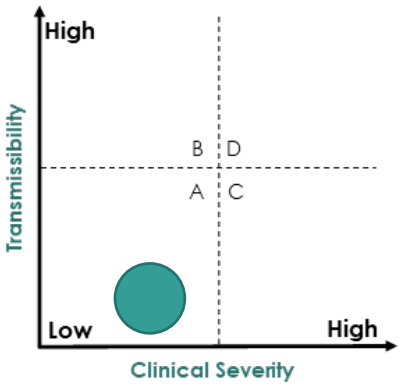
- Determine communication strategies and communication plan.
    - Outreach to major employers
    - Community and faith-based partners
- Research/discuss resource procurement needs, including fiscal responsibility:
    - Local/state/national partners
    - Private/public partners
- Engage business and community partnerships to implement and promote messages.

Intervention 5: Remain Home When Sick with Respiratory Illness

Reduce probability of transmission by preventing contacts between well and sick people.

Transmissibility (1-5)	1
Clinical severity (1-7)	1-4
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Staying home while sick will prevent spreading illness to others in your community. You can also create social distance at home and prevent spreading the illness to others in your household by staying in a specific room and away from your household members as much as possible and using a separate bathroom (if available).

Success Factors: Success depends on the individual's willingness and ability to stay home from work/school/events including access to paid sick leave.

Possible Drawbacks: Many members of the public will be reluctant to stay home due to risk of lost wages and limited or no access to paid sick leave.

Possible Benefits: This is a form of voluntary isolation which is extremely effective in reducing the spread of illness if ill persons comply consistently.

Settings and Use

- Diseases are transmitted by direct contact, indirect contact, droplet, and/or airborne routes. Ill persons can spread illness everywhere they go and surfaces they touch.
- This NPI is used at home to stop spread of disease in public places. It can also be used by employers to request sick employees not come to work.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers

State

Key Decision Makers: The Secretary of Health also has the same authority as local health officers (LHO) to control and prevent the spread of disease (under RCW 43.70.130), and may exercise the authority in an emergency or when LHO(s) agree or fail or are unable to act, per RCW 43.70.130(7). This includes the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Decisional Objectives/Key Decision Points

- Communication strategies and communication plan.
    - Communicate with major employers.
    - Perform outreach to community and faith-based partners.
- Reference available guidance on duration of illness.
- Evaluate economic impact of ill persons without paid sick leave.

Implementation Methods

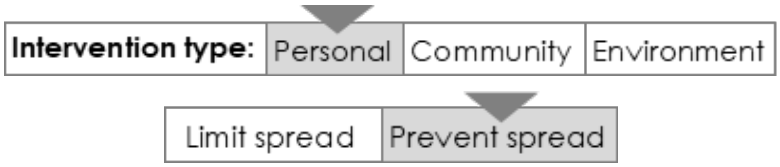
- **Create an inclusive public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.
    - Communicate on multiple platforms appropriate to the affected communities
    - Connect with community leaders or representatives for advice and buy-in.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Provide consistent messaging throughout the state via media outreach.
- **Create and distribute accessible, public messaging**
    - Display culturally appropriate messaging in public places.
        - Consider transit centers, health care facilities, schools, shopping centers, entertainment arenas, fitness centers, houses of worship, or other places as appropriate to the communities affected by the outbreak.
        - Connect with community leaders or representatives for advice.
        - Publications should be culturally competent, translated as needed, and at an appropriate reading level, and should include pictures/illustrations.
    - Co-locate messaging or publications with sanitizer stations and tissues.
- **Work with employers**
    - Have employers review and communicate their sick leave policies, flexible leave policies, and alternate work schedules with employees to encourage sick employees to stay home and prevent the spread of illness at work.
    - Use current relationships with employers to ask employees to stay home if they are ill.

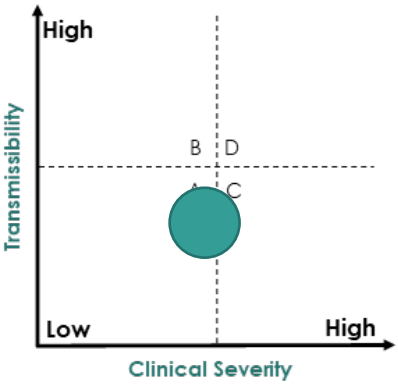
- Suggest allowing employees to work from home. If this is already an option, consider working with HR to be more flexible and inclusive.
- Consider an emergency/temporary change in sick leave policy; allowing an employee to use sick leave proactively and earn it back retroactively.
    - This can decrease the hesitancy on the employees' part to stay home and increase participation in voluntary quarantine.

Intervention 6: Voluntary Isolation of Sick Persons

Reduce probability of transmission by preventing contact between well and sick people.

Transmissibility (1-5)	2
Clinical severity (1-7)	2-5
Recommend implementing at	A, B, C, D





Rationale for Use as Public Health Strategy

Personal non-pharmaceutical interventions are everyday preventive actions that can help keep persons from getting and spreading respiratory illnesses transmitted by droplets. Voluntary isolation is a form of social distancing and prevents a sick person from infecting other people outside of their isolation location. Historically, isolation measures can help prevent the spread of infectious diseases by stopping the person-to-person spread of virus via contaminated droplets generated by coughs and sneezes, and have been shown to delay the peak of an influenza pandemic.

Success Factors: Effective education and ability to comply with request. Material routine support and services (e.g. laundry, food) and working with the employer may help compliance.

Possible Drawbacks: Non-compliance with voluntary isolation increases risk of disease transmission; isolation is difficult to enforce.

Possible Benefits: Isolation is extremely effective in consistently reducing the spread of illness. Voluntary isolation is “less restrictive” and more acceptable to the public.

Settings and Use

- Voluntary isolation of a sick person involves remaining home, at a health care facility, or at another designated isolation facility.
- Isolation is used for persons infected with a contagious disease to separate them from people who are not sick.
- For isolation and quarantine measures, state law requires making reasonable efforts to obtain voluntary compliance unless doing so would create a risk of serious harm (WAC 246-100-040(1)(a)). It is good public health policy, and it's also legally required.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers:

Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Local health officers (and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7)) have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine

State

In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease and issue isolation and quarantine orders. The Secretary also has authority to investigate disease outbreaks and advise local health officers on measures to be taken in response.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)
- WAC 246-101-105 – Duties of the healthcare provider

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Decisional Objectives/Key Decision Points

- Create communication strategies and plan for:
  - Health care providers
  - Major employers
  - Community and faith-based partners
- Create guidance and/or education resources for patients and health care providers, including monitoring forms.
- Identify isolation facility for individual(s).
- Determine need for material support and services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing services.
- Movement plan for sick persons to a health care facility (if needed)
- Personal Protective Equipment (PPE) needed for persons providing support to sick persons in isolation.
- Determine type of monitoring:
  - Self-monitoring (what will be monitored, frequency, reporting)
  - Active monitoring (phone, video, or in-person; frequency; responsible staff)
  - Other type
- Plan the logistics for specimen collection and providing other medical services, if needed.
- Determine when to release from isolation and process for notification.

Implementation Methods

- **Health officer requests that a patient self-isolate**
  - Letter should be on official department letterhead, with a wet or electronic signature from the health officer. While a wet signature may be more impactful, it is not a legal requirement. It may be more efficient and avoid delay to use an e-signature under certain circumstances.
  - Letter should include additional information resources for providers, including phone numbers, websites, and other relevant resources.

- **Instruct health care providers to educate patients**
    - Work with communications teams to distribute a health alert to all providers in Washington.
        - Attach information or a publication to the alert that can be printed and displayed in waiting areas and treatment rooms.
        - Distribute a health alert to all relevant providers about the health officer's request.
- **Engage community organizations and faith-based organizations**
    - Work within already established relationships with community and faith-based partners.
        - If faith-based and community partners receive your health alerts, consider creating a separate alert for them with relevant information to the communities and individuals they serve.
        - Be willing to speak to their leadership/elders/members regarding the situation (within reason) and why we are making this ask.

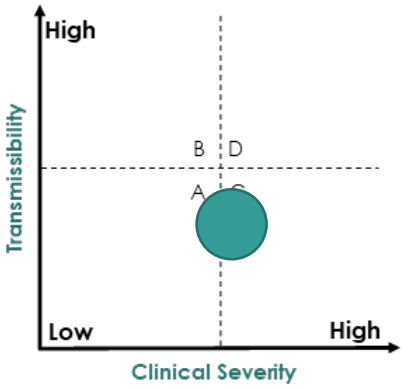
Intervention 7: Voluntary Quarantine of Contacts of Sick Persons

Reduce probability of transmission in the event that the contact becomes contagious before symptoms developed.

Transmissibility (1-5)	2
Clinical severity (1-7)	2-5
Recommend implementing at	A, B, C, D

Intervention type: Personal | Community | Environment

Limit spread | Prevent spread



Rationale for Use as Public Health Strategy

Quarantine refers to the separation and restriction of movement of persons who, while not yet ill, have been exposed to an infectious agent and therefore may become ill. Quarantine of exposed persons is a public health mitigation strategy intended to stop the spread of infectious disease. It is effective in protecting the public from disease.

Certain infected (but not yet symptomatic) individuals may spread illness and could unknowingly infect friends, neighbors, and others in the community before symptoms begin. Therefore, all contacts exposed to a sick person could be asked to voluntarily stay home for a specified period of time to assess for early signs of infection. If other household members of the contact become ill during this period, then the time for voluntary home quarantine may be extended for another incubation period. Quarantine at a designated facility (in lieu of home setting) also can be considered.

Success Factors: Effective contact tracing and individual ability to comply with request. Material support with material routine support and services (e.g. laundry, food) and working with the employer may help to encourage compliance.

Possible Drawbacks: Non-compliance increases risk of disease transmission.

Possible Benefits: Quarantine may allow quick identification of a suspect case and helps to prevent exposures early in the course of illness.

Settings and Use

- To avoid potential spread of the disease, consider use of voluntary quarantine for contacts who are exposed to a sick person but are not showing symptoms.
- Settings: At home or at a designated facility.
- For isolation and quarantine measures, state law requires making reasonable efforts to obtain voluntary compliance unless doing so would create a risk of serious harm (WAC 246-100-040(1)(a)). It is good public health policy, and it's also legally required.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health, with the required assistance of health care providers have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

Local health officers (and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7)) have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine
- WAC 246-101-105 – Duties of the healthcare provider

State

In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease and issue isolation and quarantine orders. The Secretary also has authority to investigate disease outbreaks and advise local health officers on measures to be taken in response.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)
- WAC 246-101-105 – Duties of the healthcare provider

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Decisional Objectives/Key Decision Points

- Definition of "close contact" (including length of exposure to ill person, travel history, etc.)
- Location(s) of quarantine facility (home, government facility, etc.)
- Length of quarantine
- Communication strategies and plan
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan for moving persons under quarantine to a health care facility if they develop symptoms
- Determine type of monitoring:
    - Self-monitoring (what will be monitored, frequency, reporting)
    - Active monitoring (phone, video, or in-person; frequency; responsible staff)
    - Other type
- Plan the logistics for specimen collection and providing other medical services, if needed.
- Determine when to release from quarantine and process for notification.

Implementation Methods

- **Health officer request for person to self-quarantine**
    - Letter should be on official department letterhead, with a wet or electronic signature from the health officer. While a wet signature may be more impactful, it is not a legal requirement. It may be more efficient and avoid delay to use an e-signature under certain circumstances.
    - The letter should include additional resources for providers, including phone numbers, websites, and other relevant resources.
- **Engage community-based and faith-based organizations to support**
    - Work within already established relationships with community-based and faith-based partners.
        - Consider creating and sending a custom health alert for them with relevant information to the communities and individuals they serve.
        - Be willing to speak to their leadership/elders/members regarding the situation (within reason) and why we are making this ask.
- **Work with employers**
    - Use current relationships with employers to support employees in voluntary quarantine due to exposure to sick contacts.

        - Suggest allowing employees to work from home. If this is already an option, consider working with human resources to be more flexible and inclusive.
        - Consider an emergency/temporary change in sick leave policy; allowing an employee to use sick leave proactively and earn it back retroactively.
            - This can decrease the hesitancy on the employees' part to stay home and increase participation in voluntary quarantine.
- **Create a public messaging campaign**
    - Work with communications team to create messages that:
        - Are culturally competent and at an appropriate reading level.
        - Are translated into the most spoken languages in the affected area.
        - Are relevant to the changing nature of the incident/outbreak.
    - Communicate on multiple platforms appropriate to the communities of affected persons.
    - Provide messages to LHJs and other partners to share with their constituents.
    - Send a health alert to health care providers.

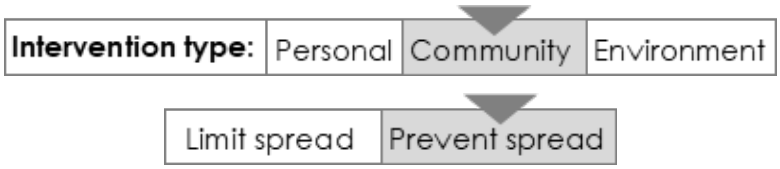
Special Considerations

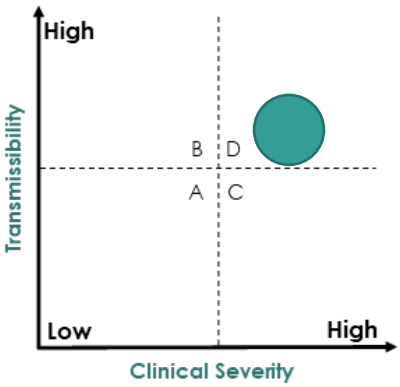
- Consider dedicating a phone line to answer questions that may follow the request for quarantine.
- Work with communications staff to translate materials as needed for community-based and faith-based organizations, community partners, and employers.
- Sovereign tribal nations may decide their own criteria for quarantine.
- Consider use of telemedicine options and home assessment teams for medical support and backup. The idea that medical health is available may help reduce anxiety.

Intervention 8: Involuntary Isolation of Sick Persons

Reduce probability of transmission by preventing contact between well and sick people.

Transmissibility (1-5)	3
Clinical severity (1-7)	5-6.5
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Isolation prevents a sick person from infecting others outside of their isolation location. Historically, isolation measures have helped to prevent the spread of infectious diseases, such as influenza, by stopping the person-to-person spread of virus via contaminated droplets from coughs and sneezes.

Success Factors: Success depends on health care facility and/or public health system ability to implement. Clearly communicate with affected communities about the rationale for use of isolation, and the responsibility for public officials to protect the safety and health of a community from communicable illnesses of high severity and high transmissibility.

Possible Drawbacks: Involuntary isolation is extremely restrictive and resource intensive. It limits personal liberties and can be controversial.

Possible Benefits: Isolation is effective in reducing the spread of illness. Use of involuntary isolation is a method to force compliance to the measure.

Settings and Use

- Isolation separates sick persons with a contagious disease from people who are not sick.
- Involuntary isolation is only recommended when an individual is not reliable or compliant with voluntary isolation for a disease that is highly severe and highly transmissible.
- For isolation and quarantine measures, state law requires making reasonable efforts to obtain voluntary compliance unless doing so would create a risk of serious harm (WAC 246-100-040(1)(a)). It is good public health policy, and it's also legally required.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: The local health officer and/or Secretary of Health may issue a detention order for involuntary isolation when they have reason to believe the person is infected with a communicable disease and poses a serious and imminent risk to the health and safety of others if not isolated. The local health officer must first make reasonable efforts to obtain voluntary

compliance, unless doing so would create a risk of serious harm. An order directly from a local health officer may last for up to 10 days. A court may order a longer period of isolation. Violation of an isolation order is a misdemeanor for which individuals may be arrested, fined, and imprisoned up to 90 days.

Local health officers, and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7), have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine
- WAC 246-100-070 – Enforcement of local health officer orders
- WAC 246-101-105 – Duties of the healthcare provider
- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- RCW 70.05.120(4) – Violations – Remedies - Penalties (misdemeanor for violation of an order)

Forms (find all instructions and forms on DOH's website):

- Emergency Involuntary Detention Order (Word)
  In addition to the form available at the link above, a COV-19 specific involuntary detention order is available. Please contact DOH for use.
- Confidential Schedule (Word)
  A local health officer may issue an isolation order immediately. Such an order is subject to court challenge. A court order is required to isolate an individual for longer than 10 days. Law enforcement may arrest an individual for violating a local health officer's or a court order. A court order is also enforceable through contempt proceedings.

  When no attempt is made to seek voluntary compliance due to the serious and imminent risk to the public, use the following forms:
- Summons (Word)
- Detention ex parte petition (Word)
- Confidential schedule (Word)
- Declaration supporting ex parte detention petition (Word)
- Order ex parte for involuntary detention (Word)

When voluntary compliance was sought, but the individual refused or otherwise indicated they would not comply, use the following forms:

- Summons (Word)
- Detention ex parte petition when voluntary detention refused (Word)
- Confidential schedule (Word)
- Declaration supporting ex parte detention petition when voluntary detention refused (Word)
- Order ex parte when voluntary detention refused (Word)

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. Tribal nations may decide their own criteria for isolation.

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Decisional Objectives/Key Decision Points

- Language for health officer order and involuntary detention court orders.
- Location(s) for isolation.
- Personal Protective Equipment (PPE) requirements for health care workers providing care for sick persons.
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan of moving sick persons under isolation to treatment facility, if isolated outside of a health care facility.
- Plans and logistics for specimen collection or providing other medical services, if needed.
- Communication strategies and plan to communicate decisions
    - Affected individuals and community members
    - Public, media, public officials
- Due process: understand and prepare for the rights of the affected patient if due process is initiated. Communicate steps for due process, such as administrative hearings, court review, or notification of right to object. Protect patient rights to privacy and restrictions on who can and cannot be notified (e.g., family member, employer)
- Plan to manage non-compliance with isolation. Identify progressively restrictive steps, up to court-ordered detention. Identify decision point for ordering person to a more restrictive location. Identify who will issue order and transport process.
- Determine when to release from isolation and process for notification.

Implementation Methods

- **Health officer order for emergency detention**
    - Once the person is ordered into isolation, the local health officer should seek a court order and must consider individual rights to due process. Seeking a court order quickly is a good idea if isolation sought is more than 10 days.
    - The needs of a person isolated or quarantined must be addressed to the greatest extent possible in a systematic and competent fashion, including, but not limited to, providing adequate food, clothing, shelter, means of communication with those in isolation or quarantine and outside these settings, medication, and competent medical care. Cultural and religious beliefs should be considered in addressing their needs.
- **Standing orders within a hospital**
    - Work with the hospital facility or designated health care provider and the health officer to create standing orders for the care of individuals in involuntary isolation.

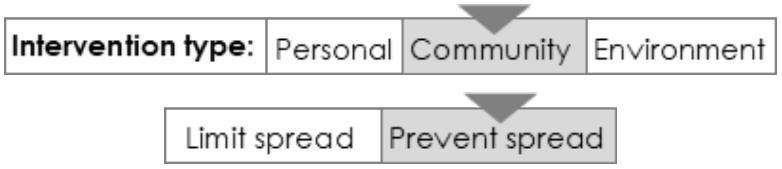
Special Considerations

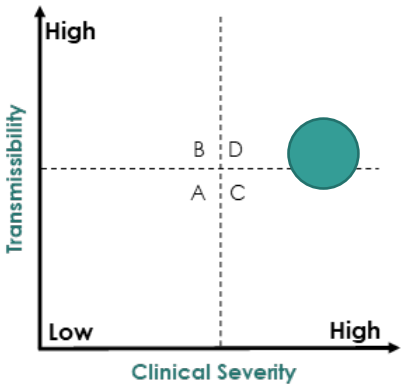
- Food, water, basic needs, and other support services for isolated patients.
- This intervention requires detailed coordination between state and local government officials.
- Court orders for involuntary isolation may be required.
- Tribal nations may decide their own criteria for isolation.
- When the individual is released, consider providing them with a letter that recognizes their release so they will not be mistakenly reported as not complying with the isolation order.

Intervention 9: Involuntary Quarantine of Contacts of Sick Persons

Reduce probability of transmission in the event that the contact becomes contagious before symptoms developed.

Transmissibility (1-5)	3
Clinical severity (1-7)	5-6.5
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Quarantine refers to the separation and restriction of movement of persons who, while not yet ill, have been exposed to an infectious agent and therefore may become infectious. Quarantine of exposed persons is a public health strategy intended to stop the spread of infectious disease. Quarantine is medically very effective in protecting the public from disease.

Certain infected but not yet symptomatic individuals may unknowingly infect friends, neighbors, and others in the community before becoming symptomatic.

In situations of highly transmissible and clinically severe infections where there are asymptomatic contacts who are not willing to quarantine, authorities may want to consider involuntary quarantine of contacts of sick persons to prevent possible disease spread, especially for novel pathogens of concern.

Success Factors: Success depends on health care facility and/or public health system ability to implement.

Possible Drawbacks: Involuntary quarantine is extremely restrictive and resource intensive.

Possible Benefits: Quarantine is extremely effective in reducing the spread of illness. Non-compliant persons can be prevented from spreading the disease.

Settings and Use

- Consider using involuntary quarantine for contacts who are not reliable or compliant and who were exposed to a sick person but are asymptomatic to avoid potential spread of disease.
- Involuntary quarantine at a designated facility is only recommended when an individual is not reliable or compliant.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: The local health officer and/or Secretary of Health may issue a detention order for involuntary quarantine when they have reason to believe the person is, or is suspected

to be, infected with or exposed to a communicable disease and poses a serious and imminent risk to the health and safety of others if not quarantined. The local health officer must first make reasonable efforts to obtain voluntary compliance, unless doing so would create a risk of serious harm. An order directly from a local health officer may last for up to 10 days. A court may order a longer period of quarantine. Violation of a quarantine order is a misdemeanor for which individuals may be arrested, fined, and imprisoned up to 90 days.

Local health officers, and the Secretary of Health under the circumstances outlined in RCW 43.70.130(7), have the authority to request isolation or quarantine under WAC 246-100-040. The health officer can authorize which people can enter the isolation or quarantine facility to provide medical care and/or meet the needs of the sick person. Any person who enters an isolation or quarantine facility without authorization is subject to quarantine by the health officer.

The State Board of Health (SBOH) has broad power to "adopt rules for the imposition and use of isolation and quarantine" (RCW 43.20.050(2)(e)). Local Health Officers and the Secretary of Health can issue isolation and quarantine orders based on SBOH rules.

Applicable Law(s):

- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-040 – Procedures for isolation or quarantine
- WAC 246-100-045 - Conditions and principles for isolation or quarantine
- WAC 246-100-050 - Isolation or quarantine premises
- WAC 246-100-055 - Relief from isolation or quarantine
- WAC 246-100-070 – Enforcement of local health officer orders
- RCW 43.20.050 - Powers and Duties of the State Board of Health
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- RCW 70.05.120(4) – Violations – Remedies - Penalties (misdemeanor for violation of an order)

Forms (find all instructions and forms on DOH's website):

- Emergency Involuntary Detention Order (Word)
  In addition to the form available at the link above, a COV-19 specific involuntary detention order is available. Please contact DOH for use.
- Confidential Schedule (Word)
- A local health officer may issue an isolation order immediately. Such an order is subject to court challenge. A court order is required to isolate an individual for longer than 10 days. Law enforcement may arrest an individual for violating a local health officer's or a court order. A court order is also enforceable through contempt proceedings.

When no attempt is made to seek voluntary compliance due to the serious and imminent risk to the public, use the following forms:

- Summons (Word)
- Detention ex parte petition (Word)
- Confidential schedule (Word)
- Declaration supporting ex parte detention petition (Word)

- Order ex parte for involuntary detention (Word)

When voluntary compliance was sought, but the individual refused or otherwise indicated that he or she would not comply, use the following forms:

- Summons (Word)
- Detention ex parte petition when voluntary detention refused (Word)
- Confidential schedule (Word)
- Declaration supporting ex parte detention petition when voluntary detention refused (Word)
- Order ex parte when voluntary detention refused (Word)

Federal

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act
- 42 U.S.C. § 201 *et seq.* – Public Health Service Act

Tribal

- Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. Tribal nations may decide their own criteria for isolation.

Decisional Objectives/Key Decision Points

- Language for health officer order and involuntary detention court orders.
- Definition of "close contact" (including length of exposure to ill person, travel history, etc.)
- Location(s) of quarantine facility (home, government facility, etc.)
- Length of quarantine
- Communication strategies and plan
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan to move persons under quarantine to a health care facility if they develop symptoms
- Plans and logistics for specimen collection or provision of other medical services, if needed.
- Active monitoring for persons under quarantine

Implementation Methods

- **Health officer order for emergency detention**
    - Once the person is ordered into quarantine, the local health officer should seek a court order and must consider individual rights to due process. Seeking a court order quickly is a good idea if isolation sought is more than 10 days.
    - The needs of a person isolated or quarantined must be addressed to the greatest extent possible in a systematic and competent fashion, including, but not limited to, providing adequate food, clothing, shelter, means of communication with those in isolation or

quarantine and outside these settings, medication, and competent medical care. Cultural and religious beliefs should be considered in addressing their needs.

- **Standing orders within a hospital**
    - Work with the hospital facility or designated health care provider and the health officer to create standing orders for the care of individuals in involuntary quarantine.

Special Considerations

- Food, water, basic needs, and other support services for quarantined individuals.
- This intervention will require detailed coordination between state and local government officials.
- Court orders for involuntary isolation may be required.
- Tribal nations may decide their own criteria for isolation.
- When the individual is released, consider providing them with a letter that recognizes their release so they will not be mistakenly reported as not complying with the quarantine order.

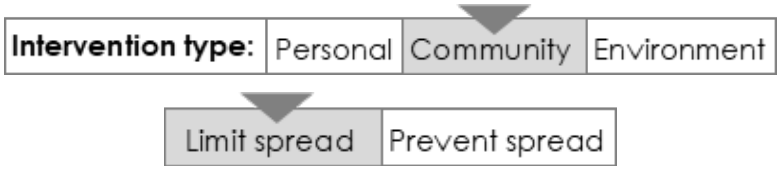
Decisional Objectives/Key Decision Points

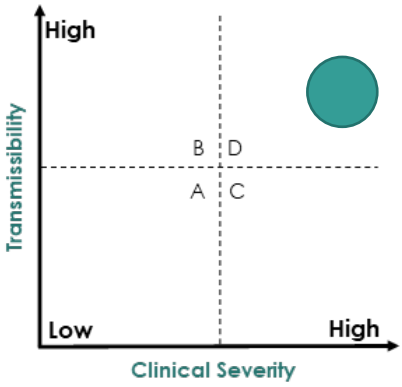
- Language for health officer order and involuntary detention court orders.
- Definition of “close contact” (including length of exposure to ill person, travel history, etc.)
- Location(s) of quarantine facility (home, government facility, etc.)
- Length of quarantine
- Communication strategies and plan
- Determine need for material services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing these services.
- Plan to move persons under quarantine to a health care facility if they develop symptoms
- Plans and logistics for specimen collection or provision of other medical services, if needed.
- Active monitoring for persons under quarantine

Intervention 10: Recommend or Order Cancellation of Major Public and Large Private Gatherings

Reduce probability of transmission by reducing the number of the interpersonal contacts.

Transmissibility (1-5)	4
Clinical severity (1-7)	5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Social distancing measures, such as cancellation or postponement of mass gatherings, reduce opportunities for person-to-person virus transmission and can help delay the spread and slow the exponential growth of disease spread. The optimal strategy is to implement these measures simultaneously in places where people gather.

Canceling mass gatherings, in combination with other social distancing measures (e.g., patient isolation, quarantine of exposed persons, and school closures), may help reduce virus transmission.

Success Factors: Success depends upon event sponsor compliance and authorities' ability to enforce effectively.

Possible Drawbacks: May result in revenue loss, public outrage, or political backlash, and may disproportionately affect certain cultural and community groups.

Possible Benefits: Reduces opportunities for widespread disease transmission by reducing interpersonal contacts and increasing social distance.

Settings and Use

- Social distancing measures can be implemented in a range of community settings, including public places where people gather (e.g., parks, houses of worship, theaters, sports arenas).
- Modifying, cancelling, or postponing events is an approach that might reduce face-to-face contact in community settings.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods. This includes issuing orders to cancel events.

Key Stakeholders: Decision should be made in coordination with local elected officials (such as mayor, city council, county council, and/or county executive), emergency managers, local law enforcement, impacted businesses, proprietors, cultural and religious leaders, event sponsors and event organizers.

Applicable Law(s) for Decision Makers:

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders

State

Key Decision Makers: In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease and issue orders to cancel events. The Secretary of Health also has the authority to promote public health activities and educational campaigns.

The Governor has broad authority to proclaim a state of emergency in order to preserve life, health, property, or the public peace (RCW 43.06.220). A governor declared emergency could trigger limitations such as curfews, prohibitions of people on streets and open areas, limit use of streets, highways or public ways; or other broad restrictions outlined by the law, such as prohibiting travel.

Washington's laws against discrimination are outlined in RCW 49.60. Public officials should consider how communities may be impacted and take action to remove stigma that may marginalize or discriminate against groups.

Applicable Law(s):

- RCW 43.06.220 – State of emergency – powers of governor pursuant to proclamation
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)
- RCW 49.60 – Discrimination – Human Rights Commission

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. They may decide their own criteria for canceling large gatherings.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders.

Applicable Law(s):

- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services

Decisional Objectives/Key Decision Points

- Establish guidance/requirements needed to request or order the cancellation of gatherings.
- Identify affected events and disproportionately impacted communities.
    - Research upcoming cultural and religious holidays, observances, and events.
    - Assess economic impact for both individuals and larger communities (loss of wages, tourism revenue)
- Plan community engagement efforts, methods, and approaches that are responsive to the needs, preferences, and values of the community.
- Develop strategies to gain buy-in from event organizers and leadership
- Plan for enforcement of cancellations
    - Partner with trusted community leaders
    - Assess need, benefit, and potential unintended consequences of working with law enforcement/security personnel.
    - Create mitigation strategies, as needed, to address any real, potential, or perceived issues or consequences of enforcement activities.
- Determine whether events should be pre-emptively canceled.
- Proactively address unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Healthcare Considerations

- Consider impact on the healthcare system and their current capacity and if the intervention would reduce or increase burden.
- Determine if implementation would mitigate burden on health care system to maintain essential medical services, especially for underserved populations.
- Identify if this would decrease or increase absenteeism among health care workers.
- Potential legal and ethical issues involving altered standards of care.

Implementation Methods

- **Health officer order or request that major government-sponsored events/gatherings be cancelled or postponed.**
    - Meet with event organizers, committees and employees.
        - Explain the situation
        - Offer alternatives, if any, including new location, rescheduling the event, or changing entrance rules.
    - Government-sponsored events or gatherings may be affected anyway due to the Continuity of Operations Plan.
    - Work with public information officers/communication teams to get the information out with relevant Q&As and FAQs
- **Create and distribute accessible, public messaging about closures**
    - General messaging about why these measures are being taken.

        - Work with communications team to create messages that:
            - Meet readability and accessibility guidelines.
            - Are culturally and linguistically relevant.
            - Are translated into the most spoken languages in the affected area.
            - Are relevant/adaptable to the changing nature of the incident/outbreak.
        - Communicate through multiple platforms and channels appropriate to the affected communities
        - Engage with community leaders or representatives for advice and buy-in.
        - Provide messages to LHJs and other partners to share with their constituents.
        - Provide consistent messaging throughout the state via media outreach.
        - Develop tailored messaging for disproportionately impacted communities.
    - Specific messaging about the cancellation of specific events.
        - Display appropriate messaging in places where attendees may see them.
        - Work with event organizers and to use their communication methods.

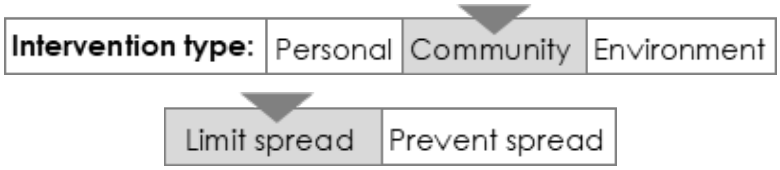
Special Considerations

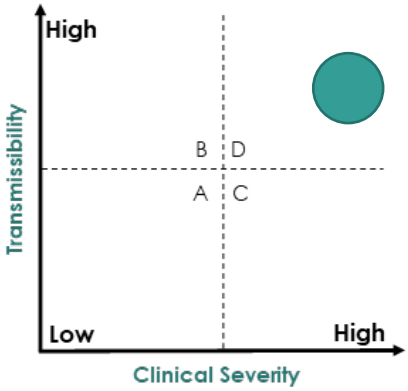
- Requires excellent and effective communication mechanisms to notify community of details and rationale. Communications must be culturally relevant and in a language and format that the audience can understand to be effective.
- Any attempts to implement social distancing in cultural & religious gatherings should be informed by cultural & religious leaders.
- Canceling events could affect civic participation and social cohesion. It could also create an opportunity for discrimination if only certain events are closed.
- Postponing the event may benefit or negatively impact employees as well as attendees or participants, depending on the event and the individual's role.
- This intervention will require detailed coordination between state, local government officials, and community organizations/leaders/groups.
- This intervention will require detailed coordination with the event organizers and planners.
- Cancellation of large events may affect individual income, revenue, employment, economic opportunity, and commerce.
- Coordination with the Office of the Governor and/or local government leadership may be needed.
- There should be consistency in which events are cancelled. Cancellation should not be based on the communities likely to attend or work at the event.
- Culturally and religiously diverse communities may be disproportionally impacted.
- Families on the brink of housing insecurity may be disproportionately impacted by loss of wages, potentially increasing risk of missing rent payments, potentially increasing risk of eviction and homelessness. Homeless individuals already experience barriers to health care, services, and information.
- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.

Intervention 11: Recommend or Order Closure of Public or Private Sites within impacted communities

Viruses quickly and easily spread in places where people gather in close contact, such as schools, child care facilities, workplaces, and public buildings. Dismissing or closing such facilities may be considered to limit disease spread by reducing the number of interpersonal contacts.

Transmissibility (1-5)	4
Clinical severity (1-7)	5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

Social distancing measures, including closure of buildings, reduce opportunities for person-to-person virus transmission and can help delay the spread and slow the exponential growth of disease spread. If disease spread is occurring in a school, child care facility or public building, dismissing students, staff, or the public from these locations or closing the locations early can limit further spread. The optimal strategy may be to implement several social distancing steps simultaneously where large groups of people gather.

Success Factors: Early implementation of dismissals or closures to limit spread. Facility compliance and authorities' ability to enforce effectively.

Possible Drawbacks: May result in missed school days, revenue loss, public outrage, or political backlash. It may disproportionately affect certain cultural and community groups. Low income and other vulnerable communities may be put at risk for non-outbreak related harm if they are unsupervised, don't have access to an adult caretaker, or cannot communicate with the outside world if there is an emergency. It may cause disruption for families and communities. Adults may experience missed work and loss of income from their workplace closure or to stay home to care for children.

Possible Benefits: Reduces opportunities for widespread disease transmission by reducing interpersonal contacts and increasing social distance.

Settings and Use

Specific priority settings include schools, child cares, workplaces, meetings, and other places where people gather (e.g., parks, religious institutions, theaters, and sports arenas).

Early dismissal or closing facilities is a social distancing measure that may reduce face-to-face contact in community settings to reduce the spread of diseases transmitted by contact, droplets, or air. Choose social distancing measures depending on the severity of the disease.

School or child care: Examples of social distancing, closures and dismissals could include:

- Dismissing or cancelling classes and use web-based distance learning instead
- Pre-emptive, coordinated school closures or dismissals at child care facilities, K–12 schools, and institutions of higher education.
- Canceling school concerts, after-school programs, or sporting events.

Workplaces and public buildings: Many work settings involve shared work space, equipment, and face-to-face contact. Public buildings can bring many people into close contact. Examples of social distancing for these settings include telecommuting and remote-meeting options in workplaces.

Jurisdictional Authority and Key Decision Makers

Local

Key Decision Makers: Local health officer and local board of health have authority to control and prevent spread of contagious or infectious diseases within their jurisdiction and to inform the public about the nature of the disease and prevention methods.

When there is a potential for an outbreak within a school or childcare center, local health officers have the authority to order school superintendents and childcare center administrators to close their facilities, cancel events, and/or exclude students, staff, and volunteers.

Key Stakeholders: Decision should be made in coordination with school superintendents, boards of education, local elected officials (such as mayor, city council, county council, and/or county executive), child care administrators, private sector, emergency managers, local law enforcement, impacted businesses, proprietors, event sponsors and event organizers.

Applicable Law(s):

- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders
- WAC 246-110-020 – Control of contagious disease (schools and childcare centers)

State

Key Decision Makers: In an emergency or when a local health officer consents or does not act, the Secretary of Health may exercise the same authority as a local health officer to control and prevent disease. The Secretary of Health also has the authority to promote public health activities and educational campaigns.

Applicable Law(s):

- RCW 43.70.020(3) – Department of Health created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.070 – Local health officer – powers and duties (can be exercised by Secretary)

- RCW 49.60 – Discrimination – Human Rights Commission

Tribal

- Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government. They may decide their own criteria for canceling school, child care, and tribal facilities.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders.

Applicable Law(s):

- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services

Decisional Objectives/Key Decision Points

- Scale of closures (e.g. specific schools, districts, ages, geographic regions)
- Identify affected facilities
- Determine whether closure is limited to certain at-risk groups or applies to the general public.
- Length of closure
- Determine building cleaning protocols, if needed.
- Personal Protective Equipment (PPE), if any, for persons cleaning closed facilities
- Communication strategies and plan
- How to get employer engagement and buy-in

Healthcare Considerations

- Consider impact on the healthcare system and their current capacity and if the intervention would reduce or increase burden.
- Determine if implementation would mitigate burden on health care system to maintain essential medical services, especially for underserved populations.
- Increase in absenteeism among health care workers if schools and childcare are closed.
- Potential legal and ethical issues involving altered standards of care.

Implementation Methods

- **Local health officials and local school administrators work closely together in decision making to implement closures and dismissals**.
    - Include communication to parents and the public in case of school or child care closure.
    - Include communication to employees in case of a workplace closure.
- **Communicate to the media, partners, and the public about any facility or building closure.**
    - Create culturally relevant publications in all needed languages.
    - Work through the building or organization's communication channels.
    - Communicate on multiple platforms appropriate to the affected communities

- Provide consistent messaging throughout the state via media outreach.

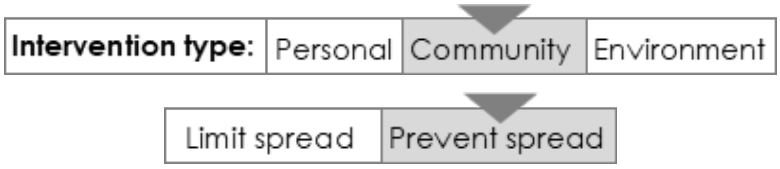
Special Considerations

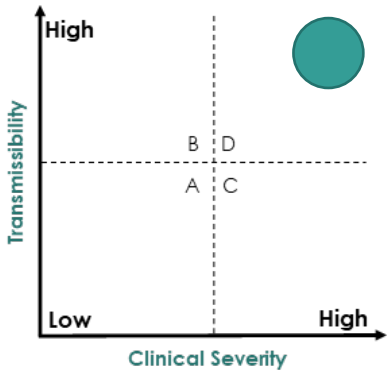
- Local health policies and risk communication strategies should take into account community attitudes and acceptance of preventive behaviors related to social distancing, which might differ across racial/ethnic, cultural, and economic groups.
- Strategies can be used in settings like schools (e.g., closure), workplaces (e.g., phone conferences instead of in-person meetings), and mass gatherings (e.g., postponement or cancellation) to reduce spread and infections. Multiple social distancing measures can be implemented simultaneously.
- Regarding school and child care closures, public officials should make decisions that balance local benefits and potential harms and consider timing, flexibility, and modifications to intervention based on the severity of local conditions.
- Requires advanced planning and preparation, as well as political leadership; collaboration between public health and emergency management agencies; coordination with schools, child care, businesses, nongovernmental organizations, and community- and faith-based organizations; and clear communication with the public.
- Cancelling school, child care facilities, workplaces, and public buildings would reduce income for staff working in those locations. Additionally, this could impact the income of working parents left without childcare and school and impact the ability for students to learn.
- Consider options for students who receive free or reduced-price student lunches to continue receiving meals during missed school days. Families experiencing housing insecurity or homelessness may need additional and proactive planning to ensure children are able to access alternative meals during closures.
- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Intervention 12: Prevent Non-Emergency Travel Outside the Home

Limiting travel outside of the home will reduce probability of the transmission by reducing the numbers of the interpersonal contacts. Travel should be restricted to emergency use only.

Transmissibility (1-5)	5
Clinical severity (1-7)	5.5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

This intervention is a more extreme measure of social distancing, which reduces occasions for person-to-person virus transmission to help delay the spread and slow the exponential growth of a pandemic.

Success Factors: Success depends upon compliance and authorities' ability to enforce effectively.

Possible Drawbacks: Will prevent the operation of public entities and private businesses; the effect will be felt economically by employees as loss of income, and the public as lack of commodity availability. Revenue loss; public outrage; and political backlash are possible. Travel restrictions may disproportionately affect certain cultural and community groups.

Possible Benefits: Reduces opportunities for direct or indirect disease spread, and may prevent a disease from entering new geographical region.

Settings and Use

- Travel restrictions are conditionally recommended during an early stage of a localized and extraordinarily severe pandemic for a limited period of time. Before implementing, consider cost, acceptability and feasibility, as well as ethical and legal considerations, in relation to this measure.
- This intervention should be considered when less-restrictive interventions have failed or to prevent disease introduction into new geographical areas.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: Local governments have police power to protect the public health under the U.S. Constitution's 10th Amendment, granting authority to implement restrictions on private rights for the sake of public welfare, order, and security. It also includes reasonable regulations to protect public health and safety. Under the 10th Amendment, police powers resides with state and local authorities unless specifically delegated to federal government. Local governments

may need to collaborate with state and federal partners as the complexity of the emergency increases. Local governments may request support from the state.

The Governor has broad authority to proclaim a state of emergency in order to preserve life, health, property, or the public peace (RCW 43.06.220). A governor declared emergency could trigger limitations such as curfews, prohibitions of people on streets and open areas, limit use of streets, highways or public ways; or other broad restrictions outlined by the law, such as prohibiting travel.

Washington's laws against discrimination are outlined in RCW 49.60. Public officials should consider how communities may be impacted and take action to remove stigma that may marginalize or discriminate against groups.

Key Stakeholders: Decision should be made in coordination with local elected officials (such as mayor, city council, county council, and/or county executive), private sector, emergency managers, local law enforcement, school superintendents, boards of education, health care, and transportation agencies.

Applicable Law(s):

- RCW 43.06.220 – State of emergency – powers of governor pursuant to proclamation
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- RCW 49.60 – Discrimination – Human Rights Commission
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders.

Applicable Law(s):

- 42 U.S.C. § 201 *et seq.* – Public Health Service Act
- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services
- Public Law No. 116-22 – 2019 Pandemic and All-Hazards Preparedness and Advancing Innovation Act (PAHPAIA)
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act

Decisional Objectives/Key Decision Points

- Define "essential travel"
- Define geographic location for ban on non-essential travel and length of ban.
- Communication strategies and communication plan
- Enforcement plan in coordination with law enforcement
    - Personal Protective Equipment (PPE) needed for enforcement officials
- Movement plan for individuals with essential travel needs
- Consider support of elected officials in issuing the order
- Consider how individual or community will access emergency services, if needed, during the restriction period
- Determine need for material support and services to meet essential needs (food, laundry, utilities, prescription medication, social support, etc.) and who will authorize providing services.
- Plans and logistics for specimen collection or providing other medical services, if needed.

Healthcare Considerations

- Consider impact on the healthcare system and their current capacity and if the intervention would reduce or increase burden.
- Determine if implementation would mitigate burden on health care system to maintain essential medical services, especially for underserved populations.
- Increase in absenteeism among health care workers if schools and childcare are closed.
- Potential legal and ethical issues involving altered standards of care.

Implementation Methods

- Health officer order to the public to cease all non-essential travel.
- Work with law enforcement agencies to enforce.
    - Enforcement must be feasible and within the capabilities of the agency.
- Distribute messaging to help the public understand the reason for the measure and what to do.
    - Ensure messaging is culturally and linguistically appropriate for any groups disproportionately affected by the travel restriction. Ensure messaging is accessible for individuals with disabilities and available in alternative formats.

Special Considerations

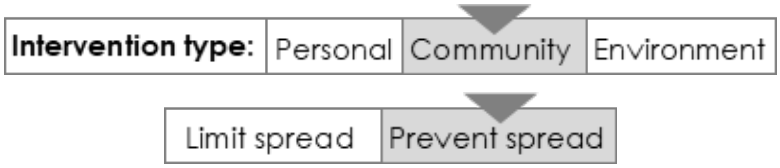
- Consider obtaining support of elected officials in issuing such a restrictive order.
- This intervention will require detailed coordination between state and local government officials.
- Law enforcement will be necessary to enforce the travel ban.
- Schools, transit services, and places of work will be affected.
- Sovereign tribal nations may decide their own criteria for non-emergency travel.
- Consider possible impacts to the health care system, such as an increase in people seeking care.
- Plan in advance any services needed to support the community during the restriction period.

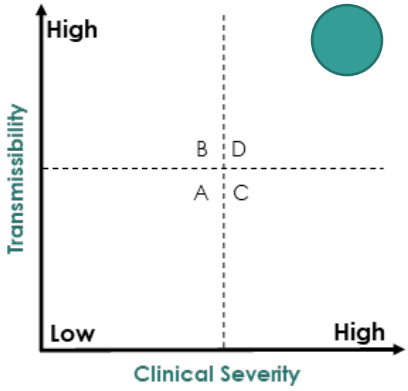
- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Intervention 13: Establish a Cordon Sanitaire

Contains a communicable disease within specific geographical boundaries. Legally enforceable order that restricts movement into or out of an area of quarantine to reduce spread in and to persons outside affected area.

Transmissibility (1-5)	5
Clinical severity (1-7)	5.5-7
Recommend implementing at	D





Rationale for Use as Public Health Strategy

A cordon sanitaire is the restriction of movement of people in or out of the defined geographic area in order to contain disease within specific geographical boundaries. It is created around an area experiencing an outbreak or disease to prevent spread. This is a form of isolation and quarantine when applied to all inhabitants of an area as a sanitary barrier.

Success Factors: Success depends upon compliance and authorities' ability to enforce effectively. It also depends on engaging affected people to communicate the reason for the measure and gain their support for complying.

Possible Drawbacks: Controversial because it infringes on personal freedom of movement. May lead to feeling isolated or result in the isolation of an entire community. People could be stranded without support. Commerce will be heavily compromised. Revenue loss, public outrage, and political backlash are possible. It may disproportionately affect certain cultural and community groups, low-income families, rural and under-resourced communities, and individuals with un-related acute, chronic, or severe medical needs. May be difficult to solicit cooperation.

Possible Benefits: May contain a disease within the boundaries of the cordon. Reduces need for urgent evaluation of large numbers of potential contacts to determine indications for activity restrictions. May reduce transmission among groups without explicit activity restrictions.

Settings and Use

This strategy can be used when extensive transmission is occurring, a significant number of cases lack identifiable epidemiologic links at the time of evaluation, and/or restrictions placed on persons known to have been exposed are insufficient to prevent further spread.

Consider this intervention with highly transmissible and clinically severe disease that has requires geographic containment. This could apply to diseases that are easily transmitted

human-to-human via contact, droplet, and/or airborne routes when less-restrictive interventions have failed, or to prevent introduction into new geographical areas.

Jurisdictional Authority and Key Decision Makers

Local, State

Key Decision Makers: Local governments have police power to protect the public health under the US Constitution's 10th Amendment, granting authority to implement restrictions on private rights for the sake of public welfare, order, and security. It also includes reasonable regulations to protect public health and safety. Under the 10th Amendment, police powers resides with state and local authorities unless specifically delegated to federal government. Local governments may need to collaborate with state and federal partners as the complexity of the emergency increases. Local governments may request support from the state.

The Governor has broad authority to proclaim a state of emergency in order to preserve life, health, property, or the public peace (RCW 43.06.220). A governor declared emergency could trigger limitations such as curfews, prohibitions of people on streets and open areas, limit use of streets, highways or public ways; or other broad restrictions outlined by the law, such as prohibiting travel.

Washington's laws against discrimination are outlined in RCW 49.60. Public officials should consider how communities may be impacted and take action to remove stigma that may marginalize or discriminate against groups.

Applicable Law(s):

- RCW 43.06.220 – State of emergency – powers of governor pursuant to proclamation
- RCW 43.70.020(3) – Department created
- RCW 43.70.130 – Powers and duties of the Secretary of Health
- RCW 70.05.060 – Powers and duties of local board of health
- RCW 70.05.070 – Local health officer – powers and duties
- RCW 49.60 – Discrimination – Human Rights Commission
- WAC 246-100-021 – Responsibilities and duties – Health care providers
- WAC 246-100-036 – Responsibilities and duties – Local health officers
- WAC 246-100-070 – Enforcement of local health officer orders

Tribal

Tribal governments have the authority and responsibility to control communicable disease on tribal lands and are expected to do so according to the laws, rules, and regulations of the tribal government.

Federal

Key Decision Makers: The federal government has independent authority when emergencies cross state and national borders. HHS Secretary may declare a public health emergency under 42 USC sec. 247, which is a way to get Congress to fund a public health emergencies account, but declarations are often made receiving without associated Congressional funding.

The diseases subject to quarantine under federal law are determined by Executive Order. The most recent order published in the Federal Register includes severe acute respiratory syndromes and provides the basis for federal quarantine.

Applicable Law(s):

- 42 U.S.C. § 201 *et seq.* – Public Health Service Act
- 42 U.S.C. § 247d – Public health emergencies
- 42 U.S.C. § 264 - Regulations to control communicable diseases
- 28 CFR Part 35 – Nondiscrimination on the Basis of Disability in State and Local Government Services
- 42 C.F.R. Part 70 - Interstate Quarantine
- 42 C.F.R. Part 71 - Foreign Quarantine
- Public Law No. 116-22 – 2019 Pandemic and All-Hazards Preparedness and Advancing Innovation Act (PAHPAIA)
- Public Law 113-5 – Pandemic and All Hazards Preparedness Reauthorization Act

Decisional Objectives/Key Decision Points

- Geographic location and timeframe of cordon sanitaire.
- Communication strategies and communication plan, including:
    - How affected community will receive updates
    - Whether to set up a call center
- Work with law enforcement to determine an enforcement strategy, including non-compliance.
    - Personal Protective Equipment (PPE) for officials enforcing the cordon sanitaire
- Movement of individuals and essential personnel into and out of the cordoned area for health and safety reasons
- Movement of materials (e.g. food, medical supplies/services, waste management) into and out of the cordoned area and providing essential services (e.g. utilities and water), and who will authorize providing services.
- Plan for health and emergency services in the cordoned area, such as mental health support, telehealth, and emergency medical transport
- Plans and logistics for specimen collection or providing other medical services, if needed.
- Identify communities that will be disproportionately impacted or burdened.
- Plan community engagement efforts, methods, and approaches that are responsive to the needs, preferences, and values of the community.
- Proactively address unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

Implementation Methods

- **Health officer orders a cordon for a specific geographic area.**
    - Work with local health officer to determine best geographic area; work with the Washington State Department of Transportation and other transportation partners to transport cases and/or contacts to or from a geographic area.
- **Work with law enforcement agencies to enforce the cordon.**

    - Determine law enforcement needs and whether the agencies need additional officers.
- **Create and distribute accessible, public messaging,**
    - General messaging about why these measures are being taken.
        - Work with communications team to create messages that:
            - Meet readability and accessibility guidelines.
            - Are culturally and linguistically relevant.
            - Are translated into the most spoken languages in the affected area.
            - Are relevant/adaptable to the changing nature of the incident/outbreak.
        - Communicate through multiple platforms and channels appropriate to the affected communities
        - Engage with community leaders or representatives for advice and buy-in.
        - Provide messages to LHJs and other partners to share with their constituents.
        - Provide consistent messaging throughout the state via media outreach.
        - Develop tailored messaging for disproportionately impacted communities.

Special Considerations

- Requires excellent communication mechanisms to notify community of details and rationale.
- Low-income families, immigrant/refugee communities, communities of color, and individuals with criminal records may be disproportionally impacted by enforcement activities.
- Requires plans/protocols for providing essential services. Plan movement of materials (e.g., food, medical supplies/services, and waste management) into and out of the cordoned area and essential services (e.g., utilities and water) to avoid additional public health issues.
- Requires detailed coordination between state, local government officials, and community organizations/leaders/groups.
- Requires law enforcement to enforce travel restrictions and maintain security at borders, but their involvement may create stress, trauma/re-traumatization, and fear for certain communities.
- Heavily affects individual income, revenue, employment, economic opportunity, and commerce.
- Limits transportation for persons requiring medical evaluation, with appropriate infection control precautions. Consider use of telehealth resources to support this need, but that telehealth may not be an accessible resource for all individuals and communities in need.
- May disproportionately impact individuals with other, non-related chronic, severe, and acute medical conditions that require ongoing/follow-up treatment or management.
- Requires plan to divert flow of critical infrastructure supplies and materials that normally move through the cordoned area.
- Requires plan to provide mental health support.
- Risk of noncompliance, particularly as length of time increases. May require enforcement for noncompliance.
- When an entire community is involved, requires cooperation with neighboring jurisdictions that may not be using a similar intervention, particularly in situations where persons live in one city and work in another and only one locale is affected by the intervention.
- Coordination with the Office of the Governor and/or local government leadership may be needed.
- Tribal nations may decide their own criteria for cordoning and any relevant security concerns.
- Families on the brink of housing insecurity may be disproportionately impacted by loss of wages, potentially increasing risk of missing rent payments, potentially increasing risk of eviction and

homelessness. Homeless individuals already experience barriers to health care, services, and information.

- Unintended consequences that inequitably impact historically marginalized individuals and communities may further erode trust with governmental systems needed for overall public health and future response efforts.
- Ensure all strategies, communications, and engagement are culturally and linguistically appropriate and meet readability and accessibility guidelines.

From: CBN Editor
To: Duchin, Jeff
Subject: What US Hospitals Should Do Now to Prepare for a COVID-19 Pandemic
Date: Thursday, February 27, 2020 9:49:21 AM

What US Hospitals Should Do Now to Prepare for a COVID-19 Pandemic

Eric Toner, MD, and Richard Waldhorn, MD February 27, 2020

The World Health Organization (WHO) and the US Centers for Disease Control and Prevention (CDC) have called on health systems around the world to prepare for a possible COVID-19 pandemic. The purpose of this article is to offer to American hospital administrators and clinicians specific judgment on what hospitals should do to prepare for a COVID-19 pandemic. This is an update of a similar perspective related to pandemic influenza, published in 2006.[1] These recommendations derive from the authors' analysis of the consequences of a flu pandemic, review of many existing hospital plans, analysis of the federal government's recommendations, and meetings with a number of leaders in health care, public health, and emergency management. Recognizing that any such recommendations must be based on numerous untestable assumptions, any of which can be reasonably challenged, we propose specific actions and priorities for the purpose of making the discussion of hospital pandemic preparedness issues more operationally useful. This commentary pertains to hospitals, but long-term care facilities, outpatient clinics, medical offices, and other healthcare facilities must also urgently prepare.

The Argument for Urgent Preparedness

The current COVID-19 epidemic looks very much like an early influenza pandemic in many important respects. It is spreading from person to person efficiently, much like influenza, including some degree of pre-symptomatic spread. Although the true case fatality rate is as yet uncertain, all evidence suggests that it is as severe as, if not more severe than, influenza pandemics of the last century. The case fatality rate (CFR) of confirmed COVID-19 patients in China is estimated to be 1-3%, although this may not account for all mildly symptomatic or asymptomatic infections. In some regions of China outside Hubei, the CFR has been less than 1%. For comparison, the CFR of the 2009 influenza pandemic was around 0.1%, the 1968 and 1957 pandemics in the United States were about 0.5%, and the CFR of the 1918 pandemic was estimated to be 2.5 % in the United States.

Because it will take considerable time to fully understand the epidemiology of COVID-19, it is reasonable to begin preparations using a model we have studied extensively for decades and that seems similar to COVID-19—pandemic influenza. The threat of a novel influenza pandemic has stimulated international, national, and local planning and preparedness efforts for years. In the event of a 1918-scale flu pandemic, hospitals would be flooded with sick patients seeking care.

The impact of a COVID-19 pandemic on hospitals is expected to be severe in the best of circumstances. Currently, US hospitals routinely operate at or near full capacity and have limited ability to rapidly increase services. There are currently shortages of healthcare workers of all kinds. Emergency departments are overcrowded and often have to divert patients to other hospitals.

In recent years, there has been a reduction in the overall number of hospitals, hospital beds, and emergency rooms. During an epidemic, the healthcare workforce would be greatly reduced. Healthcare workers would face a high risk of infection because of contact with infected patients; many would need to stay home to care for sick relatives, and, in the absence of vaccine, others might fear coming to work lest they bring a lethal infection home to their families. The provision of medical services to both COVID-19 and non–COVID-19 patients may be adversely affected in most communities.

Detailed modeling projections for COVID-19 have not yet been released by the US government or WHO; however, the US Department of Health and Human Services (HHS) released official planning assumptions for pandemic influenza, ranging from a moderate pandemic like 1968 or 1957, to one based on a very severe pandemic like 1918.[2] These may be the best tools we have at the moment. They differ by more than 10-fold in the number expected to need hospitalization, intensive care, and mechanical ventilation (see

Table 1).

Table 1
HHS pandemic planning assumptions

Moderate Scenario (1968-like)	**Very Severe Scenario** (1918-like)
38 M needing medical care	38 M needing medical care
1 M hospitalizations	9.6 M hospitalizations
200,000 needing ICU	2.9 M needing ICU

As a comparison, there are about 46,500 medical ICU beds in the United States and perhaps an equal number of other ICU beds that could be used in a crisis. Even spread out over several months, the mismatch between demand and resources is clear.

Some patients in China have been treated with extracorporeal membrane oxygenation (ECMO), and some US medical centers with this technology are preparing to use it as well. For US hospitals with this capability, it would be prudent to think through how this scarce resource would be allocated if demand exceeds resources.

Preparedness Defined

Based on such calculations, it would seem that preparing for a pandemic of even moderate severity is a difficult challenge. For the purpose of this analysis, we use the following definition of preparedness:

Every hospital, in collaboration with other hospitals and public health agencies, will be able to provide appropriate care to COVID-19 patients requiring hospitalization while maintaining other essential medical services in the community, both during and after a pandemic.

This definition recognizes that what constitutes “appropriate care” and the criteria for hospital admission may well change during a pandemic.

The Top Priorities

Individual hospitals and groups of hospitals involved in regional coordination of pandemic preparedness should focus their initial preparedness efforts in the following priority areas:

1. Comprehensive and realistic planning based on actual CDC FluSurge projections in each hospital, and collaborative planning among all hospitals in a region (eg, healthcare coalitions).
2. Limiting the nosocomial spread of the virus to (1) protect the healthcare workers and, thus, maintain a hospital workforce; (2) prevent the hospital from being a disease amplifier; and (3) protect the non–COVID-19 patients from infection, so as to maintain the ability to provide essential non–COVID-19 health care.
3. Maintaining, augmenting, and stretching the hospital workforce.
4. Allocating limited healthcare resources in a rational, ethical, and organized way so as to do the greatest good for the greatest number.

Specific Priority Actions to Be Taken

To implement the priority goals above, hospitals should undertake the following specific actions:

1. Employing a comprehensive and realistic planning process:
   - Employ at least 1 full-time hospital emergency manager in each hospital.
   - Dedicate a full-time infection prevention practitioner to work on infection prevention

aspects of the preparations, including education, training, and exercises.

- Designate a medical director to work closely with the emergency manager and infection prevention practitioner.
- Create a pandemic preparedness committee (or use an existing emergency management committee) that includes representatives of all clinical and support departments as well as senior administrators.
- Participate in a local healthcare coalition, which includes neighboring hospitals, local public health agencies, and emergency management. Members of multi-hospital health systems should integrate system-wide planning with local planning with other local hospitals.
- We do not yet have modeling tools or planning assumptions for COVID-19. CDC has developed FluSurge 2.0, which can be used in conjunction with HHS planning assumptions to guide planning for both a moderate and severe pandemic.[3] Note that the default assumptions in FluSurge are based on a 1968-like pandemic. To model a severe pandemic, FluSurge allows the assumed number of hospitalizations to be modified to correspond to the HHS planning assumptions for a severe pandemic.
- Be able to make 30% of licensed bed capacity available for COVID-19 patients on 1 week's notice. About 10-20% of a hospital's bed capacity can be mobilized within a few hours by expediting discharges, using discharge holding areas, converting single rooms to double rooms, and opening closed areas, if staffing is available. Another 10% can be obtained within a few days by converting flat spaces, such as lobbies, waiting areas, and classrooms.[4]
- Collaborate in regional plans to be able to make at least 200% of licensed bed capacity in the region available for COVID-19 patients on 2 weeks' notice.
- Use telephone and internet-based advice lines to reduce unnecessary visits to the hospital emergency department.

2. Limiting the nosocomial spread of the virus:

- The CDC has provided good technical guidance on infection control for COVID-19 in healthcare facilities.[5]
- Limit the accidental contamination of the hospital environment by implementing respiratory etiquette and by using simple surgical masks for everyone entering the facility (staff, patients, and visitors) during a pandemic. Assuming re-supply may be difficult during a pandemic, stockpile enough masks for 3 weeks.
- Prevent staff from getting infected by training healthcare workers on the use of personal protective equipment (PPE) and infection control procedures and by stockpiling a supply of PPE. PPE availability is currently limited, but hospitals should purchase what they can, recognizing that a local outbreak could last at least several weeks to several months. Given the preeminent need to protect healthcare workers, we feel the highest level of protection available should be used. We call for the use of N95 respirators for healthcare workers with direct contact with COVID-19 patients. This is in concert with the CDC's COVID-19 guidelines. Powered air-purifying respirators (PAPRs) should be available for use in high-risk aerosol-generating procedures.
- Limit the number of staff who are exposed to COVID-19 patients by cohorting (dedicated staff in dedicated units) (see Figure 1). Utilize overtime and long shifts for staff in the COVID-19 units to limit the number of staff needed. When possible, use staff who are immune (recovered) in the COVID-19 units.
- Prevent infected staff from working (except with COVID-19 patients) by tracking staff who are sick and testing for COVID-19, if possible, and keeping a log of staff who have had confirmed COVID-19.

Figure 1
Cohorting

3. Maintaining, augmenting, and stretching the hospital workforce:

- Vaccinate all staff for influenza to reduce the burden of that disease.
- Organize in-home childcare for well children of healthcare workers if schools are closed, using screened volunteers.
- Provide medical daycare for sick family members.
- Allay fear through open, honest, and transparent planning and careful training.
- Shift clinical staff to highest-need areas from areas that may be closed or quiet; employ “just in time” education and “buddy teaming.”
- Augment clinical staff with nontraditional personnel, employing “just in time” education and “buddy teaming.” Use (1) medical professionals with prior clinical experience (eg, administrators, researchers, retirees, etc); (2) related health professionals (eg, dentists, veterinarians, emergency medical technicians, etc); (3) nonclinical hospital personnel; and (4) nonclinical outside personnel. Specific training and operating procedures for each group must be created in advance.
- Coordinate plans with other hospitals in the region to recruit and use volunteers.

4. Allocating limited healthcare resources in a rational, ethical, and organized way so as to do the greatest good for the greatest number through deferral of nonemergency care and,

if necessary, institution of alternative patient care routines.

- Prioritize which services and types of procedures can be deferred, for how long, and with what consequences and create an alternative plan for patients who will be deferred. Create a process for refining and updating this plan as circumstances change. Create a process to track deferred patients.
- Plan for the graceful transition to contingency and crisis standards of care. In a severe pandemic, not all patients in need of intensive care will be able to be accommodated in the ICU. Normal staffing ratios and standard operating procedures will not be able to be maintained.
- Plan for alternative sites to provide ICU-like care within the hospital (eg, catheterization lab, catheterization recovery, OR, PACU, endoscopy units, etc).
- Implement contingency and crisis standards, which will be justified when conventional standards cannot be maintained despite the use of all available resources, including mutual aid arrangements. The legal and ethical framework for these decisions should be considered well in advance of a crisis. Alterations in hospital policy and procedures should be implemented by an active decision of the hospital leadership in consultation with the medical staff and civil authorities.
- Create criteria/clinical guidelines for use (or denial) of resource-intensive services (eg, admission, mechanical ventilation, invasive monitoring) based on national guidelines, such as the Crisis Standards of Care report[6] in regional collaboration with other hospitals.
- Establish a process for triage of patients competing for limited resources, including admission, early discharge, and life support. These decisions should not be made solely by 1 person. The criteria used to make these decisions should be created in advance and formally sanctioned by the medical staff and hospital administration.

How to Proceed

Although a COVID-19 pandemic seems all but inevitable, there is still uncertainty about its severity in the United States. Time will tell, but, in the meantime, hospitals should not delay. In the event of a pandemic, the predictable costs of not preparing, in human, societal, and political terms, would be huge. Decision makers at all levels—including hospital CEOs and their boards and state and federal officials—should consider these issues and how to proceed. Several of the first priority items (comprehensive and collaborative planning, discussing allocation of scarce resources, and planning education and training) take substantial time. Hospitals should begin these actions now.

References

1. Toner E, Waldhorn R. What hospitals should do to prepare for an influenza pandemic. *Biosecur Bioterror* 2006;4(4):397-402. http://www.centerforhealthsecurity.org/our-work/publications/2006/what-hospitals-should-do-to-prepare-for-an-influenza-pandemic. Accessed February 25, 2020
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3. Centers for Disease Control and Prevention. FluSurge 2.0. Reviewed August 22, 2016. https://www.cdc.gov/flu/pandemic-resources/tools/flusurge.htm. Accessed February 25, 2020.
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6. Hanfling D, Hick J, Stroud C, eds. Committee on Crisis Standards of Care. *Crisis Standards of Care: A Toolkit for Indicators and Triggers*. Washington, DC: National Academies Press;

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From: domweek on behalf of Department of Medicine weekly newsletter
To: domweek@u.washington.edu
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Date: Friday, February 28, 2020 3:49:27 PM
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UW Medicine
DEPARTMENT OF MEDICINE

DOM Week
February 28, 2020
News, information, and events of interest from the Department of Medicine

(If you have items for DOM week, please email amyf@uw.edu)

Awards
Leaders in Healthcare
The 2020 winners of the Seattle Business Magazine's Leaders in Healthcare Awards include Dr. **Nancy Davidson**, professor and head (Medical Oncology) who received the Gold Award for Outstanding Medical Group Executive and UW Medicine/VAPSHCS, including **Dmitry Levin**, research scientist (Cardiology) who won the Silver Award for Achievement in Medical Technology.


Call for nominations: Chair of Medicine and Fialkow Scholar Awards
We are currently accepting nominations for the Chair of Medicine Scholar Awards and the Fialkow Scholar Awards.

The Chair of Medicine Scholar Award is intended to provide support (primarily PI

salary support) for promising senior fellow/acting instructors to be appointed as physician-scientists at the rank of assistant professor.

The Fialkow Scholar Award is intended to recognize and support a junior faculty member (assistant or research assistant professor), with a primary appointment in the Department of Medicine, who shows outstanding promise as a scholar.

Nomination deadline for both awards: **Friday, March 13, 2020**

Education News

Health Care Huskies Program

Dr. **Filippo Milano**, assistant professor (Hematology) – who chose medical school over a pro soccer career as a 17-year-old in Italy – is now a mentor in the Health Care Huskies program, advising student-athletes on everything from what it's like to be a physician, the majors that will prepare them for health care careers, mastering medical school applications, and more.

Health Care Huskies is part of the Boundless Futures program (a career and leadership development program that helps prepare student-athletes for whatever comes next in their lives.)

Read more in the article: "Mentorship and internship program jumpstarts student-athletes' medical careers"

Dr. **Sigrid Collier**, acting instructor (Dermatology) was selected to be a Fogarty Global Health Fellow as part of the Northern Pacific Global Health Fellows Program.

Dr. **Daniel Leifer** (resident, Dermatology) won the ACGME David C Leach Award for creating "Derm links." This award recognizes residents and fellows who have fostered innovation and improvement in their residency programs, advanced humanism in medicine, and increased efficiency and emphasis on educational outcomes.

Research news

Dr. **Jim Boonyaratanakornkit**, acting instructor (Allergy and Infectious Diseases) has received a New Investigator Award from the American Society for Transplantation and Cellular Therapy (ASTCT).

Dr. **Karin Bornfeldt**, professor of medicine (Metabolism, Endocrinology and Nutrition), and pathology, has received an Outstanding Investigator Award from the National Heart, Lung, and Blood Institute for her R35 project "Identifying new strategies for prevention of cardiovascular complications of diabetes."

This award will support her NHLBI research program for seven years, with cumulative funding of more than $7.2 million over the award's duration. The Outstanding Investigator Awards are intended for investigators who have an outstanding record of research with contributions to NHLBI's research objectives. Co-investigators are Jay Heinecke, Baohai Shao and Jenny Kanter.

Read more on our website

Dr. **Susan Wong**, assistant professor (Nephrology) was awarded the Veteran Affairs Health Services Research and Development Award for Best Research Paper in 2019 for her *JAMA* publication, "Care Practices for Patients with Advanced Kidney Disease who Forgo Maintenance Dialysis."

This award honors a single article resulting from HSR&D funded research and representing the top 10% of research that has resulted in a substantial contribution to Veterans' care and new scientific evidence for policy and practice where knowledge is still uncertain. The award includes a research-related supplement of $25,000.

Faculty news

Dr. **Effie Wang Petersdorf**, professor (Medical Oncology) gave the E. Donnall Thomas Lecture "Immunogenetics of Hematopoietic Cell Transplantation" at the Transplantation & Cellular Therapy annual meeting.

Dr. **Michi Shinohara**, associate professor (Dermatology) has been selected as the next Michael Piepkorn Endowed Chair in Dermatology Research.

Photo: Dr. Michi Shinohara with her husband, Nic Compton, and her son and Dr. Paul Ngheim (far left) and Dr. Michael Piepkorn (far right).

In the news/literature

Dr. **Helen Chu**, assistant professor (Allergy and Infectious Diseases) is quoted in: "Are masks effective? Is it worse than the flu? A COVID-19 Q&A with a UW doctor" from *King 5 News*.

Dr. **Paul Drain**, assistant professor (Allergy and Infectious Diseases) is lead author of "Point-of-care HIV viral load testing combined with task shifting to improve treatment outcomes (STREAM): findings from an open-label, non-inferiority, randomised controlled trial" in the *Lancet HIV*. DOM co-authors are Ruanne Barnabas, Connie Celum and Lauren Violette.

Dr. **Laura Evans**, associate professor (Pulmonary, Critical Care and Sleep Medicine) is quoted in the article "Here's What Happens to the Body After Contracting the Coronavirus" in *Healthline*.

Dr. **Jordan Gauthier**, assistant professor, is lead author and Dr. **Cameron Turtle**, associate professor (Medical Oncology) is senior author of "Feasibility and efficacy of CD19-targeted CAR-T cells with concurrent ibrutinib for CLL after ibrutinib failure" in *Blood*. DOM co-authors are Mazyar Shadman, Stanley Riddell and David Maloney.

Dr. **Santiago Neme**, clinical assistant professor (Allergy and Infectious Diseases) is quoted in the article "Doctors debunk masks as protection against coronavirus" from *KOMO News*.

Dr. **Eliza Notaro**, chief resident, Dermatology) is lead author and Dr. **Katherine DeNiro**, acting assistant professor (Dermatology) is senior author of "Sexual harassment from patient to provider" in the *International Journal of Dermatology*. DOM co-authors are Vanessa Pascoe and Michi Shinohara.

Dr. **Ganesh Raghu**, professor (Pulmonary, Critical Care and Sleep Medicine) is co-senior author of "Diagnostic accuracy of transbronchial lung cryobiopsy for interstitial lung disease diagnosis (COLDICE): a prospective, comparative study" in the *Lancet Respiratory Medicine.*

Drs. **Simha Reddy**, clinical assistant professor and **Nancy Sugg**, associate professor (General Internal Medicine) talked to *KOMO News* for the story "Study finds half of homeless have a traumatic brain injury."

Dr. **Michi Shinohara**, associate professor (Dermatology) was a guest editor in *International Women's Journal of Dermatology* for a special issue about the gender gap in Dermatology: "The gender gap in academic dermatology and dermatology leadership: Supporting Successful Women Dermatologists"

Events of interest

Medicine Grand Rounds

Dr. **Paula Houston**, director, Healthcare Equity, UW Medicine, will present: "Advancing Healthcare Equity at UW Medicine" at Grand Rounds on March 5. Health Sciences Center T625 or stream via Zoom.

Fertility 101: Tips & Treatment Options

There is a new family-building fertility package discount available to any UW student or employee seeking fertility treatment at UW Medical Center-Roosevelt. The actual savings, which can be significant, will vary by type of treatment pursued. To learn more, attend "Fertility 101: Tips & Treatment Options" on **March 4** from 3:30-5pm at the Alder Hall Auditorium or read more from the WholeU

Weekly Calendar, March 2-6, 2020

MON **2**		
TUE **3**	7 - 8am	**AI Teaching Series (Journal Club) presents "Treatment of**

		Chronic Urticaria and Angiodema Unresponsive to H1-Antagonists" (South Lake Union Building E (SLU E-130B), 750 Republican St) Speaker: Jonathan Bernstein, MD, Professor, University of Cincinnati, Department of Internal Medicine
	7:30 - 8:30am	**Interventional Cardiology Conference** (UWMC SA6505)
	7:30 - 8:30am	**Electrophysiology Conference** (UWMC, RHC Conference Room EE301A)
	9 - 10am	**Center for Cardiovascular Biology Breakfast Club** (SLU Orin Smith Auditorium)
	12 - 1pm	**Rotating Cases: Fluid & Electrolyte / Pre-Glom / Fellow Journal Club** (UWMC - Rm EE424)
	12 - 1pm	**UWMC Chief of Medicine Rounds** (Health Sciences Center D209)
WED **4**	7:30 - 8:30am	**Cardiology Case Conference** (Health Sciences Center RR134)
	8 - 9am	**Dermatology Grand Rounds** (4245 Roosevelt Way N.E.) Title "Mohs Surgery for Treatment of Melanoma" Dr. Gwinn
	12 - 1pm	**Harborview Chief of Medicine Rounds** (Harborview Medical Center NJB 1107)
	12 - 1pm	**VA Chief of Medicine Rounds** (VAPSHCS Building 100, Basement Chapel room BB108)
	3:30 - 4:30pm	**LabMed Grand Rounds: Kelley Harris, PhD - Human Population Differentiation: From Ordinary Genetic Variation to Evolving Mutational Spectra** (Magnuson Health Sciences Center D209)
	4:30 - 6pm	**ID Conference** (Ninth and Jefferson, Room 1360) Case Conference Presenter: Jimmy Ma, MD Board Review Presenter: TBD
THU **5**	7 - 8am	**Exercise Physiology Study Group** (Health Sciences Center BB1311)
	8 - 9am	**Department of Medicine Grand Rounds** (Health Sciences Center T625) Stream via Zoom: https://washington.zoom.us/j/812197730 "Advancing Healthcare Equity at UW Medicine" Paula L. Houston, EdD Director, Healthcare Equity, UW Medicine
	12 - 1pm	**Nephrology Professor Rounds** (Harborview Medical Center NJB, 351)
	12 - 1pm	**UWMC Nephrology Professor Rounds** (UWMC - Rm EE424)
	1:30 - 2:30pm	**PCCSM Fellows Teaching Conference** (Harborview Medical Center NJB-595) zoom: https://washington.zoom.us/j/9449102358
	3:30 - 4:30pm	**Endocrine Teaching Conference: Journal Club with Dr Elaine Ding and Dr Katya Rubinow** (Room: E132A+B, 4245 Roosevelt Way, Seattle, WA)
	4:30 - 5:30pm	**Renal Transplant Biopsy Conference** (University Of

		Washington Medical Center NE110K)
	4:30 - 5:30pm	**Endocrine Teaching Conference: Case Management with Dr Kate Weaver** (Room: E132A+B, 4245 Roosevelt Way, Seattle, WA)
FRI **6**	7 - 9am	**Frontiers** (UW Medical Center, HSC K-069) 7:00 - 7:30AM | UWHSC | K-069 **Therapeutic Endoscopy Clinical Case Conference** Moderator: Brandon Dickinson, Adam Templeton, Bryan Balmadrid 7:30 - 9:00AM | UWHSC | K-069 **Fellows' Seminar** **Manometry Testing Principles** Faculty: Susan McCormick
	7:30 - 8:30am	**Cardiovascular Grand Rounds** (Health Sciences Center T625) Please visit cardiology.uw.edu to view upcoming speakers and access past presentations.
	8 - 10am	**Renal Grand Rounds** (Northwest Kidney Center, 700 Broadway, Turner Conf Rm, Seattle)
	12 - 1pm	**UWMC Transplant Grand Rounds** (University Medical Center EE424)
	12:30 - 1:30pm	**Medical Genetics Seminar** (K-069) **Naresh Doni Jayavelu, PhD** Senior Fellow Division of Medical Genetics
	1 - 2pm	**ICU Education Conference** (UWMC SA6434)

(*The Department of Medicine events calendar is available online and is updated throughout the week.)*

Coming up

GME Parents Event

GME Trainees and their families are invited to join for a drop-in playtime at Wunderkind! Meet other trainee families, enjoy coffee and light snacks and enjoy playing with the large DUPLO and LEGO stations. **Mar. 14**, 9am – 1pm. Open to all GME Residents & Fellows and their families, in addition to members of the GME Parenthood Peer Mentorship Program. Advanced registration required by March 10.

Spring Program Director Development Series: Physician Well Being and Quality Improvement & Patient Safety

Faculty are invited to learn about using mindfulness to improve learning and manage stress from Dr. Tony Back and participate in a Quality Improvement Bootcamp led by Dr. Nick Meo. Both sessions will include significant small group work, as a result only in-person attendance is provided. Open to all faculty members, priority given to Program Directors, Associate or Assistant Program Directors and key faculty. **Mar. 25** or **Apr. 24**, 9am – 4pm, UW South Lake Union. Advance registration required by Mar. 25.

2020 PNW Palliative Care Conference
April 27-28, Lynnwood Convention Center. Keynote: “Promoting Improved Family Caregiver Health Literacy,” Elaine Wittenberg, California State University Los Angeles. Event co-directors: Rashmi Sharma, associate professor (General Internal Medicine) and Theresa Braungardt (Valley Medical Center). Registration is now open. For more information, please visit their website.

Leadership Development Series
Registration is currently open for the second session in the Faculty Leadership Development Series – Strategies for Effective Communication – on **April 27**, 8:30am-12pm, HSB T550. In this session we will focus on understanding the role of fundamental attribution error, learning core dialogue skills, and creating a plan to apply these skills to specific challenges.

Faculty Development Day: Well-Being
All UWSOM faculty are welcome to attend the 20th Annual Faculty Development Day to learn practical skills to support building resilience and compassion in your work and home life. Topics include looking at emotions and our neurobiological response to stress and threats and ways to take control of our responses, building community and connections, your own well-being and reconnecting to what drives you in your lives. Breakfast and lunch will be provided. **May 26**, 8:30am-3pm, Center for Urban Horticulture. Please register for this event.

Senior Scholarship Day
The DOM and IM Residency Program will host the 3rd annual Senior Scholarship Day on **June 11, 2020**. Approximately 20-25 graduating residents will summarize their research and scholarship through oral and poster presentations. The event will take place immediately after Grand Rounds at South Campus Center. Audience members will select award recipients in the areas of Impact, Innovation, and Presentation Style.

Pacific Northwest Sepsis Conference
With an international list of conference speakers all experts in the area of sepsis care, attendees will gain a better understanding of the different populations affected by sepsis. **June 15-16**, 2020, Kane Hall. More information and to register.

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From: John B. Lynch
To: Duchin, Jeff; Kay, Meagan; Kawakami, Vance
Subject: exposures in hospitals
Date: Sunday, March 1, 2020 7:12:04 AM

Good morning my friends,

Quick update:

- Large Evergreen exposure (you are well aware)
- Large Valley exposure (pretty sure you are aware). We developed a plan last night, gong to isolate as many HCW as possible, but can't keep ICU open without that exposed pool. So, for the moment, these medium risk individuals are at work and wil be conducting 2x daily health screening. More to come today.
- HMC: last night I learned about a death in a pt presenting with sepsis from Life Center Kirkland eartlier this week. My assumption is that he had COVID-19. As of 5 minutes ago, I have a symptomatic ICU physician who took care of him. We are working on mitigation today. I suspect that we will not be able to follow current CDC recs for exposed HCWs either. We are going to try to get swabs on the doc now and path is trying to get tissue to test.

As you migh imagine, I am very concerned about the hospitals at this point.

Available to discuss anytime if helpful. You have my number.

John

From:	CSTE Emergency Response
To:	CSTE Emergency Response
Cc:	CSTE Novel Coronavirus 2019
Subject:	CSTE COVID-19 Response | Daily AM Message for Mar. 2 (incl. Feb. 29 Call Docs, Daily and Weekly Key Points, Updated Guidance List, and more)
Date:	Monday, March 2, 2020 5:24:24 AM
Attachments:	image001.png image002.png ATTACHMENT1_ReportingUpdates_2020March1.docx ATTACHMENT2_PUIandCaseReportForm_2020March1.pdf ATTACHMENT3_PUIandCaseReport_DataDictionary_2020March1.pdf ATTACHMENT4_PUIandCaseReport_Instructions_2020March1.pdf ATTACHMENT5_PHLIPMessageIDInstructions_2020March1.pdf CDC_COVID-19_Daily Key Points__2_29_2020_FINAL[4].pdf CDC_COVID-19 Weekly Key Messages__3-1-20_FINAL.pdf CN -- Notification and Access for Persons Detained for Medical Reasons (2020) recd eh feb 24[2].pdf COVID-19_GuidanceList_01MAR20[1].pdf FinalInterimCleaningGuidanceforPersonsUnderQuarantineforCOVID19_030120.pdf

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Sent to State Epidemiologists, Deputy State Epidemiologists, CLUE, Infectious Disease Points of Contact, and the CSTE Executive Board

Good morning,

Please see below for today's AM collection of COVID-19 information, gathered for your awareness:

- Documents from Feb. 29 5:00 pm Update Call [Attachments]
  - The following message is from the CDC COVID-19 Epidemiology Task Force:

    Thank you for your continued partnership in the ongoing emergency response to COVID-19. The documents attached to this email provide information that aligns with what was shared by CDC during the 5 pm ET CSTE call on Saturday, February 29th, including:
    - Confirmation of a jurisdiction's "Phase 2" status for reporting PUI and cases
    - Updates to the PUI and Case Report Form
    - Updates for the status of historical PUI data imports into DCIPHER
    - Clarifications to the CDC reporting process for PUI/Case Report Forms and lab findings
    - Management of the PHLIP laboratory reporting process
    - Jurisdiction assistance for avoiding and overcoming major issues

The noted changes are scheduled to go into effect at **5 pm ET, Sunday, March 1, 2020.**

Please find attached the following five documents:
- *Attachment 1:* PUI, presumptive positive case, and laboratory-confirmed case reporting updates and clarifications
- *Attachment 2:* Updated PUI and Case Report Form
- *Attachment 3:* Updated PUI and Case Report Form data dictionary
- *Attachment 4:* Updated PUI and Case Report Form instructions
- *Attachment 5:* PHLIP Message Instructions

We appreciate your ongoing collaboration. For questions, please email eocevent118@cdc.gov.

Best,
CDC COVID-19 Epidemiology Task Force

- CDC Daily Key Points [Attachment]
  - for Saturday, February 29, 2020
- CDC Weekly Key Points [Attachment]
  - for Sunday, March 1, 2020
- CDC Consular Notification Guidance (FAQs) Regarding Foreign Nationals [Attachment]
- CDC COVID-19 Guidance List [Attachment]
  - Updated March 1, 2020
- Interim Cleaning Recommendations for Facilities Housing Persons Under Quarantine for COVID-19 [Attachment]
  - Updated February 29, 2020
- New CDC Landing Pages for Specific Response Groups [Links]
  - Resources for Health Departments
  - Resources for Healthcare Facilities
  - Laboratories

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CSTE
Council of State and Territorial Epidemiologists
Emergency Preparedness & Response Mailbox
Business Hours Line: 770.458.3811
After-Hours Line: 678.256.3945

CSTE

Emergency Preparedness & Response

Coronavirus Disease (COVID-19)


CSTE

Dear state and territorial partners:

Thank you for your continued partnership in the ongoing emergency response to COVID-19. The information included below aligns with what was shared by CDC during the 5 pm ET CSTE call on Saturday, February 29th regarding: 1) confirming a jurisdiction's 'Phase 2' status for reporting PUI and cases; 2) updates to the PUI and Case Report Form; 3) an update on the status of historical PUI data imports into DCIPHER; 4) clarifications to the CDC reporting process for PUI/Case Report Forms and lab findings; 5) management of the PHLIP laboratory reporting process; and 6) major avoidable issues we hope to overcome with your assistance. We plan for the noted changes to go into effect at **5 pm ET, Sunday, March 1.**

Jurisdictional 'Phase 2' Status

As we have previously outlined, jurisdictions need to be able to do several tasks before they can move into 'Phase 2'. These include assessing ill persons and determining PUI status; assigning unique identifiers to PUI and cases at the reporting jurisdiction level; and reporting PUI and cases of COVID-19 using a brief, combined form.

Given the need to maintain timely, actionable data at the national level, and process laboratory results at CDC for initial or confirmatory testing, **we anticipate that all jurisdictions will be onboarded to 'Phase 2' during the week of March 2.** As soon as your jurisdiction is able to confirm its 'Phase 2' status, please email eocevent118@cdc.gov.

As part of the 'Phase 2' rollout, CDC needs to better understand each jurisdiction's plan for providing data to CDC for the PUI and Case Report Form via DCIPHER, an electronic PUI and case reporting system. We request that each jurisdiction provides a list of ≤5 DCIPHER users before **Monday, March 2 at 5pm ET,** if they have not already done so. In addition, we ask that jurisdictions confirm their intent to input data on PUI and case-patients directly into the DCIPHER platform (preferred option) or if alternative arrangements need to be made to send data to CDC. Please email eocevent118@cdc.gov with the requested information by **March 2 at 5pm ET**.

Updates to PUI and Case Report Form on CDC's Website

On the PUI and Case Report Form included in the CSTE email on Wednesday, February 26th, there were 2 'current status of person' options: "person under investigation" or "laboratory-confirmed case." Given increased laboratory capacity at the state and local level to test for the virus that causes COVID-19 and the need to send presumptive positive specimens to CDC for confirmatory testing, there will now be 5 status classifications.

1. PUI, testing pending*
2. PUI, tested negative*
3. Presumptive case (positive local test), confirmatory testing pending†
4. Presumptive case (positive local test), confirmatory testing negative†
5. Laboratory-confirmed case†

**Testing conducted by local lab or CDC lab*
† At this time, all confirmatory testing occurs at CDC

We have also added critical laboratory testing result fields at the end of the PUI and Case Report Form to reflect COVID-19 laboratory test results from state or local laboratories and CDC. CDC will work towards populating our laboratory results into the CDC result field for each specimen sent to us so that results can be viewed in DCIPHER as they are resulted and communicated to individual jurisdictions.

These updates to the PUI and Case Report Form, as well as data dictionary and instructions, can be found in Attachments 2-4, and were made available on CDC's website as of March 1, 2020.

Historical PUI Data Imported into DCIPHER

As of February 28, data reported to CDC on PUI, presumptive cases, and laboratory-confirmed cases have been made available in DCIPHER.

- Jurisdictions in 'Phase 2' are now able to go into the DCIPHER platform to view and edit existing records of PUI, presumptive positive, and laboratory-confirmed cases, as their status changes or more data become available.
- Jurisdictions in 'Phase 1' should continue to call the EOC Watch Desk at 770-488-7100 to update information on existing PUI, presumptive positive, or laboratory-confirmed cases of COVID-19.

CDC Reporting Process for PUI/Case Reports and Lab Findings

For reporting jurisdictions that have the capacity to do their own testing:

For jurisdictions that are in 'Phase 2':

1. The jurisdiction should enter all PUIs or Presumptive Cases (persons with a positive test performed locally without CDC lab confirmation*) into DCIPHER with the jurisdiction-issued nCoV ID, unless other arrangements to transmit data have been made and approved by CDC.
2. If a specimen is tested locally and is **NEGATIVE**:
    a. Please update the person's disposition to 'PUI, tested negative' in DCIPHER.
3. If a specimen is tested locally and is **POSITIVE**:
    a. Call the EOC Watch Desk/PUI desk at **770-488-7100** and notify CDC of the positive result. The specimen will be identified as a 'presumptive positive'* until the result is confirmed at CDC per the Emergency Use Agreement.
    b. On the call with CDC, please provide: (1) jurisdiction-issued nCoV ID and (2) a brief summary of the person's information that aligns with information collected and submitted on the PUI and Case Report Form.
    c. Send the specimen to CDC for confirmatory testing, labeled with the nCoV ID.
    d. Please also update the person's disposition in DCIPHER to "Presumptive Case, confirmatory testing pending"

For jurisdictions that are in 'Phase 1':

1. The jurisdictions should call the EOC Watch Desk/PUI desk at 770-488-7100 to receive a CDC-issued nCoV ID, and to complete a PUI and Case Report Form.
2. If a specimen is tested locally and is **NEGATIVE**:
    a. Please email eocevent118@cdc.gov and provide the nCoV ID and test result.
3. If a specimen is tested locally and is **POSITIVE**:
    a. Call the EOC Watch Desk/PUI desk at **770-488-7100** and notify them of the positive result. The specimen will be identified as a 'presumptive positive'* until the result is confirmed at CDC per the Emergency Use Agreement.
    b. On the call with CDC, please provide: (1) jurisdiction-issued nCoV ID and (2) a brief summary of the person's information that aligns with information collected on the PUI and Case Report form.
    c. Send the specimen to CDC for confirmatory testing, labeled with the nCoV ID.

For reporting jurisdictions that do not have testing capacity and are sending specimens to CDC for testing:

For jurisdictions that are in 'Phase 2':

1. The jurisdiction should enter all PUIs into DCIPHER with the jurisdiction-issued nCoV IDs, unless other arrangements to transmit data have been made and approved by CDC.
2. Please ensure the jurisdiction-issued nCoV ID is entered in the **alternative specimen ID** field on the 50.34/DASH form sent in with the specimen to CDC for testing.
3. Testing results will be returned to the state lab per current protocol.

For jurisdictions that are in 'Phase 1':

1. The jurisdiction should call the EOC Watch Desk/PUI desk at **770-488-7100** to obtain a CDC-issued nCoV ID number, and complete a PUI and Case Report Form.

2. Please make sure the CDC-issued nCoV ID is entered in the **alternative specimen ID** field on the 50.34/DASH form sent in with the specimen to CDC for testing.
3. Testing results will be returned to the state lab per current protocol.

Specimens from Presumptive Cases must be tested at CDC to change their disposition to 'Confirmed Case'. However, **local public health action is recommended for Presumptive Cases identified through local or state laboratory testing.*

Management of the PHLIP reporting process

CDC and APHL have been working with public health laboratories to add automated reporting of the novel coronavirus test results through their existing influenza reporting mechanism, which is most frequently PHLIP.

We ask that participating PHLIP labs begin including nCoV IDs within the lab test message reported through PHLIP. This will allow CDC to: (1) Match these records with persons reported into DCIPHER and (2) work with states to properly characterize the status of persons without existing records in DCIPHER. Information on how to include the nCoV ID in the message is available via APHL starting at the bottom of Page 4 (Attachment 5).

Major avoidable challenges we hope to overcome with your assistance

We recognize the challenges that public health emergencies bring. With your assistance, we hope to avoid the following challenges by following the processes outlined above:

1. Unclear data flow processes for jurisdictional data on PUI and case-patients to CDC
2. Laboratory samples that are not able to be linked with PUI or case-patients
3. Incorrect reports of national and state-level PUI and case burden

We appreciate your ongoing partnership. Please email eocevent118@cdc.gov with any questions regarding the PUI or case reporting process.

Best,
CDC COVID-19 Epidemiology Task Force

CDC 2019-nCoV ID: _____ Form Approved: OMB: 0920-1011 Exp. 4/23/2020

……PATIENT IDENTIFIER INFORMATION IS NOT TRANSMITTED TO CDC……

Patient first name _____ Patient last name _____ Date of birth (MM/DD/YYYY): ____/_____/_____

……PATIENT IDENTIFIER INFORMATION IS NOT TRANSMITTED TO CDC……

Human Infection with 2019 Novel Coronavirus
Person Under Investigation (PUI) and Case Report Form

Reporting jurisdiction: _____ Case state/local ID: _____
Reporting health department: _____ CDC 2019-nCoV ID: _____
Contact ID [a]: _____ NNDSS loc. rec. ID/Case ID [b]: _____

a. Only complete if case-patient is a known contact of prior source case-patient. Assign Contact ID using CDC 2019-nCoV ID and sequential contact ID, e.g., Confirmed case CA102034567 has contacts CA102034567 -01 and CA102034567 -02. [b]For NNDSS reporters, use GenV2 or NETSS patient identifier.

Interviewer information

Name of interviewer: Last _____ First_____

Affiliation/Organization: _____ Telephone _____ Email _____

Basic information

What is the current status of this person?
- ☐ PUI, testing pending*
- ☐ PUI, tested negative*
- ☐ Presumptive case (positive local test), confirmatory testing pending†
- ☐ Presumptive case (positive local test), confirmatory tested negative†
- ☐ Laboratory-confirmed case†

*Testing performed by state, local, or CDC lab.
†At this time, all confirmatory testing occurs at CDC

Report date of PUI to CDC (MM/DD/YYYY):
____/_____/_____

Report date of case to CDC (MM/DD/YYYY):
____/_____/_____

County of residence: _____
State of residence: _____

Ethnicity:
- ☐ Hispanic/Latino
- ☐ Non-Hispanic/ Latino
- ☐ Not specified

Sex:
- ☐ Male
- ☐ Female
- ☐ Unknown
- ☐ Other

Race (check all that apply):
- ☐ Asian
- ☐ Black
- ☐ White
- ☐ Other, specify: _____
- ☐ American Indian/Alaska Native
- ☐ Native Hawaiian/Other Pacific Islander
- ☐ Unknown

Date of birth (MM/DD/YYYY): ____/_____/_____
Age: _____
Age units(yr/mo/day): _____

Date of first positive specimen collection (MM/DD/YYYY):
____/_____/_____
☐ Unknown ☐ N/A

Did the patient develop pneumonia?
☐ Yes ☐ Unknown ☐ No

Did the patient have acute respiratory distress syndrome?
☐ Yes ☐ Unknown ☐ No

Did the patient have another diagnosis/etiology for their illness?
☐ Yes ☐ Unknown ☐ No

Did the patient have an abnormal chest X-ray?
☐ Yes ☐ Unknown ☐ No

Was the patient hospitalized?
☐ Yes ☐ No ☐ Unknown

If yes, admission date 1
___/___/___ (MM/DD/YYYY)
If yes, discharge date 1
__/___/____ (MM/DD/YYYY)

Was the patient admitted to an intensive care unit (ICU)?
☐ Yes ☐ No ☐ Unknown

Did the patient receive mechanical ventilation (MV)/intubation?
☐ Yes ☐ No ☐ Unknown
If yes, total days with MV (days)
_____

Did the patient receive ECMO?
☐ Yes ☐ No ☐ Unknown

Did the patient die as a result of this illness?
☐ Yes ☐ No ☐ Unknown

Date of death (MM/DD/YYYY):
____/_____/_____
☐ Unknown date of death

Symptoms present during course of illness:
- ☐ Symptomatic
- ☐ Asymptomatic
- ☐ Unknown

If symptomatic, onset date (MM/DD/YYYY):
____/_____/_____
☐ Unknown

If symptomatic, date of symptom resolution (MM/DD/YYYY):
____/_____/_____
☐ Still symptomatic ☐ Unknown symptom status
☐ Symptoms resolved, unknown date

Is the patient a health care worker in the United States? ☐ Yes ☐ No ☐ Unknown
Does the patient have a history of being in a healthcare facility (as a patient, worker or visitor) in China? ☐ Yes ☐ No ☐ Unknown
In the 14 days prior to illness onset, did the patient have any of the following exposures (check all that apply):
- ☐ Travel to Wuhan
- ☐ Travel to Hubei
- ☐ Travel to mainland China
- ☐ Travel to other non-US country specify:_____
- ☐ Household contact with another lab-confirmed COVID-19 case-patient
- ☐ Community contact with another lab-confirmed COVID-19 case-patient
- ☐ Any healthcare contact with another lab-confirmed COVID-19 case-patient ☐ Patient ☐ Visitor ☐ HCW
- ☐ Animal exposure
- ☐ Exposure to a cluster of patients with severe acute lower respiratory distress of unknown etiology
- ☐ Other, specify:_____
- ☐ Unknown

If the patient had contact with another COVID-19 case, was this person a U.S. case? ☐ Yes, nCoV ID of source case: _____ ☐ No ☐ Unknown ☐ N/A

Under what process was the PUI or case first identified? (check all that apply): ☐ Clinical evaluation leading to PUI determination
☐ Contact tracing of case patient ☐ Routine surveillance ☐ EpiX notification of travelers; if checked, DGMQID_____
☐ Unknown ☐ Other, specify:_____

CDC 2019-nCoV ID: _____ Form Approved: OMB: 0920-1011 Exp. 4/23/2020

Human Infection with 2019 Novel Coronavirus
Person Under Investigation (PUI) and Case Report Form

Symptoms, clinical course, past medical history and social history

Collected from (check all that apply): ☐ Patient interview ☐ Medical record review

During this illness, did the patient experience any of the following symptoms?	Symptom Present?
Fever >100.4F (38C)[c]	☐Yes ☐No ☐Unk
Subjective fever (felt feverish)	☐Yes ☐No ☐Unk
Chills	☐Yes ☐No ☐Unk
Muscle aches (myalgia)	☐Yes ☐No ☐Unk
Runny nose (rhinorrhea)	☐Yes ☐No ☐Unk
Sore throat	☐Yes ☐No ☐Unk
Cough (new onset or worsening of chronic cough)	☐Yes ☐No ☐Unk
Shortness of breath (dyspnea)	☐Yes ☐No ☐Unk
Nausea or vomiting	☐Yes ☐No ☐Unk
Headache	☐Yes ☐No ☐Unk
Abdominal pain	☐Yes ☐No ☐Unk
Diarrhea (≥3 loose/looser than normal stools/24hr period)	☐Yes ☐No ☐Unk
Other, specify:_____	

Pre-existing medical conditions? ☐ Yes ☐ No ☐ Unknown

Chronic Lung Disease (asthma/emphysema/COPD)	☐Yes	☐No	☐Unknown	
Diabetes Mellitus	☐Yes	☐No	☐Unknown	
Cardiovascular disease	☐Yes	☐No	☐Unknown	
Chronic Renal disease	☐Yes	☐No	☐Unknown	
Chronic Liver disease	☐Yes	☐No	☐Unknown	
Immunocompromised Condition	☐Yes	☐No	☐Unknown	
Neurologic/neurodevelopmental/intellectual disability	☐Yes	☐No	☐Unknown	(If YES, specify) _____
Other chronic diseases	☐Yes	☐No	☐Unknown	(If YES, specify) _____
If female, currently pregnant	☐Yes	☐No	☐Unknown	
Current smoker	☐Yes	☐No	☐Unknown	
Former smoker	☐Yes	☐No	☐Unknown	

Respiratory Diagnostic Testing

Test	Pos	Neg	Pend.	Not done
Influenza rapid Ag ☐ A ☐ B	☐	☐	☐	☐
Influenza PCR ☐ A ☐ B	☐	☐	☐	☐
RSV	☐	☐	☐	☐
H. metapneumovirus	☐	☐	☐	☐
Parainfluenza (1-4)	☐	☐	☐	☐
Adenovirus	☐	☐	☐	☐
Rhinovirus/enterovirus	☐	☐	☐	☐
Coronavirus (OC43, 229E, HKU1, NL63)	☐	☐	☐	☐
M. pneumoniae	☐	☐	☐	☐
C. pneumoniae	☐	☐	☐	☐
Other, Specify:_____	☐	☐	☐	☐

Specimens for COVID-19 Testing

Specimen Type	Specimen ID	Date Collected	State Lab Tested	State Lab Result	Sent to CDC	CDC Lab Result
NP Swab			☐		☐	
OP Swab			☐		☐	
Sputum			☐		☐	
Other, Specify: _____			☐		☐	

Additional State/local Specimen IDs: _____ _____ _____ _____ _____

2019-nCoV PUI and CRF Data Dictionary
Form used: 03_2019-nCoV_PUI_Case ReportForm_2020Feb29.docx
Last updated 20200229_11.00am

Questions	Variable Name	Values, Labels	Type
Reporting jurisdiction	state		Character
Reporting health department	healthdept		Character
Contact ID	contact_id		Character
Case state/local ID	local_id		Character
CDC 2019-nCoV ID	cdc_ncov2019_id		Character
NNDSS loc. Rec. ID/ Case ID	nndss_id		Character
Last name of interviewer	interviewer_ln		Character
First name of interviewer	interviewer_fn		Character
Affilliation/ Organization	interviewer_org		Character
Telephone number	interviewer_tele		Character
Email	interviewer_email		Character
What is the current status of this person?	current_status	1, PUI testing pending 2, PUI tested negative 3, Presumptive case (positive local test), confirmatory testing pending 4, Presumptive case (positive local test), confirmatory tested negative* 5, Laboratory-confirmed case*	Number
Report date of PUI to CDC (MM/DD/YYYY)	pui_cdcreport_dt		Date (mm/dd/yyyy)
Report date of case to CDC (MM/DD/YYYY)	case_cdcreport_dt		Date (mm/dd/yyyy)
County of residence	res_county		Character
State of residence	res_state		Character
Ethnicity	ethnicity	1, Hispanic/Latino 0, Non-Hispanic/Latino 9, Not specified	Number
Sex	sex	1, Male 2, Female 9,Unknown 3, Other	Number
Race (Check all that apply)			
Asian	race_asian	1, Yes	Number
American Indian/ Alaska Native	race_aian	1, Yes	Number
Black	race_black	1, Yes	Number
Native Hawaiian/ Other Pacific Islander	race_nhpi	1, Yes	Number
White	race_white	1, Yes	Number
Unknown	race_unk	1, Yes	Number
Other	race_other	1, Yes	Number
Other specified race	race_spec		Character
Date of birth (MM/DD/YYYY)	dob		Date (mm/dd/yyyy)
Age	age		Number
Age units (yr/mo/days):	ageunit	1, Years 2, Months 3, Days	Number
Date of first positive specimen collection (MM/DD/YYYY)	pos_spec_dt		Date (mm/dd/yyyy)
Check if date unknown	pos_spec_unk	1, Yes	Number
Check if date not applicable	pos_spec_na	1, Yes	Number
Did the patient develop pneumonia?	pna_yn	1, Yes 0, No 9, Unknown	Number
Did the patient have acute respiratory distress syndrome?	acuterespdistress_yn	1, Yes 0, No 9, Unknown	Number
Did the patient have another diagnosis/etiology for their illness?	diagother	1, Yes 0, No 9, Unknown	Number
Did the patient have an abnormal chest X-ray?	abxchest_yn	1, Yes 0, No 9, Unknown	Number
Symptoms present during course of illness:	sympstatus	1, Symptomatic 0, Asymptomatic 9, Unknown	Number
If symptomatic, onset date (MM/DD/YYYY)	onset_dt		Date (mm/dd/yyyy)
If symptomatic, onset date - unknown	onset_unk	1, Yes	Number
If symptomatic, date of symptom resolution (MM/DD/YYYY)	symp_res_dt		Date (mm/dd/yyyy)
If symptomatic, state of resolution	symp_res_yn	1, Still symptomatic 0, Symptoms resolved, unknown date 9, Unknown symptom status	Number
Was the patient hospitalized?	hosp_yn	1, Yes 0, No 9, Unknown	Number
If yes, admission date 1 (MM/DD/YYYY)	adm1_dt		Date (mm/dd/yyyy)
If yes, discharge date 1 (MM/DD/YYYY)	dis1_dt		Date (mm/dd/yyyy)
Was the patient admitted to an intensive care unit (ICU)?	icu_yn	1, Yes 0, No 9, Unknown	Number
Did the patient receive mechanical ventilation (MV)/intubation?	mechvent_yn	1, Yes 0, No 9, Unknown	Number
If yes, total days with MV (days)	mechvent_dur		Number
Did the patient receive extracorporeal membrane oxygenation (ECMO)?	ecmo_yn	1, Yes 0, No 9, Unknown	Number
Did the patient die as a result of this illness?	death_yn	1, Yes 0, No 9, Unknown	Number
Date of Death (MM/DD/YYYY)	death_dt		Date (mm/dd/yyyy)
Date of Death Unknown	death_unk	1, Yes	Number
Is the patient a health care worker in the United States?	hc_work_yn	1, Yes 0, No 9, Unknown	Number
Does the patient have a history of being in a healthcare facility (as a patient, worker or visitor) in China?	hc_work_china_yn	1, Yes 0, No 9, Unknown	Number

In the 14 days prior to illness onset, did the patient have any of the following exposures (check all that apply):

Travel to Wuhan	exp_wuhan	1, Yes	Number
Travel to Hubei	exp_hubei	1, Yes	Number
Travel to mainland China	exp_china	1, Yes	Number
Travel to other non-US country	exp_othcountry	1, Yes	Number
If yes, specify	exp_othcountry_spec		Character
Household contact with another lab-confirmed COVID-19 case-patient	exp_house	1, Yes	Number
Community contact with another lab-confirmed COVID-19 case-patient	exp_community	1, Yes	Number
Any healthcare contact with another lab-confirmed COVID-19 case-patient	exp_health	1, Yes	Number
Healthcare contact with another lab-confirmed COVID-19 case-patient -- patient	exp_health_pt	1, Yes	Number
Healthcare contact with another lab-confirmed COVID-19 case-patient -- visitor	exp_health_vis	1, Yes	Number
Healthcare contact with another lab-confirmed COVID-19 case-patient -- healthcare worker	exp_health_hcw	1, Yes	Number
Animal exposure	exp_animal	1, Yes	Number
Exposure to a cluster of patients with severe acute lower respiratory distress of unknown etiology	exp_cluster	1, Yes	Number
Other	exp_other	1, Yes	Number
If other, specify	exp_other_spec		Character
Unknown	exp_unk	1, Yes 1, Yes 0, No 9, Unknown	Number
If the patient had contact with another COVID-19 case, was this person a U.S. case?	cont_lab_us	5, NA	Number
If yes, specify nCoV ID of source case	cdc_ncov2019_sourceid_2		Character
Under what process was the PUI or case first identified? (check all that apply):			
Clinical evaluation leading to PUI determination	process_pui	1, Yes	Number
Contact tracing of case patient	process_cont	1, Yes	Number
Routine surveillance	process_surv	1, Yes	Number
EpiX notification of travelers	process_epix	1, Yes	Number
If checked, DGMQID	process_dgmqid		Character
Unknown	process_unk	1, Yes	Number
Other	process_other	1, Yes	Number
If other, specify	process_other_spec		Character
Collected from (check all that apply):			
Patient interview	collect_ptinterview	1, Yes	Number
Medical record review	collect_medchart	1, Yes	Number
During this illness, did the patient experience any of the following symptoms?			
Fever >100.4F (38C)	fever_yn	1, Yes 0, No 9, Unknown	Number
Subjective fever (felt feverish)	sfever_yn	1, Yes 0, No 9, Unknown	Number
Chills	chills_yn	1, Yes 0, No 9, Unknown	Number
Muscle aches (myalgia)	myalgia_yn	1, Yes 0, No 9, Unknown	Number
Runny nose (rhinorrhea)	runnose_yn	1, Yes 0, No 9, Unknown	Number
Sore throat	sthroat_yn	1, Yes 0, No 9, Unknown	Number
Cough (new onset or worsening of chronic cough)	cough_yn	1, Yes 0, No 9, Unknown	Number
Shortness of breath (dyspnea)	sob_yn	1, Yes 0, No 9, Unknown	Number
Nausea or Vomiting	nauseavomit_yn	1, Yes 0, No 9, Unknown	Number
Headache	headache_yn	1, Yes 0, No 9, Unknown	Number
Abdominal pain	abdom_yn	1, Yes 0, No 9, Unknown	Number
Diarrhea (≥3 loose/looser than normal stools/24hr period)	diarrhea_yn	9, Unknown	Number
Other symptoms - 1	othsym1_yn	1, Yes	Number
Other symptoms - 1, specify:	othsym1_spec		Character
Other symptoms - 2	othsym2_yn	1, Yes	Number
Other symptoms - 2, specify:	othsym2_spec		Character
Other symptoms - 3	othsym3_yn	1, Yes	Number
Other symptoms - 3, specify:	othsym3_spec		Character
Pre-existing medical conditions?	medcond_yn	1, Yes 0, No 9, Unknown	Number
Chronic lung disease (asthma/emphysema/COPD)	cld_yn	1, Yes 0, No 9, Unknown	Number
Diabetes Mellitus	diabetes_yn	1, Yes 0, No 9, Unknown	Number
Cardiovascular disease	cvd_yn	1, Yes 0, No 9, Unknown	Number
Chronic renal disease	renaldis_yn	1, Yes 0, No 9, Unknown	Number
Liver disease	liverdis_yn	1, Yes 0, No 9, Unknown	Number
Immunocompromised condition	immsupp_yn	1, Yes 0, No 9, Unknown	Number
Neurologic/neurodevelopmental/intellectual disability	neuro_yn	9, Unknown	Number
If yes, specify	neuro_spec		Character

		1, Yes	
		0, No	
Other chronic diseases	otherdis_yn	9, Unknown	Number
If yes, specify	otherdis_spec		Character
		1, Yes	
		0, No	
If female, currently pregnant	pregnant_yn	9, Unknown	Number
		1, Yes	
		0, No	
Current smoker	smoke_curr_yn	9, Unknown	Number
		1, Yes	
		0, No	
Former smoker	smoke_former_yn	9, Unknown	Number
		1, Positive	
		2, Negative	
		3, Pending	
Influenza A Rapid Ag	resp_flua_ag	4, Not Done	Number
		1, Positive	
		2, Negative	
		3, Pending	
Influenza B Rapid Ag	resp_flub_ag	4, Not Done	Number
		1, Positive	
		2, Negative	
		3, Pending	
Influenza A PCR	resp_flua_pcr	4, Not Done	Number
		1, Positive	
		2, Negative	
		3, Pending	
Influenza B PCR	resp_flub_pcr	4, Not Done	Number
		1, Positive	
		2, Negative	
		3, Pending	
RSV	resp_rsv	4, Not Done	Number
		1, Positive	
		2, Negative	
		3, Pending	
H. metapneumovirus	resp_hm	4, Not Done	Number
		1, Positive	
		2, Negative	
		3, Pending	
Parainfluenza (1-4)	resp_pi	4, Not Done	Number
		1, Positive	
		2, Negative	
		3, Pending	
Adenovirus	resp_adv	4, Not Done	Number
		1, Positive	
		2, Negative	
		3, Pending	
Rhinovirus/enterovirus	resp_rhino	4, Not Done	Number
		1, Positive	
		2, Negative	
		3, Pending	
Coronavirus (OC43, 229E, HKU1, NL63)	resp_cov	4, Not Done	Number
		1, Positive	
		2, Negative	
		3, Pending	
M. pneumoniae	resp_mp	4, Not Done	Number
		1, Positive	
		2, Negative	
		3, Pending	
C. pneumoniae	resp_rcp	4, Not Done	Number
		1, Positive	
		2, Negative	
		3, Pending	
Other positive pathogens	othrp	4, Not Done	Number
If yes, specify	othrp_spec		Character
NP Swab: Local Specimen ID - 1	spec_npswab1id		Character
NP Swab: Collection date - 1	spec_npswab1_dt		Date (mm/dd/yyyy)
NP Swab: State Lab Tested - 1	spec_npswab1state	1, Yes	Number
		1, Positive	
		2, Negative	
		3, Pending	Number
		4, Not Done	
NP Swab: State Result - 1	spec_npswab1Stateresult	5, Indeterminate	
NP Swab: Sent to CDC - 1	spec_npswab1cdc	1, Yes	Number
		1, Positive	
		2, Negative	
		3, Pending	Number
		4, Not Done	
NP Swab: CDC Result - 1	spec_npswab1CDCresult	5, Indeterminate	
NP Swab: Local Specimen ID - 2	spec_npswab2id		Character
NP Swab: Collection date - 2	spec_npswab2_dt		Date (mm/dd/yyyy)
NP Swab: State Lab Tested - 2	spec_npswab2state	1, Yes	Number
		1, Positive	
		2, Negative	
		3, Pending	Number
		4, Not Done	
NP Swab: State Result - 2	spec_npswab2Stateresult	5, Indeterminate	
NP Swab: Sent to CDC - 2	spec_npswab2cdc	1, Yes	Number
		1, Positive	
		2, Negative	
		3, Pending	Number
		4, Not Done	
NP Swab: CDC Result - 2	spec_npswab2CDCresult	5, Indeterminate	
NP Swab: Local Specimen ID - 3	spec_npswab3id		Character
NP Swab: Collection date - 3	spec_npswab3_dt		Date (mm/dd/yyyy)
NP Swab: State Lab Tested - 3	spec_npswab3state	1, Yes	Number

		1, Positive 2, Negative 3, Pending 4, Not Done	Number
NP Swab: State Result - 3	spec_npswab3Stateresult	5, Indeterminate	
NP Swab: Sent to CDC - 3	spec_npswab3cdc	1, Yes	Number
		1, Positive 2, Negative 3, Pending 4, Not Done	Number
NP Swab: CDC Result - 3	spec_npswab3CDCresult	5, Indeterminate	
OP Swab: Local Specimen ID - 1	spec_opswab1id		Character
OP Swab: Collection date - 1	spec_opswab1_dt		Date (mm/dd/yyyy)
OP Swab: State Lab Tested - 1	spec_opswab1state	1, Yes	Number
		1, Positive 2, Negative 3, Pending 4, Not Done	Number
OP Swab: State Result - 1	spec_opswab1Stateresult	5, Indeterminate	
OP Swab: Sent to CDC - 1	spec_opswab1cdc	1, Yes	Number
		1, Positive 2, Negative 3, Pending 4, Not Done	Number
OP Swab: CDC Result - 1	spec_opswab1CDCresult	5, Indeterminate	
OP Swab: Local Specimen ID - 2	spec_opswab2id		Character
OP Swab: Collection date - 2	spec_opswab2_dt		Date (mm/dd/yyyy)
OP Swab: State Lab Tested - 2	spec_opswab2state	1, Yes	Number
		1, Positive 2, Negative 3, Pending 4, Not Done	Number
OP Swab: State Result - 2	spec_opswab2Stateresult	5, Indeterminate	
OP Swab: Sent to CDC - 2	spec_opswab2cdc	1, Yes	Number
		1, Positive 2, Negative 3, Pending 4, Not Done	Number
OP Swab: CDC Result - 2	spec_opswab2CDCresult	5, Indeterminate	
OP Swab: Local Specimen ID - 3	spec_opswab3id		Character
OP Swab: Collection date - 3	spec_opswab3_dt		Date (mm/dd/yyyy)
OP Swab: State Lab Tested - 3	spec_opswab3state	1, Yes	Number
		1, Positive 2, Negative 3, Pending 4, Not Done	Number
OP Swab: State Result - 3	spec_opswab3Stateresult	5, Indeterminate	
OP Swab: Sent to CDC - 3	spec_opswab3cdc	1, Yes	Number
		1, Positive 2, Negative 3, Pending 4, Not Done	Number
OP Swab: CDC Result - 3	spec_opswab3CDCresult	5, Indeterminate	
Sputum: Local Specimen ID - 1	spec_sputum1id		Character
Sputum: Collection date - 1	spec_sputum1_dt		Date (mm/dd/yyyy)
Sputum: State Lab Tested - 1	spec_sputum1state	1, Yes	Number
		1, Positive 2, Negative 3, Pending 4, Not Done	Number
Sputum: State Result - 1	spec_sputum1Stateresult	5, Indeterminate	
Sputum: Sent to CDC - 1	spec_sputum1cdc	1, Yes	Number
		1, Positive 2, Negative 3, Pending 4, Not Done	Number
Sputum: CDC Result - 1	spec_sputum1CDCresult	5, Indeterminate	
Sputum: Local Specimen ID - 2	spec_sputum2id		Character
Sputum: Collection date - 2	spec_sputum2_dt		Date (mm/dd/yyyy)
Sputum: State Lab Tested - 2	spec_sputum2state	1, Yes	Number
		1, Positive 2, Negative 3, Pending 4, Not Done	Number
Sputum: State Result - 2	spec_sputum2Stateresult	5, Indeterminate	
Sputum: Sent to CDC - 2	spec_sputum2cdc	1, Yes	Number
		1, Positive 2, Negative 3, Pending 4, Not Done	Number
Sputum: CDC Result - 2	spec_sputum2CDCresult	5, Indeterminate	
Sputum: Local Specimen ID - 3	spec_sputum3id		Character
Sputum: Collection date - 3	spec_sputum3_dt		Date (mm/dd/yyyy)
Sputum: State Lab Tested - 3	spec_sputum3state	1, Yes	Number
		1, Positive 2, Negative 3, Pending 4, Not Done	Number
Sputum: State Result - 3	spec_sputum3Stateresult	5, Indeterminate	
Sputum: Sent to CDC - 3	spec_sputum3cdc	1, Yes	Number
		1, Positive 2, Negative 3, Pending 4, Not Done	Number
Sputum: CDC Result - 3	spec_sputum3CDCresult	5, Indeterminate	
Other specimen type - 1	spec_otherspecimen1_yn	1, Yes	Number

If yes, specify type - 1	spec_otherspecimen1_spec		Character
Other: Local Specimen ID - 1	spec_otherspecimen1id		Character
Other: Collection date - 1	spec_otherspecimen1_dt		Date (mm/dd/yyyy)
Other: State Lab Tested - 1	spec_otherspecimen1state	1, Yes	Number
		1, Positive	
		2, Negative	
		3, Pending	Number
		4, Not Done	
Other: State Result - 1	spec_otherspecimen1Stateresult	5, Indeterminate	
Other: Sent to CDC - 1	spec_otherspecimen1cdc	1, Yes	Number
		1, Positive	
		2, Negative	
		3, Pending	Number
		4, Not Done	
Other: CDC Result - 1	spec_otherspecimen1CDCresult	5, Indeterminate	
Other specimen type - 2	spec_otherspecimen2_yn	1, Yes	Number
If yes, specify type - 2	spec_otherspecimen2_spec		Character
Other: Local Specimen ID - 2	spec_otherspecimen2id		Character
Other: Collection date - 2	spec_otherspecimen2_dt		Date (mm/dd/yyyy)
Other: State Lab Tested - 2	spec_otherspecimen2state	1, Yes	Number
		1, Positive	
		2, Negative	
		3, Pending	Number
		4, Not Done	
Other: State Result - 2	spec_otherspecimen2Stateresult	5, Indeterminate	
Other: Sent to CDC - 2	spec_otherspecimen2cdc	1, Yes	Number
		1, Positive	
		2, Negative	
		3, Pending	Number
		4, Not Done	
Other: CDC Result - 2	spec_otherspecimen2CDCresult	5, Indeterminate	
Other specimen type - 3	spec_otherspecimen3_yn	1, Yes	Number
If yes, specify type - 3	spec_otherspecimen3_spec		Character
Other: Local Specimen ID - 3	spec_otherspecimen3id		Character
Other: Collection date - 3	spec_otherspecimen3_dt		Date (mm/dd/yyyy)
Other: State Lab Tested - 3	spec_otherspecimen3state	1, Yes	Number
		1, Positive	
		2, Negative	
		3, Pending	Number
		4, Not Done	
Other: State Result - 3	spec_otherspecimen3Stateresult	5, Indeterminate	
Other: Sent to CDC - 3	spec_otherspecimen3cdc	1, Yes	Number
		1, Positive	
		2, Negative	
		3, Pending	Number
		4, Not Done	
Other: CDC Result - 3	spec_otherspecimen3CDCresult	5, Indeterminate	
Additional State/local Specimen IDs:	lab_local_id1		Character
Any additional comments/notes?	final_notes		Character

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Instructions for Completing the Human Infection with 2019 Novel Coronavirus (COVID-19) Person Under Investigation (PUI) and Case Report Form

Purpose: This document describes the procedures for completing the 2019 Novel Coronavirus (COVID-19) Person Under Investigation (PUI) and Case Report Form (CRF) for persons under investigation who are being tested or have been tested for the virus that causes COVID-19, and presumptive positive cases and confirmed cases of COVID-19.

- PUI: Any person who is currently under investigation for having the virus that causes COVID-19, or who was under investigation but tested negative for the virus.
- Presumptive positive case of COVID-19: Individual who has tested positive for the virus that causes COVID-19 in at least one respiratory specimen, but testing was conducted at the local or state level. Currently, presumptive positive cases must have samples undergo confirmatory testing at CDC.
- Laboratory-confirmed case of COVID-19: Individual who has tested positive for the virus that causes COVID-19 in at least one respiratory specimen at the CDC laboratory.

If a sample from a PUI tests positive for the virus that causes COVID-19, the form should be updated to indicate an individual's change in status from a PUI to either a presumptive positive or laboratory-confirmed case, depending on whether confirmatory testing at CDC has been conducted or is still pending.

Other individuals may remain as PUI, and not become laboratory-confirmed cases if their laboratory samples test negative for the virus that causes COVID-19.

If the person has a positive laboratory result for the virus that causes COVID-19, but was not previously a PUI, the form may be filled for the first time when a person is considered a presumptive positive or laboratory-confirmed COVID-19 case.

General:

1. All dates should be formatted MM/DD/YYYY.
2. If completing the .pdf version of the form, use an "X" to mark boxes. Make sure to carefully mark boxes so that the "X" does not cross multiple boxes.

Header:

PATIENT IDENTIFIER INFORMATION IS NOT TRANSMITTED TO CDC AND IS FOR LOCAL-USE ONLY:

Patient first name: Enter case's first (given) name.

Patient last name: Enter case's last (family) name.

Date of birth (MM/DD/YYYY): Enter date of birth in MM/DD/YYYY format.

ID information:

Reporting jurisdiction: Enter the reporting jurisdiction where the PUI or case was identified. The reporting jurisdiction must be a state/city/territory authorized to submit data through NNDSS.

Reporting health department: Enter the name of the health department completing the PUI or case report.

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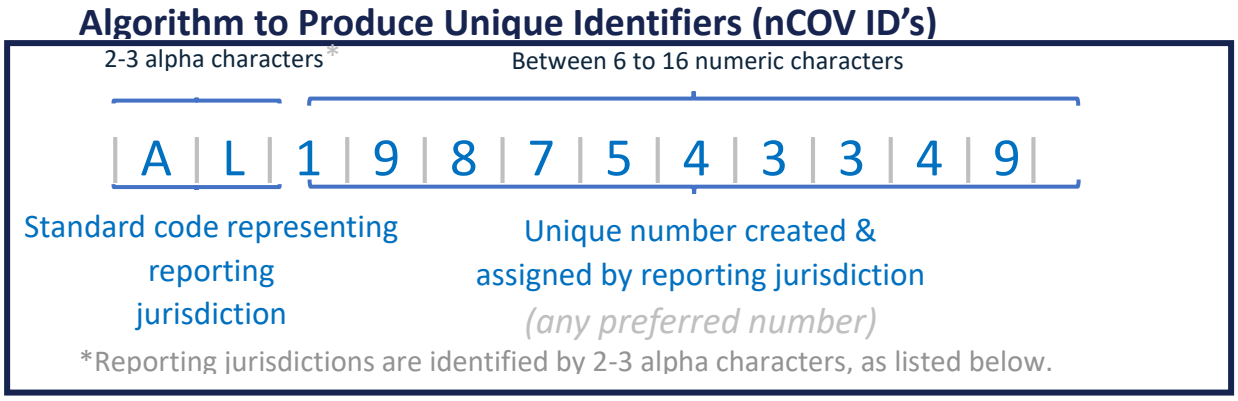
Case state/local ID: Enter a local-use ID assigned by the state or local health department if desired for patient tracking or matching.

CDC 2019-nCoV ID: Enter the CDC 2019-nCoV ID assigned to the PUI or case. If the case was already identified as a PUI in collaboration with CDC, or was part of a contact investigation in which CDC was collaborating with the state or local health department, this CDC 2019-nCoV ID should have already been assigned and the CDC 2019-nCoV ID that was already provided by CDC should be entered. The CDC 2019 nCoV ID should be a part of the state or local health departments records; please check with the reporting jurisdiction. This may have previously been called a PUI ID. **Do not assign a new 2019-nCoV ID for these individuals**.

If this is a new PUI or case that was not previously under investigation or reported, the CDC 2019-nCoV ID should be assigned by the jurisdiction. CDC 2019-nCoV IDs should be assigned for all PUIs and laboratory-confirmed cases so that this person can be tracked at the jurisdictional and national level. The reporting jurisdiction should assign the CDC 2019-nCoV ID, and use this ID for all specimens and data transmitted to CDC for that person. The structure of the ID should be as follows:



!!! Important !!!

Do not add special characters, dashes, or white spaces to the nCoV ID. The alpha- and numeric-portions of the ID are seamless. The numeric portion of the ID cannot begin with zero ('0').

State	Code
Alabama	AL
Alaska	AK
Arizona	AZ
Arkansas	AR
California	CA
Colorado	CO
Connecticut	CT
Delaware	DE
Florida	FL
Georgia	GA
Hawaii	HI
Idaho	ID
Illinois	IL
Indiana	IN
Iowa	IA
Kansas	KS
Kentucky	KY

State	Code
Louisiana	LA
Maine	ME
Maryland	MD
Massachusetts	MA
Michigan	MI
Minnesota	MN
Mississippi	MS
Missouri	MO
Montana	MT
Nebraska	NE
Nevada	NV
New Hampshire	NH
New Jersey	NJ
New Mexico	NM
New York	NY
North Carolina	NC
North Dakota	ND

State	Code
Ohio	OH
Oklahoma	OK
Oregon	OR
Pennsylvania	PA
Rhode Island	RI
South Carolina	SC
South Dakota	SD
Tennessee	TN
Texas	TX
Utah	UT
Vermont	VT
Virginia	VA
Washington	WA
West Virginia	WV
Wisconsin	WI
Wyoming	WY

Territory/Jurisdiction	Code
American Samoa	AS
District of Columbia	DC
Guam	GU
New York City	NYC
Northern Mariana Islands	MP
Puerto Rico	PR
U.S. Virgin Islands	VI
Federated States of Micronesia	FSM
Republic of Marshall Islands	RMI
Republic of Palau	ROP

This ID will be used to track information about the PUI or case-patient in CDC data systems and **must** be provided on all forms or specimens related to this individual.

Contact ID: Only fill out this field if a PUI or case-patient is a known contact to another presumptive or confirmed case of COVID-19. Contact IDs are assigned using the original (source) case-patient's nCoV ID followed by a hyphen and a sequential number indicating the order in which the contact was identified (e.g., Confirmed case CA102034567 may have contacts CA102034567 -01 and CA102034567 -02). If the person was previously under investigation in collaboration with CDC, or was part of a contact investigation in which CDC was collaborating with state/local health departments, this Contact ID may have been assigned previously. This should be a part of the state or local health departments records; please check with the reporting jurisdiction.

NNDSS loc. rec. ID/Case ID: For NNDSS reporters, enter the GenV2 or NETSS patient identifier.

Interviewer information

Name of interviewer: Enter the last name and first name of the person performing the interview.

Affiliation/Organization: Enter the interviewer's affiliation/organization.

Telephone: Enter the interviewer's telephone number.

Email: Enter the interviewer's email address.

Basic case information

What is the current status of this person?

- Select "PUI, testing pending" if a PUI has been identified but the initial laboratory testing has not yet been completed.
- Select "PUI, tested negative" if a PUI was previously identified, but the laboratory testing for the virus that causes COVID-19 was negative.
- Select "Presumptive case (positive local test), confirmatory testing pending" if at least one respiratory specimen from the person has tested positive for the virus that causes COVID-19 at the state or local level, and the specimen has been sent to CDC for confirmatory testing but a final result is pending.
- Select "Presumptive case (positive local test), confirmatory testing negative" if at least one respiratory specimen from the person has tested positive for the virus that causes COVID-19 at the state or local level, but the confirmatory result at CDC was negative.
- Select "laboratory-confirmed case" if a person has at least one respiratory specimen that tested positive for the virus that causes COVID-19 as part of confirmatory testing at CDC.

Please update this field each time the individual's status changes.

Report date of PUI to CDC: Enter the date the person was initially reported to CDC **as a PUI** in MM/DD/YYYY format.

Report date of case to CDC: Enter the date the case-patient was initially reported to CDC **as a case (including a presumptive positive case)** in MM/DD/YYYY format. That is, please report the date at which the person changed from not being a case to being either a laboratory-confirmed or presumptive positive case.

County of Residence: Please enter the individual's county of residence. Residence is typically defined by CSTE as the place of 'usual residence' at the time an infection is acquired.

State of Residence: Please enter the individual's county of residence. Residence is typically defined by CSTE as the place of 'usual residence' at the time an infection is acquired. The state of residence and reporting jurisdiction may be two distinct places.

Ethnicity: Select appropriate response. If unknown, select not specified.

Sex: Select appropriate response.

Race: Check all race categories that apply. If other, please specify in free text.

Date of birth: Enter the PUI or case-patient's date of birth in MM/DD/YYYY format. Only enter data in this field if data can be transmitted to CDC per state/local policy.

Age: Enter the PUI or case-patient's age. Age may be entered in units of years, months, or days. Units will be specified later.

Age units (year/month/day): Select age units.

Date of first positive specimen collection: Enter the date of this person's first positive respiratory specimen collection, regardless of specimen type, in MM/DD/YYYY format. If the person tested positive, but the date is unknown, select "Unknown." If the person is a PUI and tested negative or is awaiting initial test results, select "N/A."

Did the patient develop pneumonia?: Select the appropriate response. Refer to the clinical discharge summary in the patient's medical chart. This should not be from ICD codes. Select 'unknown' if missing chart.

Did the patient have acute respiratory distress syndrome?: Select appropriate response. Refer to the clinical discharge summary in the patient's medical chart. This should not be from ICD codes. Select "unknown" if missing chart.

Did the patient have another diagnosis/etiology for their illness?: Select appropriate response. Refer to the clinical discharge summary in the patient's medical chart. This should not be from ICD codes. Select "unknown" if missing chart.

Did the patient have an abnormal chest X-ray?: Select appropriate response. Select "unknown" if missing chart. Select 'yes' if—at any time—the person had an abnormal chest X-ray as part of this illness.

Symptoms present during course of illness?: This question refers to the PUI or case-patient's symptom status related to the entire duration of illness. If the PUI or case-patient was ever symptomatic as part of this illness with COVID-19, select "symptomatic." If the PUI or case-patient was asymptomatic (never experienced symptoms as part of this illness), please select "asymptomatic." If symptom status is unknown, select "unknown."

- If symptomatic, record symptom onset date in MM/DD/YYYY format or mark "unknown."
- If the PUI or case-patient was previously symptomatic and symptoms are currently resolved at the time of completing or updating this form, list date of symptom resolution in MM/DD/YYYY format. If exact dates of symptom resolution are not known, but there is a known approximate date, enter this

in the date field. If still symptomatic at time of interview, mark “Still symptomatic.” If the PUI or case-patient had symptoms, and the symptoms are resolved, but there is no information about the time frame of symptom resolution, mark “Symptoms resolved, unknown date.” If the interviewer and patient do not know the symptom status, mark “Unknown symptom status.”

Was the patient hospitalized? Select the appropriate response. If yes, provide dates of first hospital admission and first hospital discharge in MM/DD/YYYY format. If the patient is currently hospitalized, please leave the discharge date blank. This field can be revised at a later time.

Was the patient admitted to an intensive care unit (ICU)? Select the appropriate response. Select “unknown” if the medical chart is not available or ICU admission is not known.

Did the patient receive mechanical ventilation (MV)/intubation? Select “Yes” if the patient was mechanically ventilated during hospitalization via intubation *or* tracheostomy. If yes, count the total number of days with mechanical ventilation. Round up to whole number. Select “unknown” if the medical chart is not available.

Did the patient receive extracorporeal membrane oxygenation (ECMO)?: Select the appropriate response. Select “unknown” if the medical chart is not available.

Did the patient die as a result of this illness? Select appropriate response. If "Yes," then enter date of death in MM/DD/YYYY format. If unknown date of death, please select “Unknown date of death.” (In DCIPHER, this is phrased as “Check if date of death unknown.”)

Is the patient a health care worker in the United States?: Select the appropriate response. HCP are defined as all paid and unpaid persons working in health-care settings who have the potential for exposure to patients and/or to infectious materials, including body substances, contaminated medical supplies and equipment, contaminated environmental surfaces, or contaminated air. HCP might include (but are not limited to) physicians, nurses, nursing assistants, therapists, technicians, emergency medical service personnel, dental personnel, pharmacists, laboratory personnel, autopsy personnel, students and trainees, contractual staff not employed by the health-care facility, and persons (e.g., clerical, dietary, housekeeping, laundry, security, maintenance, administrative, billing, and volunteers) not directly involved in patient care but potentially exposed to infectious agents that can be transmitted to and from HCP and patients.

Does the patient have a history of being in a healthcare facility (as a patient, worker, or visitor) in China?: Select the appropriate response.

In the 14 days prior to illness onset, did the patient have any of the following exposures: Check all that apply. For healthcare contact with another lab-confirmed COVID-19 case-patient, check if the PUI or case-patient identified in the current form was a patient, a visitor (e.g., accompanying family member who was seeking care), or a healthcare worker, when they contacted a lab-confirmed COVID-19 case-patient.

If the PUI or case-patient traveled to a non-US country that was not China, select all of the countries that the person traveled to within the past 14 days by selecting all relevant response options from the drop-down menu. If the country that the PUI or case-patient traveled to in the past 14 days is not listed, you may write the appropriate country in the text field.

If the patient had contact with another COVID-19 case, was this person a U.S. case?: Select the appropriate response. If yes, please provide the nCoV ID of the source case. If the patient did not have contact with another case, please select "N/A."

Under what process was the PUI or case first identified? Please check all that apply. If identified by the EpiX notification of travelers, please provide the DGMQID. If other, please specify.

Symptoms, clinical course, past medical history and social history:

Collected from (check all that apply): Please select "patient interview" or "medical record review." If both sources were used to collect information on symptoms, clinical course, past medical history, and social history, please select both response options.

During this illness, did you experience any of the following symptoms? Please select "Yes," "No," or "Unknown" for each specific symptom. Please indicate the symptoms that the PUI or case-patient has experienced to date, even if he/she is no longer experiencing these symptoms. All symptoms should have an answer. If other symptoms were experienced, then describe the symptom in the space after "Other".

Pre-existing medical conditions?: Mark the appropriate response based on whether the PUI or case-patient has *any* pre-existing medical conditions prior to investigation or confirmation of COVID-19. If PUI or case-patient has no pre-existing medical conditions, mark "No." If not collected during interview and medical chart is missing, mark "Unknown." After answering the initial (summary) question, please provide a response for *each* pre-existing condition. All questions—other than pregnancy—pertain to a *current* or *past* history of the condition. If "Yes" to neurologic/neurodevelopment/intellectual disability or Other Chronic Diseases, please specify. The pregnancy question should be marked "Yes" if the PUI or case-patient is female and currently or recently pregnant (i.e., gave birth while ill with COVID-19).

Current smoker: Select the appropriate response.

Former smoker: Select the appropriate response.

Respiratory diagnostic testing: For each pathogen, indicate whether the test was positive, negative, pending, or not done. If the PUI or case-patient had a test performed for another pathogen, please check the appropriate test result and specify the name of the pathogen next to "Other, Specify." (In DCIPHER, please specify additional tests/pathogens only if they are positive.) If multiple tests for the same pathogen were completed, mark "Positive" if any of the tests for that pathogen were positive during the course of the illness suspected to be COVID-19.

Specimens for COVID-19 testing: For each specimen tested for the virus that causes COVID-19, record if the specimen was from a nasopharyngeal swab (NP), oropharyngeal swab (OP), sputum, or other specimen (specify type). Jurisdictions can provide up to three results for each type of specimen; if additional specimens are collected, please provide information about these specimens in the "additional state/local specimen ID" fields below this question. If there are still additional specimens, please use the notes field following the specimen collection information to provide specimen IDs. Provide the local, state, or jurisdictional specimen ID associated with each specimen, as well as the date the specimen was collected in MM/DD/YYYY format. Mark for each specimen whether it was sent to CDC or was tested at the state or jurisdictional public health laboratory. For each test performed at the state or local level, indicate the result: positive, negative, pending, not done, or indeterminate. CDC will populate results from CDC laboratories.

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Please update these test results as they become available.

Additional state/local Specimen IDs: Provide additional specimen IDs from state/local laboratories for specimens tested for the virus that causes COVID-19. If needed, prioritize listing those specimens testing positive for the virus that causes COVID-19, regardless of specimen type.

February 12, 2020

Dear State and Local Public Health Laboratory Directors,

This communication will provide further information and a set of Frequently Asked Questions (FAQs) to support the PHL-to-CDC 2019 Novel Coronavirus (2019-nCoV) data messaging work. Please note that we are aware of the name change to:

- Disease Name: Corona Virus Disease (COVID-19)
- Virus: the International Committee on Taxonomy of Viruses has decided on SARS-CoV-2, which "formally recognizes this virus as a sister to severe acute respiratory syndrome coronaviruses."

However, the messaging structure aligns with the current CDC Emergency Use Authorization (EUA) Assay. If CDC amends the EUA, APHL will work with its partners to update messaging structure/naming convention.

As a reminder, on February 4, 2020, APHL sent Lab Alert #6, which described the collaborative efforts of APHL, the CDC, and the Regenstrief Institute to define the standard terminology and codes associated with the 2019-nCoV RNA panel. Additionally, Lab Alert #6 included specific instructions for 2019-nCoV electronic message validation processes and engaging with APHL informatics technical assistance resources.

The goal to validate and move as many PHL 2019-nCoV data feeds into production by Friday February 14 remains unchanged.

We thank all the PHLs who have completed the informatics readiness assessment and ask that those laboratories who have not completed this short 2-question survey do so as soon as possible. APHL will be following up with all PHLs who have not completed the assessment later this week.

For informatics related technical assistance requests, please contact APHL's Help Desk at informatics.support@aphl.org. For all other questions, please contact APHL at eoc@aphl.org.

Thank you,
Scott J. Becker, MS
Executive Director
240.485.2747
scott.becker@aphl.org
@scottjbecker

2019-nCoV data messaging FAQs	
Technical Assistance (TA) Requests and Help Desk	
Question	**Response**
Can I request Informatics Technical Assistance?	Yes, APHL can provide technical assistance in the following areas: • Standardized terminology/vocabulary • Data integration • HL7 message generation • Message Transport • General 2019-nCoV Informatics questions
How do I request Technical Assistance?	If your PHL has not completed the 2-question assessment, please do so before submitting a TA request. If your PHL has not requested 2019-nCoV TA to date, please open a new APHL's Help Desk ticket outlining your TA needs and include 2019-nCoV Technical Assistance Request in the subject line. If your PHL has already submitted a TA request through the Informatics Help Desk, please respond to the initial Help Desk ticket thread with your updated or new TA request.
Testing and Validating 2019-nCoV Messages	
Question	**Response**
How do I send my HL7 test messages?	PHLs will send 2019-nCoV HL7 test messages in the same data stream as your current Public Health Laboratory Interoperability Project (PHLIP) data (HL7 2.3.1 or 2.5.1), however, test messages MUST be successfully validated by the CDC 2019-nCoV messaging leads in order to receive approval to migrate to production. As such, all test messages must be sent from a **Staging Environment, not Production.** If you cannot meet these requirements, please open an Informatics Help Desk ticket or respond to an existing 2019-nCoV TA request with additional questions or issues.
May I send a single message to see if my transport is set up correctly?	Yes, please send your test transport message with the contents "*Hello World.*" The "*Hello World*" helps us know that the message was intentionally sent and no further action is needed.

Do we need to notify anyone when I send the test messages?	**Yes**- Anytime that you send test messages through Staging, please alert APHL by responding to an already open 2019-nCoV Help Desk ticket or opening a new ticket entitled **2019-nCoV Message Validation** that includes: • The message count • Date/time the messages were sent. The APHL team will follow up with CDC and a response will be returned as soon as possible.
Are there sample 2019-nCoV messages we can use to build our test messages?	APHL has developed eight (8) test message scenarios to support data exchange work (4 for HL7 2.5.1 and 4 for HL7 2.3.1). Please be sure to use the correct HL7 version sample messages when developing your test messages. Sample message can be found at: • 2.5.1 Inconclusive • 2.5.1 Not Detected • 2.5.1 SpmUnsat • 2.5.1 Detected • 2.3.1 Detected • 2.3.1 Not Detected • 2.3.1 SpmUnsat • 2.3.1 Inconclusive
How will I know I am ready to send 2019-nCoV in production?	The Technical Assistance team will respond to the already open APHL Informatics Help Desk ticket with CDC's approval and instructions to move to full production. Please do NOT send any messages through production until instructed to do so.
Mapping 2019-nCoV message mapping	
Question	**Response**
Which descriptions should we use, as there seems to be minor differences in the target descriptions between the EUA and the APHL 2019-nCoV Encoding Guidelines?	PHLs should use the descriptions indicated in the 2019-nCoV Encoding Guidelines to report nCoV targets in conjunction with the associated LOINC codes in OBX-3.1 to OBX-3.3. For example: • 'SARS-like CoV N' should be used instead of 'N3'. These are the official LOINC descriptions approved by CDC. **The EUA target descriptions may be incorporated as local test codes in OBX-3.4 to OBX-3.6**.

There seems to be differences in the interpretation descriptions between the EUA and the APHL 2019-nCoV Encoding Guidelines. Which should be used for PHLIP reporting of 2019-nCoV?	PHLs should use the interpretation descriptions indicated in the 2019-nCoV Encoding Guidelines for 2019-nCoV reporting in conjunction with the associated SNOMED codes in OBX-5.1 to OBX-5.3. For example: • 'Detected' should be used instead of 'Presumptive positive.' • 'Specimen unsatisfactory for evaluation' should be used instead of 'Invalid.' These are the result descriptions agreed upon by APHL and CDC. **The EUA interpretation descriptions may be incorporated as local result codes in OBX-5.4 to OBX-5.6.**
Data Element Questions	
Question	**Response**
Are we required to report nCoV targets? Or can we report a conclusion?	Your PHL can choose to report either nCoV targets or conclusions, or both. Refer to the 2019-nCoV Encoding Guidelines for valid order/observation combinations.
Are nCoV PUI numbers required to be included in the nCoV HL7 message?	No, at this time, PUI numbers are not required in the PHLIP message.
Does the RP have to be reported?	If your PHL plans to report the nCoV targets, then the RP must be reported as well. The RP is important for determining the result interpretation.
Epidemiological data elements	
Question	**Response**
Are there any additional epidemiological data elements required for nCoV data reporting?	At this time, there are no requirements related to the inclusion of additional epidemiological-related data.
nCoV Response Unique Identifier	
What is this nCoV Response Unique Identifier I am hearing about?	See details below

2019-nCoV Response Unique Identifier

CDC has instructed state health departments to assign a 2019-nCoV Unique Identifier, based on the CDC defined format, to track and link data for suspect 2019-nCoV cases. This unique identifier will accompany all documents/messages and forms associated with the suspect case - including laboratory test requests. PHLs are encouraged to assess the ability to include this new ID in their LIMS and include this data element in their nCoV data stream. Detailed implementation information follows:

- PHLIP reporting of the nCoV ID is currently optional.

- Epidemiological-related OBXs will be used to populate the nCoV ID in the PHLIP message.
- OBX-3 = PLT248 and PLT249 must **BOTH be included together** in the message. These OBXs should be placed under a separate Epi order code OBR-4 = 68991-9. **If this is not feasible**, the OBXs may be placed under the nCoV testing order codes OBR-4 = 94306-8 or 94309-2 that is being utilized to report nCoV tests and results. (See table)
- For PLT249, the OBX-5 must be PLR138^outbreak^PLR to indicate the ID is associated with an outbreak event.
- For PLT248, OBX-5.1 should include the nCoV ID in the format designated by the DCIPHER algorithm (i.e. AL000001). The Assigning authority name in OBX-5.4.1 will be the state health department name, followed by its OID, and then ISO. OBX-5.5 should be populated with the code PHC for Public Health Case Identifier. These are required fields.
- Populate the remainder of the OBR and OBX segments with the required data elements. The table below shows select applicable fields for reporting the nCoV.
- **If you use an alternate method of transport to submit 2019-nCoV data, contact Krista Kniss (krk9@cdc.gov) for further instructions.**

OBR-4		
68991-9^Epidemiologically important information for public health reporting panel^LN		
OBX-2	OBX-3	OBX-5
CWE (2.5.1) CE (2.3.1)	PLT249^Sample is related to program/study/event^PLT	PLR138^outbreak^PLR
CX	PLT248^Identifier with assigning authority^PLT	[nCoV ID]^^^[Assigning authority name]&[Assigning authority OID]&ISO^PHC

Helpful Informatics Links:

- **2019-nCoV Encoding Guidelines**
- **Informatics Help Desk**
- **Informatics 2-question Assessment**
- **Test Message Scenarios**
  - 2.5.1 Inconclusive
  - 2.5.1 Not Detected
  - 2.5.1 SpmUnsat
  - 2.5.1 Detected
  - 2.3.1 Detected
  - 2.3.1 Not Detected
  - 2.3.1 SpmUnsat
  - 2.3.1 Inconclusive

CDC Daily Key Points

Coronavirus Disease 2019 ("COVID-19") Outbreak

February 29, 2020

All content updated since February 27 is shown in colored text.

MAIN KEY POINTS

- There is an expanding global outbreak of respiratory illness named "COVID-19" caused by a novel (new) coronavirus.
- The outbreak began in China but is spreading worldwide, including the United States.
- COVID-19 is threatening to cause a pandemic.
- The U.S. public health response is aggressive and multi-layered, with the goal of detecting introductions of this virus in the United States and reducing the potential spread and impact of this virus.
- This aggressive response has helped to limit the number of U.S. cases in the United States.
- As the virus continues to spread internationally and in the United States, it becomes harder and harder contain its spread.
- This week, several instances of infection with the virus that causes COVID-19 occurred in people with no travel history and no known source of exposure.
- These possible instances of community spread occurred in California, Washington and Oregon.
- In Washington three patients were reported who had tested presumptive-positive for the virus that causes COVID-19 at the state.
    - These included a person who died, an infected hospitalized health care worker and a potential outbreak in a long-term care facility.
    - *See Possible Washington Cluster section*
- The U.S. expects to detect more introductions of COVID-19 through travel, as well as more person-to-person spread and community transmission of this virus.
- Aggressive containment efforts will continue, including ongoing use of isolation and quarantine measures to decrease introductions and spread of the virus.
    - On February 29, the U.S. government announced it was suspending entry of foreign nationals who have been in Iran within the past 14 days.
- In affected communities, local authorities will implement other measures too, including Nonpharmaceutical Interventions (NPIs).
- Local authorities will determine which NPIs to implement, taking into account current circumstances in their communities.
- Nonpharmaceutical Interventions are actions, apart from getting vaccinated and taking medicine, that people and communities can take to help slow the spread of illnesses like pandemic flu or COVID-19.
- The purpose of most NPIs is to help reduce spread of illness by maintaining or increasing distance between people.
- Social distancing measures are an important weapon to fight the spread of this virus and also can reduce the impact of this virus on communities as a whole.
- The potential public health threat posed by COVID-19 is high, both globally and to the United States.

- But individual risk is dependent on exposure.
- What is currently known about the potential cases of community spread has raised the level of concern about the immediate threat for COVID-19 for certain communities.
- For the general American public, who are unlikely to be exposed to this virus at this time, the immediate health risk from COVID-19 is considered low.
- People in communities where ongoing community spread with the virus that causes COVID-19 has been reported are at elevated though still relatively low risk of exposure.
- Healthcare workers caring for patients with COVID-19 are at elevated risk of exposure.
- Close contacts of persons with COVID-19 also are at elevated risk of exposure.
- Travelers returning from affected locations internationally where community spread is occurring also are at elevated risk of exposure.
- CDC has developed guidance to help in the risk assessment and management of people with potential exposures to COVID-19.
- While still taking every effort to prevent a pandemic, CDC is operationalizing all of its pandemic preparedness and response plans.
- Guidance developed in anticipation of an influenza pandemic is being repurposed and adapted for COVID-19.
- Public health partners are encouraged to review their pandemic preparedness plans at this time.

SITUATION UPDATE

- This is a rapidly evolving situation. CDC is constantly reviewing and updating its guidance as needed.

International

- To date, 60 international locations (including the U.S.) have reported confirmed cases of COVID-19, most recently Azerbaijan, Iceland, and Monaco.
- CDC is reviewing and updating its travel guidance daily.
- To date, CDC has issued:
    - Level 3 Travel Health Notices (Avoid Nonessential Travel) for China, Iran, Italy, and South Korea.
    - Level 2 Travel Health Notices (Practice Enhanced Precautions) for Japan.
    - Level 1 Travel Health Notices (Practice Usual Precautions) for Hong Kong.
- CDC also recommends that all travelers reconsider cruise ship voyages into or within Asia at this time.
    - This is consistent with guidance by the U.S. State Department.

Domestic

- CDC is reporting confirmed cases of COVID-19 in the United States in two categories:
    1. Cases detected through our domestic public health systems, and
    2. Cases among people who were repatriated via U.S. State Department flights from Wuhan, China and from the *Diamond Princess* cruise ship (Japan).
- 22 cases of COVID-19 have been detected through U.S. public health surveillance.
    - Six of these cases occurred through person-to-person spread.

        - On February 26, CDC confirmed what is potentially the first instance of community spread with the virus that causes COVID in Sacramento, CA.
        - Late on February 28, CDC announced three more possible instances of community-acquired COVID-19—one each in California, Oregon, and the state of Washington.
        - On February 29, CDC and public health officials in the state of Washington reported three hospitalized patients who have tested presumptive-positive for the virus that causes COVID-19. All of these are potential cases of community spread.
            - One of the patients has died. This is the first reported death in the United States from COVID-19.
            - *See Possible Washington Cluster section*
        - Community spread means spread of an illness for which the source of infection is unknown.
        - It's also possible, however, that these patients may have been exposed to a returned traveler who was infected.
        - CDC is supporting investigations locations with possible community spread.
        - People who were exposed to these patients during their infection are at some level of risk depending on their exposure.
        - Based on what is known about how this virus behaves, additional cases among people who have had contact with these patients, especially those who have had close, prolonged contact, are expected.
        - This could include family members and potentially healthcare workers who cared for the patients.
        - All the remaining cases detected through the U.S. public health system were in persons who had travel to areas with ongoing community transmission.
- 47 cases of COVID-19 have been detected among the 1,100+ people repatriated from Hubei Province, China and the *Diamond Princess*.
    - 3 people were repatriated from Wuhan.
    - 44 people were repatriated from the Diamond Princess, an increase of 2 since yesterday.
- Almost all of the people from the Wuhan flights who were quarantined have finished their 14-day quarantine period.
- On Monday, most of the passengers from the Diamond Princess will complete their 14-day quarantine period.
- Patients who tested positive during their quarantine will remain in isolation. A small number of close contacts of those patients (for instance, spouses who have been living with them) who are at increased risk will have their quarantines extended.

WHAT'S NEW:

- On February 28 CDC issued a health alert network update titled: "Update and Interim Guidance on Outbreak of Coronavirus Disease 2019 (COVID-19)."
- CDC has been watching the increased spread of this virus across the world and worked with partners on an updated PUI definition.

- The updated PUI definition takes into account the new geographic spread of the virus and includes a list of affected areas with widespread or sustained community spread. This list is dynamic and will change as our travel guidance is revised.
- CDC has posted "Community Mitigation Guidance for COVID-19 Response in the United States: Nonpharmaceutical Interventions for Community Preparedness and Outbreak Response."

WHAT TO DO

- While the immediate risk of this new virus for most of the American public is believed to be low at this time, everyone can do their part to help us respond to this emerging public health threat:
    - It's currently flu and respiratory disease season and CDC recommends getting a flu vaccine, taking everyday preventive actions to help stop the spread of germs, and taking flu antivirals if prescribed.
    - If you are a healthcare provider, be on the look-out for:
        - People who recently traveled from China or another affected area and who have symptoms associated with COVID-19, and;
        - People who have been in close contact with someone with COVID-19 or pneumonia of unknown cause. (Consult the most recent definition for patients under investigation [PUIs].)
    - If you are a healthcare provider or a public health responder caring for a COVID-19 patient, please take care of yourself and follow recommended infection control procedures.
    - If you are a close contact of someone with COVID-19 and develop symptoms of COVID-19, call your healthcare provider and tell them about your symptoms and your exposure.
    - If you are a resident in a community where person-to-person spread of COVID-19 has been detected and you develop COVID-19 symptoms, call your healthcare provider and tell them about your symptoms.
    - For people who are ill with COVID-19, but are not sick enough to be hospitalized, please follow CDC guidance on how to reduce the risk of spreading your illness to others. People who are mildly ill with COVID-19 are able to isolate at home during their illness.
    - If you have been in China or another affected area or have been exposed to someone sick with COVID-19 in the last 14 days, you will face some limitations on your movement and activity for up to 14 days. Please follow instructions during this time. Your cooperation is integral to the ongoing public health response to try to slow spread of this virus.

POSSIBLE WASHINGTON CLUSTER

- On February 29, CDC and public health officials in the state of Washington reported three hospitalized patients who have tested presumptive-positive for the virus that causes COVID-19.
    - One of the patients has died. This is the first reported death in the United States from COVID-19.
- Two of the patients are from a long-term care facility where one is a health care worker. This is the first reported case in a healthcare worker.

- Additional residents and staff of the long-term care facility who have not yet been tested for COVID-19 are reportedly either ill with respiratory symptoms or hospitalized with pneumonia of unknown cause.
- The patient who died was being treated in the same hospital as one of the other presumptive positive cases, but was not a resident of the long-term care facility.
- While there is an ongoing investigation, the source of these infections is currently unknown.
    - Circumstances suggest person-to-person spread including in the long-term care facility.
- CDC is deploying a team to Washington to support the ongoing investigation to find and identify how the patients were exposed and do extensive contact tracing of people who were exposed or might have been exposed to the patients.

TESTING

- An important part of CDC's role in testing during a public health emergency is to develop a test for the pathogen and equip state and local public health labs with the capacity to test for this virus.
- Distribution of a CDC rRT-PCR test to diagnose COVID-19 began to state and local public health labs, but shortly thereafter performance issues were identified related to a problem in the manufacturing of one of the reagents, which led to laboratories not being able to verify the test performance.
- CDC worked on two potential resolutions to this problem.
    - CDC developed a new protocol that uses two of the three components of the original CDC test kit to detect the virus that causes COVID-19.
        - CDC established that the third component, which was the problem with the original test, can be excluded from testing without affecting accuracy.
        - CDC is working with FDA to amend the existing Emergency Use Authorization (EUA) for the test, but in the meantime, FDA granted discretionary authority for the use of the original test kits.
        - Public health laboratories can use the original CDC test kit to test for the virus that causes COVID-19 using the new protocol.
    - Further, newly manufactured kits have been provided to the International Reagent Resource for distribution.
- Combined with other reagents that CDC has procured, this is enough testing kits to test more than 75,000 people.
- In addition, CDC has two laboratories conducting testing for the virus that causes COVID-19. CDC can test approximately 350 specimens per day.
- Commercial labs are working to develop their own tests and hopefully will be available soon. This will allow a greater number of tests to happen close to where potential cases are.
- Learn more information about CDC's laboratory work.

NONPHARMACEUTICAL INTERVENTIONS

- Nonpharmaceutical Interventions (NPIs) are actions, apart from getting vaccinated and taking medicine, that people and communities can take to help slow the spread of illnesses like pandemic flu or COVID-19.
- NPIs are also known as community interventions.

- When a new virus spreads among people, causing illness worldwide, it is called a pandemic.
- Because the virus is new, the human population has little or no immunity against it. This allows the virus to spread quickly from person to person worldwide.
- NPIs are among the best ways of controlling a pandemic caused by a respiratory virus when vaccines are not yet available.
- NPIs are grouped in three categories:
    1. Personal NPIs (personal protective measures for everyday use and personal protective measures reserved for influenza pandemics);
    2. Community NPIs (social distancing measures and school closures and dismissals); and
    3. Environmental NPIs (surface cleaning measures)
- View information about NPIs and factors to consider before implementing nonpharmaceutical interventions.

BACKGROUND

- This new coronavirus has been named "SARS-CoV-2;" the disease it causes has been named COVID-19.
- Due to potential for confusion with SARS-CoV, where possible, public communications will use "the virus that causes COVID-19."

For more information please visit the Coronavirus Disease 2019 Outbreak Page at: www.cdc.gov/COVID19.

CDC WEEKLY KEY MESSAGES

Coronavirus Disease 2019 (COVID-19) Outbreak

March 1, 2020

This document summarizes key messages about the COVID-19 outbreak and the response. It will be updated and distributed regularly. For the most current information, visit www.cdc.gov/COVID19.
All content updated since February 24 is shown in colored text.

CONTENTS

CORONAVIRUS DISEASE 2019 (COVID-19) NAMING

- The International Committee on Taxonomy of Viruses named the novel coronavirus causing an outbreak of respiratory illness that was first detected in Wuhan, Hubei Province, China, Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2).
    - Due to potential for confusion with SARS-CoV, where possible, public communications will use “the virus that causes COVID-19.”

- On February 11, 2020, the World Health Organization (WHO) named the disease caused by this virus Coronavirus Disease 2019 (COVID-19).
    - **Disease name:** COVID-19

OUTBREAK SUMMARY

- There is an expanding outbreak of COVID-19 caused by a novel (new) coronavirus.
    - The outbreak began in China but is spreading worldwide and is threatening to cause a pandemic.
- Initially, many of the patients reportedly had some link to a large seafood and animal market, suggesting animal-to-person spread. Since then, sustained (ongoing) person-to-person spread in the community is occurring in some international locations.
- The newly emerged COVID-19 is a respiratory disease that seems to be spreading much like flu. It can spread from person-to-person.
- The new virus can cause illness varying from mild to severe, including potentially resulting in death.
- Outbreaks like this — when a new virus has emerged to infect people and spread between people — are especially concerning.

International

- Global case numbers are reported by WHO in their COVID-19 situation reports.
    - As of **February 29, more than 85,000** cases have been identified worldwide. More than 6,000 of these cases have occurred outside of China.
- On January 30, WHO declared this outbreak a Public Health Emergency of International Concern (PHEIC). A PHEIC is declared if an event poses a public health threat to other nations through the spread of disease and potentially requires a coordinated international response.

Domestic

- On January 31, Health and Human Services Secretary Alex M. Azar II declared a public health emergency for the United States to aid the nation's healthcare community in responding to COVID-19.
- This is a very serious public health threat and the federal government is working closely with state, local, tribal, and territorial partners, as well as public health partners, to respond to this public health threat.
- The goal of the ongoing US public health response is to minimize introductions of this virus, detect new cases quickly, and reduce community spread of this new coronavirus in the US.
- As the virus continues to spread internationally and in the United States, it becomes harder and harder contain its spread.
- During the week of February 23, several instances of infection with the virus that causes COVID-19 occurred in people with no travel history and no known source of exposure in multiple states. [See section "Possible U.S. cluster" below.]

- What is currently known about the potential cases of community spread has raised the level of concern about the immediate threat for COVID-19 for certain communities.
- The coming days and weeks are likely to bring more confirmed cases of COVID-19 in the United States and globally, but strong public health measures now may blunt the impact of the virus in the United States.
- While it is unclear how this situation will evolve in the United States, CDC is preparing as if it were the next pandemic, while hoping it is not.
- The current outbreak meets two criteria for a pandemic. It is a new virus and it is capable of person-to-person spread. If sustained person-to-person spread in the community begins outside in China, this will increase the likelihood that a global pandemic will result.
- Extensive work has been done over the past 15 years in the United States to prepare for an influenza pandemic.
    - Guidance developed for influenza pandemic preparedness would be appropriate in the event the current COVID-19 outbreak triggers a pandemic.
    - Selected pandemic preparedness materials are available online.

U.S. OUTBREAK STATISTICS

Cases in the United States as of **February 29, 2020**:

- **Travel-related: 13** (12 confirmed, 1 presumptive positive)
- **Person-to-person spread: 9** (3 confirmed, 6 presumptive positive)
- **Total cases: 22** (15 confirmed, 7 presumptive positive)
- **Deaths: 1** (0 confirmed, 1 presumptive positive)

Persons repatriated to the United States and tested positive by CDC, as of **February 29, 2020**:

- Wuhan, China: **3**
- *Diamond Princess* Cruise Ship: **44**

For global cases, please see the WHO daily situation reports.

POSSIBLE U.S. CLUSTER

- On February 29, CDC and public health officials in the state of Washington reported three hospitalized patients who have tested presumptive-positive for the virus that causes COVID-19.
- One of the patients has died. This is the first reported death in the United States from COVID-19.
- Two of the patients are from a long-term care facility where one is a healthcare worker.
    - This is the first reported case in a healthcare worker.
- Additional residents and staff of the long-term care facility who have not yet been tested for COVID-19 are reportedly either ill with respiratory symptoms or hospitalized with pneumonia of unknown cause.
- The patient who died was being treated in the same hospital as one of the other presumptive positive cases, but was not a resident of the long-term care facility.

- While there is an ongoing investigation, the source of these infections is currently unknown.
- Circumstances suggest person-to-person spread, including in the long-term care facility.
- CDC is deploying a team to Washington to support the ongoing investigation to find and identify how the patients were exposed and do extensive contact tracing of people who were exposed or might have been exposed to the patients.
- CDC infection control experts are assessing the risk of additional healthcare worker exposures and carefully reviewing infection control practices within the facility to protect residents and healthcare workers from further spread of COVID-19.
    - The general strategies CDC recommends to prevent the spread of COVID-19 in long-term care facilities (LTCF) are the same strategies these facilities use every day to detect and prevent the spread of other respiratory viruses like influenza. View Strategies to Prevent the Spread of COVID-19 in LTCF for more information.
    - All healthcare facilities can take steps now to prepare for COVID-19 and protect both their patients and staff.

CORONAVIRUS BACKGROUND

- Coronaviruses are a group of viruses that have a halo or crown-like (corona) appearance when viewed under a microscope. They are common in many different species of animals, including camels, cattle, cats, and bats.
- Human coronaviruses are a common cause of mild to moderate upper-respiratory illness. But three coronaviruses have emerged to cause more severe illness: Severe Acute Respiratory Syndrome (SARS-CoV), Middle East Respiratory Syndrome (MERS-CoV), and now the virus that causes COVID-19.
- On February 28, the Hong Kong Agriculture, Fisheries and Conservation Department (AFCD) reported a pet dog had tested "weak positive" to COVID-19 through nose and mouth samples. The dog had contact with a person infected with COVID-19. View the AFCD official report.
    - CDC is working with human and animal health partners to monitor this situation and will continue to provide updates as information becomes available.
    - It's important to remember dogs that have their own coronaviruses.
    - To date, CDC has not received any reports of pets or other animals becoming sick with COVID-19. At this time, there is no evidence that pets, including dogs, can spread COVID-19.
    - There is no reason to think that any animals, including pets, in the United States might be a source of infection with this new coronavirus.

TRANSMISSION

- Much is unknown about how the new coronavirus that causes COVID-19 spreads. Current knowledge is largely based on what is known about similar coronaviruses.
- Most often, person-to-person spread is thought to happen among people in close contact (about 6 feet) with each other.
- Person-to-person spread is thought to occur mainly through respiratory droplets produced when an infected person coughs or sneezes, similar to how influenza and other respiratory

pathogens spread. These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs.

- How easily a virus spreads person-to-person can vary. Some viruses are highly contagious (like measles), while other viruses are less so.
- It may be possible that a person can get COVID-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes, but this is not thought to be the main way the virus spreads.
- Typically, with most respiratory viruses, people are thought to be most contagious when they are most symptomatic (sickest).
- Mother-to-child transmission during pregnancy is unlikely, but after birth a newborn is susceptible to person-to-person spread.
- To date, CDC does not have any evidence to suggest that animals imported from China pose a risk for spreading the new coronavirus in the United States.
- At this time, CDC has no data to suggest that this new coronavirus or other similar coronaviruses are spread by mosquitoes.
    - Mosquitoes cannot spread all types of viruses. For a virus to pass to a person through a mosquito bite, the virus must be able to replicate inside the mosquito.
- There is much more to learn about the spread of this new coronavirus, severity of the disease, and other features associated with this outbreak and investigations are ongoing. This information will further inform the risk assessment.

DIAGNOSIS AND TREATMENT

- CDC developed a real time Reverse Transcription-Polymerase Chain Reaction (rRT-PCR) test to detect SARS-CoV-2 (the virus that causes COVID-19) in respiratory samples from clinical specimens.
- On January 24, CDC publicly posted the assay protocol for this test.
- CDC submitted an Emergency Use Authorization (EUA) package to the U.S. Food and Drug Administration on February 3 for its test.
- FDA approved the Emergency Use Authorization on February 4.
- The first manufactured batch of CDC test kits were made available for ordering by domestic and international partners through the agency's International Reagent Resource (IRR) on February 5.
- Upon arrival at public health laboratories, when laboratories began trying to verify the assay, several laboratories reported issues.
    - Specifically, some laboratories found sporadic reactivity in the negative control of one of the three assay components.
    - This sporadic activity resulted in an inconclusive test result.
- Routine quality control (QC) measures aim to identify these types of issues. It is unclear why QC did not detect this issue before the kits were sent out to states.

- On February 26, CDC, in conjunction with FDA, determined how to move forward and shared this information immediately with public health labs through the Association of Public Health Laboratories (APHL):
    - CDC is remanufacturing the test kits to ensure that laboratories have effective and reliable kits. The new kits will only include the two components (e.g., reagents) that are specific to novel coronavirus.
    - In the meantime, before new test kits are available:
        - States that were able to validate all three assays should continue to test in this manner.
        - States that were able to validate the other two assays (N1 and N2) can test using these two assays. We anticipate this will increase testing capacity to about 40 state and local health departments.
    - FDA granted CDC "enforcement discretion," which means that testing in this manner can move forward while an updated EUA is officially completed.
    - CDC distributed updated instructions for use through APHL.
- On February 27, CDC distributed new test kits to 7 laboratories to serve as evaluation sites to ensure these health departments are able to verify the assay. An additional 40 test kits were hand carried to IRR for repackaging and distribution to additional public health labs.
- On February 28, IRR began to distribute new test kits to the additional 40 laboratories.
- There is no specific antiviral treatment for COVID-19. People with COVID-19 should receive supportive care to help relieve symptoms.
- For severe cases, treatment should include care to support vital organ functions.

PREVENTION

- There is currently no vaccine to prevent COVID-19. The best way to prevent infection is to avoid being exposed to the virus.
- CDC always recommends everyday preventive actions to help prevent the spread of respiratory viruses, including:
    - Avoid touching your eyes, nose, and mouth with unwashed hands.
    - Avoid close contact with people who are sick.
    - Stay home when you are sick.
    - Cover your cough or sneeze with a tissue, then throw the tissue in the trash.
    - Clean and disinfect frequently touched objects and surfaces using a regular household cleaning spray or wipe.
    - Wash your hands often with soap and water for at least 20 seconds, especially after blowing your nose, coughing or sneezing; going to the bathroom; and before eating or preparing food.
    - If soap and water are not readily available, use an alcohol-based hand sanitizer with at least 60% alcohol. Always wash hands with soap and water if hands are visibly dirty.

MINIMIZING STIGMA AND MISINFORMATION

- Minimizing stigma and misinformation is important, especially during contagious disease outbreaks.
- **Everyone:** Know the facts about COVID-19 and help prevent the spread of rumors:
    - Fight stigma by supporting people who are coming back to school or work after completing their quarantine or isolation period for COVID-19 exposure or illness.
    - Someone who has completed their quarantine or met the requirements to discontinue infection control measures does not pose a risk of spreading COVID-19.
    - People of Asian descent, including Chinese Americans, are not more likely to get coronavirus than anyone else. Let people know that being of Asian descent does not increase the chance of getting or spreading COVID-19.
    - Viruses cannot target people from specific populations, ethnicities, or racial backgrounds.
        - People who have not been in contact with a person who is a confirmed or suspected case are not at greater risk of acquiring and spreading this new virus than others.
- People who returned more than 14 days ago from an area with widespread or ongoing community spread and do not have symptoms of coronavirus do not put others at risk.
- To help counter stigma, public health professionals can:
    - Maintain privacy and confidentiality of those seeking health care and those who may be part of any contact investigation.
    - Communicate the risk or lack of risk from associations with products, people, and places in a timely manner.
    - Raise awareness of COVID-19 while showing empathy for people's concerns and fears.
    - Share accurate information about how the virus spreads.
    - Speak out against negative behaviors, including negative statements on social media about groups of people, or exclusion of people who pose no risk from regular activities.
        - Be cautious about the images that are shared. Make sure they do not reinforce stereotypes.
        - Engage with stigmatized groups in person and through media channels including news media and social media.
- Share the need for social support for people who have returned from China or are worried about friends or relatives in the affected region.

TRAVEL

Travel Restrictions from China and Iran:

- President Trump issued a Presidential Proclamation on January 31, to implement temporary measures to increase our abilities to detect and contain the novel coronavirus proactively and aggressively.

- The proclamation took effect at 5 p.m. EST, Sunday, February 2.
- The proclamation suspends entry to the United States of foreign nationals who have been in China (excluding Hong Kong and Macau) in the past 14 days. There are some exemptions, including for immediate family members of US citizens and legal permanent residents. (Hereafter referred to as "American citizens and exempted persons.")
- In addition:
    - All American citizens and exempted persons coming from China will be directed to ("**funneled to"**) one of 11 US airports.
    - American citizens and exempted persons who have been in Hubei province in the previous 14 days will have an additional health assessment (screened for fever, cough, or difficulty breathing).
        - If symptomatic, American citizens and exempted persons will be transferred for further medical evaluation. (They will not be able to complete their itinerary.)
        - If asymptomatic, American citizens and exempted persons will be subject to a mandatory quarantine at or near that location until 14 days after they left Hubei Province. (They will not be able to complete their itinerary.)
    - American citizens and exempted persons who have been in other parts of mainland China (outside of Hubei Province) in the previous 14 days will have an additional health assessment (screened for fever, cough, or difficulty breathing).
        - If symptomatic, American citizens and exempted persons will be transferred for medical evaluation. (They will not be able to complete their itinerary at that time.)
        - If asymptomatic, American citizens and exempted persons will be allowed to reach their final destination and, after arrival, will self-monitor under public health supervision for 14 days.
- The 11 airports where travelers are being funneled include:
    - John F. Kennedy International Airport (JFK), New York
    - Chicago O'Hare International Airport (ORD), Illinois
    - San Francisco International Airport (SFO), California
    - Seattle-Tacoma International Airport (SEA), Washington
    - Daniel K. Inouye International Airport (HNL), Hawaii
    - Los Angeles International Airport (LAX), California
    - Hartsfield-Jackson Atlanta International Airport (ATL), Georgia
    - Washington-Dulles International Airport (IAD), Virginia
    - Newark Liberty International Airport (EWR), New Jersey
    - Dallas/Fort Worth International Airport (DFW), Texas
    - Detroit Metropolitan Airport (DTW), Michigan
- As of February 27, about 48,000 people have been screened at US airports.
- On February 29, the U.S. government announced it was suspending entry of foreign nationals who have been in Iran within the past 14 days.

Travel Notices and Advisories:

- To date, CDC has issued:
    - Level 3 Travel Health Notices (Avoid Nonessential Travel) for China, Iran, Italy, and South Korea.
    - Level 2 Travel Health Notices (Practice Enhanced Precautions) for Japan.
    - Level 1 Travel Health Notices (Practice Usual Precautions) for Hong Kong.
- CDC recommends that all travelers reconsider cruise ship voyages into or within Asia at this time.
    - CDC's recommendation is consistent with guidance from the U.S. Department of State.

Repatriation flights and quarantine orders:

- CDC has supported the Department of State in the safe and expedient ordered departure of US citizens and residents affected by outbreaks of COVID-19.
- Five chartered flights returned passengers from Wuhan City, China.
- Most recently, passengers from a cruise ship docked in Japan are in the process of being repatriated. (See section: *Diamond Princess*)
- The Department of Health and Human Services (DHHS) Secretary, under statutory authority, issued federal quarantine orders to all such passengers entering the United States.
    - The quarantine period is for 14 days.
    - The quarantine is a precautionary and preventive step to maximize the containment of the virus in the interest of the health of the American public.
    - This quarantine order also serves to protect the health of the repatriated persons, their families, and their communities.
- Medical staff monitor the health of each traveler, including temperature checks and observation for respiratory symptoms.
- CDC works with state and local public health departments and/or HHS's Incident Management Team (IMT) to transport any passenger exhibiting symptoms to a hospital for further evaluation.
- At the end of the 14-day period, people who have not developed symptoms have their quarantine order lifted and are free to return home.
- Almost all people from the Wuhan flights who were quarantined have fulfilled their 14-day quarantine period and have been released.

***Diamond Princess*:**

- CDC supported the Department of State-led mission to repatriate US citizens returning to the United States from Japan who were aboard the *Diamond Princess* cruise ship.
    - Due to the dynamic nature of the ongoing outbreak, the US government recommended that US citizens disembark and return to the United States.
- On February 16, 329 American citizens returned by flights chartered by the State Department.
    - The planes were met by a team of U.S. government personnel deployed at the bases to assess the health of the passengers.
    - The passengers were screened before leaving the ship and were monitored and evaluated by medical and public health personnel during the trip and after arrival. They

will continue to be monitored by medical and public health personnel throughout the 14-day quarantine period.

- Americans returned by flights chartered by the State Department are subject to a 14-day federal quarantine and are housed at two existing federal quarantine sites for repatriated travelers:
    - Travis Air Force Base in California
    - Joint Base San Antonio-Lackland in Texas
- No US citizens remain on the Diamond Princess.
- More than 50 Americans who were on board the *Diamond Princess* remain in Japan, hospitalized with COVID-19, including some who are reportedly severely ill.
- The US Government is taking measures to protect the health of the people under quarantine, their loved ones, and their communities, as well as the communities where they are being temporarily housed.
- Based on what is known about this virus and other coronaviruses, CDC believes the risk to the communities temporarily housing these people is low.

WHAT CDC IS DOING

CDC Response in the US:

- The federal government is working closely with state, local, tribal, and territorial partners, as well as public health partners, to respond to this public health threat.
- The goal of the ongoing US public health response is to detect new cases quickly and prevent further spread of COVID-19 in this country.
- CDC established a COVID-19 Incident Management Structure on January 7. On January 21, CDC activated its Emergency Operations Center to better provide ongoing support to the COVID-19 response.
- The US government has taken unprecedented steps with respect to travel in response to the growing public health threat posed by this new coronavirus.
    - Effective February 2, at 5pm, the US government suspended entry of foreign nationals who have been in China within the past 14 days.
        - US citizens, residents, and their immediate family members who have been in Hubei province and other parts of mainland China are allowed to enter the United States, but they are subject to health monitoring and possible quarantine for up to 14 days.
    - On February 29, the U.S. government announced it was suspending entry of foreign nationals who have been in Iran within the past 14 days.
    - CDC has issued the following travel guidance related to COVID-19:
        - China — Level 3, Avoid Nonessential Travel — updated February 22;
        - Hong Kong — Level 1, Practice Usual Precautions — issued February 19;
        - Iran — Level 3, Avoid Nonessential Travel — updated February 28;
        - Italy — Level 3, Avoid Nonessential Travel — updated February 28;
        - Japan — Level 2, Practice Enhanced Precautions — updated February 22;

        - South Korea — Level 3, Avoid Nonessential Travel — updated February 24.
    - CDC also recommends that all travelers reconsider cruise ship voyages into or within Asia at this time.
- CDC is issuing clinical guidance, including:
    - On January 30, CDC published guidance for healthcare professionals on the clinical care of COVID-19 patients.
    - On February 3, CDC posted guidance for assessing the potential risk for various exposures to COVID-19 and managing those people appropriately.
    - On February 27, CDC updated its criteria to guide evaluation of persons under investigation for COVID-19.
    - On February 28, CDC issued a Health Alert Network (HAN): Update and Interim Guidance on Outbreak of COVID-19.
- CDC has deployed multidisciplinary teams to support state health departments with clinical management, contact tracing, and communications.
- CDC has helped mobilize state health departments to receive returned repatriated travelers.
    - Through the Public Health Emergency Preparedness (PHEP) cooperative agreement, 62 state PHEP programs across the country are part of the multi-agency infrastructure working on quarantine, isolation, case finding, protecting health care workers and assuring medical supply chains.
    - State PHEP programs stand ready to address future developments in the outbreak.
- CDC has worked with the Department of State, supporting the safe return of Americans who have been stranded as a result of the ongoing outbreaks of COVID-19 and related travel restrictions. CDC has worked to assess the health of passengers as they return to the United States and provided continued daily monitoring of people who are quarantined.
- An important part of CDC's role during a public health emergency is to develop a test for the pathogen and equip state and local public health labs with testing capacity.
    - After distribution of a CDC rRT-PCR test to diagnose COVID-19 to state and local public health labs started, performance issues were identified related to a problem in the manufacturing of one of the reagents. Laboratories were not able to verify the test performance.
    - CDC worked on two potential resolutions to this problem.
        - CDC developed a new protocol that uses two of the three components of the original CDC test kit to detect the virus that causes COVID-19 after establishing that the third component, which was the problem with the original test, can be excluded from testing without affecting accuracy.
            - CDC is working with FDA to amend the existing Emergency Use Authorization (EUA) for the test, but in the meantime, FDA granted discretionary authority for the use of the original test kits.
        - Further, newly manufactured kits have been provided to the International Reagent Resource for distribution.
            - On February 27, CDC distributed new test kits to 7 laboratories to serve as evaluation sites to ensure health departments are able to verify the

assay. On February 29, 6 of 7 pilot laboratories reported successful completion of the verification panel.
        - An additional 40 test kits were hand carried to IRR for repackaging and distribution to additional public health labs.
        - On February 28, IRR began to distribute new test kits to the additional 40 laboratories.
    - Combined with other reagents that CDC has procured, there are enough testing kits to test more than 75,000 people.
    - In addition, CDC has two laboratories conducting testing for the virus that causes COVID-19. CDC can test approximately 350 specimens per day.
    - CDC has been uploading the entire genome of the viruses from reported cases in the United States to GenBank as sequencing was completed.
    - CDC has grown the virus in cell culture, which is necessary for further studies, including for additional genetic characterization. The cell-grown virus was sent to NIH's BEI Resources Repository for use by the broad scientific community.

Internationally:

Note: Due to the rapidly changing situation, any statements on CDC involvement in China need case-by-case clearance.

- CDC is working diligently and closely with partners to support the response to this novel coronavirus outbreak.
- CDC has staff stationed in more than 60 countries across the globe. CDC has offices in China, in a number of the countries reporting cases of COVID-19, and in countries that have not yet reported cases of COVID-19 but are busy with planning and preparedness efforts.
    - CDC and the government of China have collaborated for the past 30 years addressing public health priorities affecting the US, China, and the world.
- In addition to working with host country officials, CDC staff are working in coordination with Department of State and other agencies within US embassies.
- CDC is mobilizing Atlanta-based staff to support the response. Many of these staffers have extensive experience responding to global outbreaks.
- CDC has identified experts who are prepared to join a planned WHO mission to support efforts to better understand the severity and transmissibility of the virus.
- In China, CDC is an important technical partner for the Chinese Field Epidemiology Training Program (FETP). and has been involved in the program since 2004.
    - More than 800 FETP-trained residents or graduates of FETP are supporting ongoing COVID-19 response efforts.
    - In 2019 specialized FETP training tracks were established in non-communicable diseases and tuberculosis.
- CDC has supported China CDC's national influenza laboratory for more than 20 years.

- CDC works in close partnership with the China CDC's National Influenza Epidemiology, Virology, and Pandemic Preparedness Centers, China's provincial and local CDCs, hospitals, and academic institutions.
- CDC supports Chinese partners in monitoring seasonal and novel influenza viruses, as well as enhancing efforts to detect and respond to seasonal, avian, and other novel influenza viruses with pandemic potential. CDC's key supporting activities include:
    - Strengthening influenza surveillance for seasonal and novel influenza viruses
    - Conducting research to estimate disease burden and vaccine effectiveness among populations at greatest risk (including young children, older adults, and pregnant women)
    - Promoting influenza vaccination policy development and coverage
    - Supporting novel virus risk assessments
    - Establishing pandemic influenza preparedness in China
    - Maintaining close ties between US and China influenza experts
- In other countries, CDC is collaborating with WHO to support Ministries of Health to prepare and respond to the epidemic.
    - CDC is helping to support countries to implement WHO recommendations related to the diagnosis and care of patients, tracking the epidemic, and identifying people who might have COVID-19.
    - CDC staff are also starting to work together with country colleagues to conduct investigations that will help inform response efforts going forward.
    - CDC works closely with countries to establish FETPs that train a workforce of field epidemiologists —or disease detectives— to identify and contain outbreaks close to the source.
    - For country-specific information, please contact CDCglobal@cdc.gov.

RECOMMENDATIONS

- CDC routinely advises that people help protect themselves from respiratory illnesses by washing their hands often, avoiding touching their face with unwashed hands, avoiding close contact with people who appear sick, and cleaning frequently touched surfaces.
    - CDC defines close contact as—
        - Being within about 6 feet (2 meters) of someone with COVID-19 for a prolonged period of time, such as living with, visiting, caring for or sharing a room in a healthcare facility

          - *or* –
        - By having direct contact with infectious secretions from a patient, such as being coughed on.
    - If you are a resident in a community where person-to-person spread of COVID-19 has been detected and you develop COVID-19 symptoms, call your healthcare provider and tell them about your symptoms.

- For people who are ill with COVID-19, but are not sick enough to be hospitalized, please follow CDC guidance on how to reduce the risk of spreading your illness to others. People who are mildly ill with COVID-19 are able to isolate at home during their illness.

Recent Travelers to Geographic Areas with Sustained Spread:

- If you were in geographic areas with sustained spread (China, Iran, Italy, Japan, or South Korea) and feel sick with fever, cough, or difficulty breathing, within 14 days after leaving the country, you should:
  - Seek medical advice. Before you go to a doctor's office or emergency room, call ahead and tell them about your recent travel and your symptoms.
  - Avoid contact with others.
  - Not travel while sick.
  - Cover your mouth and nose with a tissue or your sleeve (not your hands) when coughing or sneezing.
  - Clean your hands often by washing them with soap and water for at least 20 seconds or using an alcohol-based hand sanitizer that contains at least 60% alcohol immediately after coughing, sneezing or blowing your nose. Soap and water should be used if hands are visibly dirty.

People Confirmed to Have, or Being Evaluated for, COVID-19:

- Your doctors and public health staff will evaluate whether you can be cared for at home. If it is determined that you can be isolated at home, you will be monitored by staff from your local or state health department. You should follow the prevention steps below until a healthcare professional or local or state health department says you can return to your normal activities. Detailed information is available at Interim Guidance for Preventing COVID-19 from Spreading to Others in Homes and Communities.
  - Stay home except to get medical care.
  - Separate yourself from other people in your home.
  - Call ahead before visiting your doctor.
  - Wear a facemask.
  - Cover your coughs and sneezes with a tissue or cough or sneeze into your sleeve.
  - Wash your hands often with soap and water for at least 20 seconds.
  - Avoid sharing household items like eating utensils, cups, or linens.
  - Monitor your symptoms and seek prompt medical attention if your symptoms worsen.

On February 27, CDC updated interim guidance for state and local public health officials on how to assess and manage the risks posed by patients who may have been exposed to this new coronavirus.

- This guidance establishes four risk categories: High, Medium, Low and No Identifiable Risk.
- The categories are based on a person's travel history and possible contact with patients who have laboratory-confirmed infections.
- The guidance **offers recommendations** for movement restrictions and public health evaluations for people in different risk categories.

- **In most cases, state and local authorities will make these decisions. Federal public health authority primarily extends to international arrivals at ports of entry and preventing interstate communicable disease threats.**
- These guidelines are subject to change as the situation requires. They do not apply retroactively to people who have been in an affected area with sustained transmission during the previous 14 days and are already in the United States, or those being managed as part of a contact investigation.
- CDC will provide separate guidance for healthcare settings.

Close Contacts of Patients Under Investigation:

People who have had close contact with someone who is confirmed to have, or being evaluated for, COVID-19, should:

- Monitor your health starting from the day you first had close contact with the person and continue for 14 days after you last had close contact with the person. Watch for these signs and symptoms:
    - Fever—take your temperature twice a day.
    - Coughing.
    - Shortness of breath or difficulty breathing.
    - Other early symptoms to watch for are chills, body aches, sore throat, headache, diarrhea, nausea, vomiting, and runny nose.
- **If you develop fever or any of these symptoms, call your healthcare professional right away.**
    - **Before** going to your medical appointment, be sure to tell your healthcare professional about your close contact with someone who is confirmed to have, or being evaluated for, COVID-19. This notification will help the healthcare professional's office take steps to keep other people from getting infected. Ask your healthcare professional to call the local or state health department.
- If you do not have any symptoms, you can continue with your daily activities, such as going to work, school, or other public areas.
- Detailed information for caregivers and household members can be found on the Interim Guidance for Preventing COVID-19 from Spreading to Others in Homes and Communities web page.

For Healthcare Professionals:

Patients in the United States who meet the following criteria should be evaluated as a patient under investigation (PUI) in association with the outbreak of COVID-19.

Clinical Features	&	Epidemiologic Risk
Fever **or** signs/symptoms of lower respiratory illness (e.g., cough or shortness of breath)	**AND**	Any person, including healthcare workers, who has had close contact with a laboratory-confirmed COVID-19 patient within 14 days of symptom onset
Fever **and** signs/symptoms of a lower respiratory illness (e.g., cough or shortness of breath)	**AND**	A history of travel from **affected geographic areas** (i.e., countries with CDC Travel Health Notices at warning levels 2 or 3) within 14 days of symptom onset
Fever **and** signs/symptoms of acute lower respiratory illness (e.g., pneumonia, ARDS) requiring hospitalization and without alternative explanatory diagnosis (e.g., influenza)	**AND**	No source of exposure has been identified

Note: The criteria are intended to serve as guidance for evaluation. In consultation with public health departments, patients should be evaluated on a case-by-case basis to determine the need for testing. Testing may be considered for deceased persons who would otherwise meet the PUI criteria. The above criteria are available on the Interim Guidance for Healthcare Professionals web page.

- In addition to the above criteria, infants born to mothers with confirmed COVID-19 should be considered PUIs. As such, infants should be isolated according to the Infection Prevention and Control Guidance for PUIs.

Recommendations for Reporting, Testing, and Specimen Collection:

- Clinicians should immediately implement recommended infection prevention and control practices if a patient is suspected of having COVID-19. They should also notify infection control personnel at their healthcare facility and their state or local health department if a patient is classified as a PUI for COVID-19.
- State health departments that have identified a PUI or a laboratory-confirmed case should complete a PUI and Case Report form through the processes identified on CDC's Coronavirus Disease 2019 website.
- State and local health departments can contact CDC's Emergency Operations Center (EOC) at 770-488-7100 for assistance with obtaining, storing, and shipping appropriate specimens to CDC for testing, including after hours or on weekends or holidays.
- Currently, diagnostic testing for COVID-19 is being performed at state public health laboratories and CDC. Testing for other respiratory pathogens should not delay specimen testing for COVID-19.

- For initial diagnostic testing for SARS-CoV-2, CDC recommends collecting and testing upper respiratory tract specimens (nasopharyngeal AND oropharyngeal swabs). CDC also recommends testing lower respiratory tract specimens, if available.
- For patients who develop a productive cough, sputum should be collected and tested for SARS-CoV-2. The induction of sputum is not recommended.
- For patients for whom it is clinically indicated (e.g., those receiving invasive mechanical ventilation), a lower respiratory tract aspirate or bronchoalveolar lavage sample should be collected and tested as a lower respiratory tract specimen.
- Specimens should be collected as soon as possible once a PUI is identified, regardless of the time of symptom onset. See Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens from Patients Under Investigation (PUIs) for COVID-19 and Biosafety FAQs for handling and processing specimens from suspected cases and PUIs.
- Clinical specimens should be collected from PUIs for routine testing of respiratory pathogens at either clinical or public health labs. Note that clinical laboratories should NOT attempt viral isolation from specimens collected.
- Maintain proper infection control when collecting specimens.
- Additional guidance for collection, handling, and testing of clinical specimens is available on CDC's website.
- Detailed information on specimen types and shipping can be found on the Information for Laboratories web page.

COMMUNITY BASED INTERVENTIONS (AKA COMMUNITY MITIGATION)

- The current risk to Americans for COVID-19 is low, but Americans should be prepared for the possibility of a COVID-19 outbreak in their community. Everyone has a role to play.
- Currently a vaccine is not available for COVID-19. Until a vaccine is developed, community-based interventions, such as school dismissals, event cancellations, social distancing, plans to work remotely can help slow the spread of coronavirus.
- Your local public health department and community partners have been preparing for an event, like COVID-19 and have plans in place. Now is a good time for businesses, community and faith-based organizations, schools, and health-care systems to reexamine their preparedness plans to make sure they are ready.
- Strong community partnerships between local health departments, the health care sector, faith-based organizations, and other community partners are vital for this response, and will be necessary to prepare for and coordinate if an outbreak occurs.
- Community-based interventions can be grouped in three categories:
    - Personal protective measures (e.g., voluntary home isolation of ill persons, voluntary home quarantine of exposed household members, covering nose/mouth when coughing or sneezing, hand hygiene, using face masks in community settings when ill)
    - Community measures aimed at increasing social distancing (e.g., school dismissals, social distancing in workplaces, postponing or cancelling mass gatherings)
    - Environmental measures (e.g., routine cleaning of frequently touched surfaces)

CDC'S Approach to Community-Based Interventions

- The federal guidance provided by CDC is intentionally broad to allow flexibility for states and local health governments to tailor guidance to their circumstances. An intervention/ approach that is appropriate for one community with local transmission won't necessarily be appropriate for another community with no local transmission.
- Local health departments should evaluate and adapt CDC guidelines and recommendations based on local conditions and with input from community partners.
- The community can take measures to reduce the spread of the COVID-19. CDC recommends working with the local health department and community partners to determine options that make the most sense. Potential measures include dismissal of students from school and closure of childcare facilities, social distancing of adults in the community and workplace, which may include cancellation of large public (or mass) gatherings and encouraging teleworking and alternate work schedules to decrease social density.

Household/Personal Protective Measures

- Everyone can do their part to help plan for, prepare, and respond to this emerging public health threat.
- Handwashing with soap and water is one of the best ways to protect against the virus.
- Creating a household emergency plan can help protect your health and the health of those you care about.
- CDC recommends that individuals/households create an emergency plan of action, practice good personal health habits and plan for home-based care (if needed), be prepared for your child's school or childcare facility to be temporarily dismissed, and plan for changes at your workplace.
- During an outbreak in your community, stay home when you are sick with COVID-19 symptoms, keep away from others who are sick, and limit face-to-face contact with others.

Community Measures

- Mass gatherings:
    - Mass gatherings and events, such as concerts, festivals, conferences, worship services, and sporting events, increase the chance of a virus, like COVID-19, to spread and infect people crowded together within a close proximity.
    - You may need to modify, postpone, or cancel your event. CDC recommends working with the emergency operations coordinator or planning team at your venue and staying informed about the local COVID-19 situation in your area.
    - CDC is in the process of creating a planning guide to help event organizers and staff plan and prevent the introduction of COVID-19 into their mass gathering or event.
- Community and faith-based organizations:
    - Local leaders and community organizers play a vital role to bring the community together to help plan for and reduce the impact of a potential COVID-19 outbreak. Since you know your community members the best, you can ensure groups most vulnerable to COVID-19 are considered and included in the planning process.

        - CDC recommends finding out if your local government has a private-public emergency planning group that meets regularly that you can join. If not, suggest one that should be set up. Building strong alliances before a pandemic can help provide your organization with the support and resources needed.
        - CDC is in the process of a planning guide to help you create an emergency plan for your community and faith-based organization.
- Administrators of U.S. childcare programs and K-12 schools:
    - Schools should plan for and prepare for a potential community-level outbreak of COVID-19. Fortunately, many of the steps to plan and prepare for COVID-19 are the same steps schools take to keep students healthy and safe from the flu.
    - CDC recommends childcare and K-12 school officials:
        - Collaborate with local health departments and partners to review, update, and implement emergency operations plans.
        - Develop information-sharing systems with partners that can be used for day-to-day reporting and disease surveillance to identify unusual rates of absenteeism.
        - Review attendance and sick leave policies; encourage students and staff to stay home when sick and establish procedures to ensure student and staff who become sick at school or arrive at school sick are sent home as soon as possible.
        - Perform routine environmental cleaning.
        - Create communications plans for use with the school community.
    - The decision to dismiss a school should be made locally. CDC recommends working with local health officials to determine if, when, and for how long schools may need to be dismissed in the event of an outbreak. (NOTE: DOE does not recommend using “school closure” terminology.)
    - School administrators should plan to provide critical support services, such as continuity of education and continuity of school meal programs, if schools are dismissed.
    - CDC has created interim guidance for administrators of U.S. childcare programs and K-12 schools to help plan, prepare, and respond to COVID-19.

HAND HYGIENE IN COMMUNITY SETTINGS (ENVIRONMENTAL MEASURES)

- Handwashing is one of the best ways to protect yourself and your family from getting sick.
- Clean hands can stop germs from spreading from one person to another and throughout an entire community—from your home and workplace to childcare facilities.
- Wash your hands often with soap and water for at least 20 seconds, especially after blowing your nose, coughing, or sneezing; going to the bathroom; and before eating or preparing food.
- If soap and water are not readily available, use an alcohol-based hand sanitizer with at least 60% alcohol.
- Always wash hands with soap and water if hands are visibly dirty.
- Follow these steps to make sure you wash your hands properly:

1. Wet your hands with clean, running water (warm or cold), turn off the tap, and apply soap.
2. Lather your hands by rubbing them together with the soap. Lather the backs of your hands, between your fingers, and under your nails.
3. Scrub your hands for at least 20 seconds. Need a timer? Hum the "Happy Birthday" song from beginning to end twice.
4. Rinse your hands well under clean, running water.
5. Dry your hands using a clean towel or air dry them.

INFECTION PREVENTION AND CONTROL FOR HEALTHCARE SETTINGS

- Healthcare personnel (HCP) are on the front lines of caring for patients with confirmed or possible COVID-19. HCP caring for these patients have an increased risk of exposure to this virus.
- HCP can minimize their risk of exposure when caring for confirmed or possible COVID-19 patients by following CDC infection prevention and control (IPC) guidelines, including use of recommended personal protective equipment (PPE).
- Based on what CDC knows now related to severity, transmission efficiency, and shedding duration, CDC is currently recommending Standard, Contact, and Airborne Precautions, including eye protection, when caring for patients with confirmed or possible COVID-19.
- As CDC learns more about COVID-19, and as the needs of the response within US healthcare facilities change, CDC will refine and update this early and aggressive IPC approach.
- Infection control procedures and appropriate use of PPE are necessary to prevent infections from spreading while caring for patients. CDC reminds all employers and HCP that PPE is only one aspect of safe care of patients with COVID-19.
    - Focusing only on PPE gives a false sense of security of safe care and worker safety.
    - It is critical to focus on other pathways to prevent spread of COVID-19 in healthcare settings. Examples include prompt screening and triage, limiting personnel in the room, and using Airborne Infection Isolation Rooms (AIIR).
- CDC's current guidelines are designed to prevent the spread of COVID-19 within healthcare facilities to healthcare personnel and other patients who may be exposed to a patient with confirmed or possible COVID-19.
- Healthcare personnel caring for patients with confirmed or suspected COVID-19 should adhere to CDC recommendations for infection prevention and control (IPC):
    - Assess and triage patients with acute respiratory symptoms and risk factors for COVID-19 to minimize chances of exposure. Place a facemask on the patient and isolate them in an AIIR, if available.
    - Use Standard, Contact, and Airborne Precautions, including eye protection, when caring for patients with confirmed or possible COVID-19.
    - Perform hand hygiene with alcohol-based hand sanitizer before and after all patient contact, before and after contact with potentially infectious material, and before

putting on and upon removal of PPE, including gloves. Use soap and water if hands are visibly soiled.
    - Practice how to properly don, use, and doff PPE in a manner to prevent self-contamination.
    - Perform aerosol-generating procedures (e.g., sputum induction, open suctioning of airways) in an AIIR, while following appropriate IPC practices, including use of appropriate PPE.
    - The collection of respiratory specimens (e.g., nasopharyngeal swabs) are likely to induce coughing or sneezing. HCP collecting specimens for testing for COVID-19 from patients with known or suspected COVID-19 (i.e., PUI) should adhere to Standard, Contact, and Airborne Precautions, including the use of eye protection. These procedures should take place in an AIIR or in an examination room with the door closed. Ideally, the patient should not be placed in any room where room exhaust is recirculated within the building without HEPA filtration.
    - Healthcare facilities can minimize the chance for exposures by ensuring facility policies and practices are in place and implemented before patient arrival, upon patient arrival, and throughout the duration of the affected patient's time in the healthcare setting.
- Healthcare facilities should promptly notify state or local public health authorities of patients with known or possible COVID-19 (i.e., persons under investigation or PUIs), and should designate specific persons within the healthcare facility who are responsible for communication with public health officials and dissemination of information to HCP.
- All healthcare facilities should ensure that their personnel are correctly trained and capable of implementing infection control procedures. Individual healthcare personnel should ensure they understand and can adhere to infection control requirements.
- Routine cleaning and disinfection procedures are appropriate for SARS-CoV-2 in healthcare settings, including those patient-care areas in which aerosol-generating procedures are performed.
    - Products with EPA-approved emerging viral pathogens claims are recommended for use against SARS-CoV-2, the virus that causes COVID-19.
- Management of laundry, food service utensils, and medical waste should also be performed in accordance with routine procedures. Federal, state, and local guidelines and regulations specify the categories of medical waste that are subject to regulation and outline the requirements associated with treatment and disposal.
- As a reminder, the role of face masks is for source control, and not to prevent exposure.
- CDC recommends that employees who are confirmed to have COVID-19, those who appear to have acute respiratory illness symptoms upon arrival to work, and persons who become sick during the work day promptly put on a facemask, be separated from other people, and be sent home immediately.
- If facemasks are not available, sick healthcare personnel should cover their noses and mouths with a tissue when coughing or sneezing (or an elbow or shoulder if no tissue is available).

WHAT CDC IS DOING TO PROTECT HEALTHCARE PERSONNEL

- CDC is providing regular communication to the US healthcare community through targeted outreach activities.
- CDC is rapidly developing guidance and resources to protect US healthcare personnel. Current guidance and recommendations are designed to protect healthcare personnel and prevent the spread of the virus that causes COVID-19 within US healthcare facilities.
- CDC has deployed field teams to provide onsite infection control assessment and consultation to the US healthcare facilities currently treating confirmed COVID-19 patients and the passengers returning from China.
- CDC is preparing first responders, healthcare providers, and health systems, by:
    - Establishing visibility across healthcare systems to understand healthcare use, particularly surges in demand for medical care and associated resources.
    - Conducting extensive outreach to clinical and hospital professional organizations to ensure health system preparedness.
    - Producing guidance documents on infection control, hospital clinical evaluation and patient management.
    - Working closely with healthcare facilities and providers to reinforce infection control principles that recognize PPE is one component of a larger set of practices that help to limit the spread of disease.
    - Developing a range of respirator conservation strategies, including strategies to make supplies last longer (such as using alternative products like reusable respirators) and extending the use of disposable respirators.
    - Leveraging existing telehealth tools to direct people to the right level of care.
    - Working with supply chain partners to understand supply usage, what products are available, and when more aggressive measures may need to be taken to ensure that HCPs at highest risk have access to PPE.
    - Sharing information with stakeholders to help them recognize when to shift the strategies they are using.
- Healthcare personnel (HCP) often have prolonged close contact with patients in healthcare settings and may come in contact with a person infected with COVID-19. HCPs can protect themselves by properly following recommended infection control practices, including the appropriate use of PPE when caring for patients with COVID-19.
- CDC recommends evaluating asymptomatic HCPs with close contact or a potential exposure to COVID-19 by assessing risk, monitoring symptoms, and determining appropriate work restrictions.

MANAGEMENT OF PATIENTS GUIDANCE FOR HEALTHCARE PROVIDERS

Clinical Presentation

- Most frequently reported symptoms of COVID-19 include fever, cough, sore throat, myalgia, or fatigue. Less commonly reported symptoms include sputum production, headache, hemoptysis, and diarrhea. Older patients and people with chronic medical conditions may be at higher risk of severe illness.
    - Possible risk factors for progressing to severe illness may include, but are not limited to, older age and underlying chronic medical conditions such as lung disease, cancer, heart failure, cerebrovascular disease, renal disease, liver disease, diabetes, immunocompromising conditions, and pregnancy.

Clinical Course

- Symptoms among reported cases of COVID-19 vary in severity from mild illness to severe or fatal illness.
- Some reports suggest the potential for clinical deterioration during the second week of illness.
- Among hospitalized patients with confirmed COVID-19, some will develop complications:
    - Acute respiratory distress syndrome (ARDS)
    - Intensive care for respiratory support
    - Pneumonia resulting in death
    - Secondary infection

Laboratory and Radiographic Findings

- SARS-CoV-2 RNA has been detected from upper and lower respiratory tract specimens, and the virus has been isolated from bronchoalveolar lavage fluid.
- The duration of shedding of SARS-CoV-2 RNA in the upper and lower respiratory tracts is not yet known but may be several weeks or longer.

Clinical Management and Treatment

- No specific treatment for COVID-19 is currently available. Prompt infection prevention and control measures and supportive management of complications is recommended.
- Patients with mild clinical presentation may not initially require hospitalization.
- The decision to monitor a patient in the inpatient or outpatient setting should be made on a case-by-case basis.

INTERIM GUIDANCE FOR BUSINESSES AND EMPLOYERS (NON-HEALTHCARE SETTINGS)

- Interim guidance for businesses and employers to plan for and respond to COVID-19 is now available on CDC's website. This interim guidance may help prevent workplace exposures to acute respiratory illnesses, including COVID-19, in non-healthcare settings. The guidance also provides planning considerations if there are more widespread, community outbreaks.
- Employers can use strategies now to prevent workplace exposures to acute respiratory illness:

    - Actively encouraging sick employees to stay home
    - Separating sick employees
    - Emphasizing staying home when sick, respiratory etiquette, and hand hygiene by all employees
    - Performing routine environmental cleaning
    - Advising employees before traveling to take certain steps
    - Checking the CDC's Traveler's Health Notices website for the latest guidance and recommendations for each country to which you will travel
- For the general public, who are unlikely to be exposed to this virus, the immediate health risk from COVID-19 is considered low at this time. Some people, like healthcare workers caring for COVID-19 patients and other close contacts of COVID-19 patients, will have an increased risk of infection.
    - Employees who are well but who have a sick family member at home with COVID-19 should notify their supervisor and refer to CDC guidance for how to conduct a risk assessment of their potential exposure.
    - If an employee is confirmed to have COVID-19, employers should inform fellow employees of their possible exposure to COVID-19 in the workplace but maintain confidentiality as required by the Americans with Disabilities Act. Employees exposed to a co-worker with confirmed COVID-19 should refer to CDC guidance for how to conduct a risk assessment of their potential exposure.
- Employers should be ready to implement strategies to protect the workforce from COVID-19 while ensuring the continuity of operations.
    - An infectious disease outbreak response plan should include possible work-related exposures and health risks to employees. The plan should also explore flexible worksites (e.g., telecommuting) and work hours in accordance with human resource policies.

Consular Notification Guidance for State and Local Authorities Regarding Foreign Nationals Detained for Medical Reasons

SUMMARY: Given the scale and international scope of the novel coronavirus outbreak, the U.S. Department of State is providing this guidance to state and local authorities that are monitoring and treating individuals who are or are reasonably believed to be infected with the virus SARS-CoV-2 or COVID-19 disease. Since some individuals being monitored and/or treated may be foreign nationals, the U.S. Department of State would like to ensure that those individuals detained for medical reasons are advised that they may communicate with consular officers from their countries and, when requested or required, foreign embassies and consulates in the United States are informed. We ask that where notification is requested or required, state and local authorities, in coordination with the Centers for Disease Control and Prevention (CDC), notify foreign missions promptly. Consular notification obligations are reciprocal; your prompt action will support the Department of State's receipt of timely notification of U.S. citizens who are detained for medical reasons in foreign countries. Questions about obligations of state and local authorities or consular notification and access in general, should be directed to the Bureau of Consular Affairs, U.S. Department of State at consnot@state.gov.

Consular Notification and Access Obligations with Respect to Detained Foreign Nationals

Under the treaty obligations of the United States, federal, state, and local government officials are obligated to provide notification information to certain foreign consular officers and permit those officers to assist their nationals in the United States. When foreign nationals from most countries are detained, they must be advised without delay that they may, upon request, have their consular officers notified, and that they may communicate with the consular officers. If the foreign national requests notification, the nearest consulate or embassy must be notified without delay. For foreign nationals of some countries, consular officers must be notified of the detention, even if the foreign national does not request or want notification.

Who is a Foreign National?

For the purposes of consular notification, a foreign national is any person who is not a U.S. citizen. This includes lawful permanent resident aliens (LPRs), who have a resident alien registration card (Department of Homeland Security Form I-551), more commonly known as a "green card." They retain their foreign nationality and must be considered "foreign nationals" for the purposes of consular notification. Consular notification and access requirements apply regardless of immigration status. There is no reason, for purposes of consular notification, to inquire into a person's legal status in the United States. For purposes of consular notification, you should make no distinctions based on whether the foreign national is in the United States "legally" or "illegally."

If a U.S. citizen detained for medical reasons has more than one nationality and asks that his or her other country of nationality be notified, the U.S. Department of State encourages notification be made.

What is "detention for medical reasons" and why does it trigger consular notification?

Consular notification and access may be triggered for foreign nationals hospitalized, isolated, quarantined, or otherwise in circumstances in which the foreign national is detained *pursuant to governmental authority (law enforcement, judicial, or administrative)* and is not free to leave. Under the Vienna Convention on Consular Relations and most bilateral international agreements, a foreign

national in such situations must usually be treated like a foreign national in detention, and appropriate consular notification must be provided. Further, in the case of the death of a foreign national in the United States, the nearest consulate of that national's country must be notified without delay.

As a general matter, even where an individual is not detained for medical reasons, the U.S. Department of State encourages medical facilities that are treating foreign nationals to inform those individuals that they may contact their embassy or consulate.

When is Notification Mandatory?

If a foreign national is from one of the 56 mandatory notification countries, notification of the detention *must* be made. In such cases, notifications to the consular officer must be made without delay, even if the foreign national objects. See the *List of Countries Requiring Mandatory Notification* at travel.state.gov/CNA.

For all other countries, authorities must inform the foreign national that he or she may have a consular officer notified of the detention and may communicate with that officer. The foreign national can accept or decline the offer of notification. If the foreign national accepts the offer, notification should be made, in coordination with CDC, without delay to the appropriate consular officer.

What is the Timeline for Notification?

Whether the case requires mandatory notification or the foreign national has requested consular notification, the notification to the foreign government's nearest embassy or consulate should be made within 24-72 hours.

Who Notifies?

In the United States, responsibility for consular notification rests with those officials, whether federal, state, or local, who are responsible for the legal action affecting the foreign national. Compliance with the notification requirements works best when it is undertaken by those government officials closest to the foreign national's situation and with direct responsibility for it. If you are a state or local official with a foreign national detained for medical reasons (e.g., isolation or quarantine), the list of points of contact for consular notification at foreign embassies in Washington can be found here. Please contact the CDC at dgmqpolicyoffice@cdc.gov and notify the foreign mission (embassy or consulate) associated with the foreign national's citizenship.

Guidance and Questions

Instructions for carrying out consular notification and access and detailed information on best practices can be found in the *Consular Notification and Access Manual* on travel.state.gov/CNA. Questions about obligations of state and local authorities or consular notification and access in general, should be directed to the Bureau of Consular Affairs, U.S. Department of State at consnot@state.gov.

Last updated: March 1, 2020

CDC Coronavirus Disease 2019 (COVID-19) Guidance for State, Local, and Territorial Partners and Local Health Departments

Interim guidance documents relevant to State, Local, and Territorial partners regarding COVID-19

Highlighted Text= New since February 21, 2020

Aircraft

Interim Guidance for Airlines and Airline Crew: Coronavirus Disease 2019 (COVID-19)

- Interim guidance for the commercial airline industry about COVID-19

Preventing Spread of Disease on Commercial Aircraft: Guidance for Cabin Crew

- This guidance provides cabin crew with practical methods to protect themselves, passengers, and other crew members when someone onboard is sick with a possible contagious disease.

Safety Alert for Operators 20001: 2019 Novel Coronavirus: Interim Health Guidance for Air Carrier and Crews

- Interim guidance from the CDC and Federal Aviation Administration for Air Carriers and Crewmembers

Businesses, Employers, and Schools

Interim Guidance for Administrators of US Childcare Programs and K-12 Schools to Plan, Prepare, and Respond to Coronavirus Disease 2019 (COVID-19)

- This interim guidance is intended to help administrators of public and private childcare programs and K-12 schools prevent the spread of COVID-19 among students and staff.

Interim Guidance for Businesses and Employers to Plan and Respond to Coronavirus Disease 2019 (COVID-19), February 2020

- Interim guidance that may help prevent workplace exposures to acute respiratory illness, including COVID-19, in non-healthcare settings.

Community Infection Control

Interim Guidance for Preventing the Spread of Coronavirus Disease 2019 (COVID-19) in Homes and Residential Communities

- Interim guidance to help prevent COVID-19 from spreading among people in their homes and in other residential communities.

Interim Guidance for Discontinuation of In-Home Isolation for Patients with COVID-19

- Interim guidance to help healthcare providers and public health officials managing patients with coronavirus disease (COVID-19) under in-home isolation to help prevent the spread of COVID-19 in the community.

Last updated: March 1, 2020

Community Mitigation

CDC in Action: Preparing Communities for Potential Spread of COVID-19

- Information on how CDC is aggressively responding to the global outbreak of COVID-19 and preparing for the potential of community spread in the United States.

Healthcare Facilities

Interim Guidance for Healthcare Facilities: Preparing for Community Transmission of COVID-19 in the United States

- Outlines goals and strategies for all U.S. healthcare facilities to prepare for and respond to community spread of coronavirus disease-2019 (COVID-19).

Strategies to Prevent the Spread of COVID-19 in Long-Term Care Facilities (LTCF)

- General strategies CDC recommends to prevent the spread of COVID-19 in LTCF

Steps Healthcare Facilities Can Take Now to Prepare for Coronavirus Disease 2019 (COVID-19)

Healthcare Professionals and Infection Control

Evaluating and Reporting Persons Under Investigation (PUI)

- The Centers for Disease Control and Prevention (CDC) clinical criteria for a COVID-19 person under investigation (PUI). Subject to change as additional information becomes available.

Coronavirus Disease 2019 (COVID-19) Risk Assessment and Public Health Management Decision Making

- Flowchart for the evaluation of patients who may be ill with or who may have been exposed to COVID-19.

Interim Infection Prevention and Control Recommendations for Patients with Confirmed Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) or Persons Under Investigation for SARS-CoV-2 in Healthcare Settings

- Interim infection control procedures including administrative rules and engineering controls, environmental hygiene, correct work practices, and appropriate use of personal protective equipment (PPE) are all necessary to prevent infections from spreading during healthcare delivery. **This guidance is not intended for non-healthcare settings (e.g., schools) OR to persons outside of healthcare settings.**

Interim Guidance of Emergency Medical Services (EMS) Systems and 911 Public Safety Answering Points (PASPs) for COVID-19 in the United States

- Interim guidance for all first responders, including law enforcement, fire services, emergency medical services, and emergency management officials, who anticipate close contact with persons with confirmed or possible COVID-19 in the course of their work

Last updated: March 1, 2020

Interim Guidance for Collection and Submission of Postmortem Specimens from Deceased Persons Under Investigation (PUI) for COVID-19, February 2020

- Interim guidance for the collection and submission of postmortem specimens from deceased persons under investigation (PUI) for COVID-19. This document also provides recommendations for biosafety and infection control practices during specimen collection and handling, including during autopsy procedures. The guidance can be utilized by medical examiners, coroners, pathologists, other workers involved in the postmortem care of deceased PUI, and local and state health departments.

Interim Guidance for Discontinuation of Transmission-Based Precautions and Disposition of Hospitalized Patients with COVID-19

- Interim guidance for healthcare providers and public health officials managing patients with coronavirus disease (COVID-19) to help prevent the spread of COVID-19 in healthcare facilities.

Interim Clinical Guidance for Management of Patients with Confirmed COVID-19

- Interim guidance for clinicians caring for patients with confirmed COVID-19

Interim Guidance for Implementing Home Care of People Not Requiring Hospitalization for 2019 Novel Coronavirus (2019-nCoV)

- Interim guidance for staff at local and state health departments, infection prevention and control professionals, and healthcare personnel who are coordinating the home care and isolation[1] of people with confirmed or suspected 2019-nCoV infection, including persons under investigation (see Criteria to Guide Evaluation of Persons Under Investigation (PUI) for 2019- nCoV).

Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with 2019 Novel Coronavirus (2019-nCoV)

- Interim guidance intended to assist with assessment of risk, monitoring, and work restriction decisions for HCP with potential exposure to 2019-nCoV. For guidance on assessment and management of exposure risk in non-healthcare settings, refer to the Interim US Guidance for Risk Assessment and Public Health Management of Persons with Potential 2019 Novel Coronavirus (2019-nCoV) Exposure in Travel-associated or Community Settings.

Maritime

Interim Guidance for Ships on Managing Suspected Coronavirus Disease 2019

- Interim guidance for ships originating from, or stopping in, the United States to help prevent, detect, and medically manage suspected 2019-nCoV infections.

Last updated: March 1, 2020

Laboratories

Research Use Only Real-Time RT-PCR Protocol for Identification of 2019-nCoV

- This document describes the use of real-time RT PCR (rRT-PCR) assays for the in vitro qualitative detection of SARS-CoV-2 in respiratory specimens and sera.

Research Use Only 2019-Novel Coronavirus (2019-nCoV) Real-time RT-PCR Primer and Probe Information

Personal Protective Equipment (PPE)

Checklist for Healthcare Facilities: Strategies for Optimizing the Supply of N95 Respirators during the COVID-19 Response

Healthcare Supply of Personal Protective Equipment

- CDC specific PPE recommendations based on the current COVID-19 situation and availability of PPE.

Optimizing N95 Strategies

- Strategies for Optimizing the Supply of N95 Respirators

- Strategies for Optimizing the Supply of N95 Respirators: Contingency Capacity Strategies
    - In the continuum of care, the following measures can be categorized as contingency capacity, which may change daily practices but may not have any significant impact on the care delivered to the patient or the safety of the HCP.

- Strategies for Optimizing the Supply of N95 Respirators: Crisis/Alternate Strategies
    - These crisis capacity or alternate strategies accompany and build on the conventional and contingency capacity strategies. The following measures are not commensurate with current U.S. standards of care.

Release of Stockpiled N95 Filtering Facepiece Respirators Beyond the Manufacturer-Designated Shelf Life: Considerations for the COVID-19 Response

- U.S. Government decision makers are considering whether these products should be released for use during the COVID-19 response. Information is provided below that may be used to inform these product release decisions.

Public Health Officials

Information for Health Departments on Reporting a Person Under Investigation (PUI) for 2019-nCoV

- Information for health departments on reporting and specimen referral for Persons Under Investigation (PUIs).
    - Case Report Form for 2019 Novel Coronavirus

Last updated: March 1, 2020

Interim Guidance for Public Health Personnel Evaluating Persons Under Investigation (PUIs) and Asymptomatic Close Contacts of Confirmed Cases at Their Home or Non-Home Residential Settings

- Guidance is intended to address recommended infection prevention and control practices when public health interviews or assessments are performed at a home or non-home residential settings.

Pandemic Preparedness Resources

- While the content at the links provided below was developed to prepare for, or respond to, an influenza ("flu") pandemic, the newly emerged coronavirus disease 2019 (COVID-19) is a respiratory disease that seems to be spreading much like flu. Guidance developed for influenza pandemic preparedness would be appropriate in the event the current COVID-19 outbreak triggers a pandemic.

Pregnant Women and Children

Interim Guidance on Breastfeeding for a Mother Confirmed or Under Investigation for COVID-19

- Interim guidance for women who are confirmed to have COVID-19 or are persons-under- investigation (PUI) for COVID-19 and are currently breastfeeding.

Interim Considerations for Infection Prevention and Control of Coronavirus Disease 2019 (COVID-19) in Inpatient Obstetric Healthcare Settings

- Interim for healthcare facilities providing obstetric care for pregnant patients with confirmed coronavirus disease (COVID-19) or pregnant persons under investigation (PUI) in inpatient obstetric healthcare settings including obstetrical triage, labor and delivery, recovery and inpatient postpartum settings.

Travelers

Information for Travelers

- This page includes information about 2019 novel coronavirus (COVID-19) for travelers going to and returning from China, and information for aircrew and resources ship industry.

Travelers to China

- Travel recommendations for travel to China

Travelers from China arriving in the U.S.

- Information for travelers from China arriving to the U.S.

Risk Assessment

Interim US Guidance for Risk Assessment and Public Health Management of Persons with Potential 2019 Novel Coronavirus (COVID-19) Exposure in Travel-associated or Community Settings

- Interim guidance to provide U.S. public health authorities and other partners with a framework for assessing and managing risk of potential exposures to COVID-19 and implementing public health actions based on a person's risk level and clinical presentation.

Last updated: March 1, 2020

Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with 2019 Novel Coronavirus (2019-nCoV)

- Interim guidance is intended to assist with assessment of risk, monitoring, and work restriction decisions for healthcare providers with potential exposure to COVID-19.

Stigma

Stigma Related to COVID-19

- Information to combat stigma and discrimination associated with COVID-19.

Frequently Asked Questions (FAQs)

Frequently Asked Questions and Answers about COVID-19

- General FAQs

Healthcare Infection Prevention and Control FAQs for COVID-19

- **Who is this for:** Healthcare personnel who may care for patients who are confirmed with or under investigation for COVID-19.
- **What is it for:** This creates FAQs to support the existing Healthcare Infection Prevention and Control Guidance for COVID-19.
- **How is it used:** To assist healthcare facilities in preventing transmission of COVID-19 in healthcare settings.

Frequently Asked Questions and Answers: Coronavirus Disease-2019 (COVID-19) and Children

- This is a list of frequently asked questions and answers for questions about COVID-19 relating to children.

Frequently Asked Questions and Answers: Coronavirus Disease 2019 (COVID-19) and Pregnancy

- This is a list of frequently asked questions and answers for pregnant women, infants, and women who are breastfeeding.

Frequently Asked Questions about Respirators and their Use

Healthcare Professionals: Frequently Asked Questions and Answers

- FAQs for healthcare professionals

Information for Laboratories COVID-19 Requests for Diagnostic Panels and Virus

- FAQs for lab professionals

Travel: Frequently Asked Questions and Answers

- General travel-related FAQs

Last updated: March 1, 2020

Additional Resources

2020 Health Alert (HAN) Messages: CDC's Health Alert Network (HAN) is CDC's primary method of sharing cleared information about urgent public health incidents with public information officers; federal, state, territorial, tribal, and local public health practitioner; clinicians; and public health laboratories.

CDC Newsroom: CDC Media Telebriefing: Update on COVID-19: CDC provides an update periodically to media on the COVID-19 response. Sign up for media announcements.

Clinician Outreach and Communication Activity (COCA) Calls/Webinars: During COCA Calls/Webinars, subject matter experts present key emergency preparedness and response topics, followed by meaningful Q&A with participants. The call or webinar will offer the most up to date information on guidance for clinicians.

Travel Health Notices: Travel Health Notices inform travelers and clinicians about current health issues that impact travelers' health, like disease outbreaks, special events or gatherings, and natural disasters, in specific international destinations.

Coronavirus Disease 2019 (COVID-19) Risk Assessment and Public Health Management Decision Making

Interim Cleaning Recommendations for Facilities Housing Persons Under Quarantine for Coronavirus Disease 2019 (COVID-19), Updated February 29, 2020

Background

There is much to learn about the newly emerged coronavirus disease 2019 (COVID-19). Based on what is known about early cases of COVID-19, spread from person-to-person via the respiratory route and usually happens among close contacts (within about 6 feet).

People with certain types of exposure to cases of COVID-19 may be housed and quarantined for observation until 14 days after their exposure. The purpose of the observation period is to ensure they don't develop symptoms and infect others during this time. Some people stay at home for the observation period, but others may be housed either separately or in groups in other types of facilities.

In these facilities, individuals and families are provided separate quarters with separate bathroom facilities. They are instructed that congregation and shared public spaces are to be avoided. Because the people under quarantine are not ill, the risk to cleaning staff is inherently low.

Purpose

This guidance provides recommendation on the cleaning and disinfection of rooms of persons under quarantine, as well as associated worker protection practices according to expected job tasks. The goal is to minimize interactions between persons under quarantine and cleaning staff. These recommendations will be updated if additional information becomes available.

General Recommendations for Housing Facilities for Persons Under Quarantine

- Employers should develop policies for worker protection and provide training to all cleaning staff on-site prior to beginning work. Training should include:
    - An understanding of when to use personal protective equipment (PPE)
    - What PPE is necessary and why (see below for PPE recommendations)
    - How to properly don (put on), use, and doff (take off) PPE
    - How to properly dispose of PPE
- Employers must ensure workers are trained on the hazards of the cleaning chemicals used in the workplace in accordance with OSHA's Hazard Communication standard, 29 CFR 1910.1200.
- Employers must comply with OSHA's standards on Bloodborne Pathogens (29 CFR 1910.1030), including proper disposal of regulated waste, and PPE (29 CFR 1910.132).
- Cleaning staff should perform hand hygiene often including immediately after removing PPE by washing hands with soap and water for 20 seconds. If soap and water are not available and hands are not visibly dirty, an alcohol-based hand sanitizer that contains 60%-95% alcohol may be used. However, if hands are visibly dirty, always wash hands with soap and water.
- Cleaning staff should immediately report breaches in PPE (e.g., tear in gloves) or any potential exposures (e.g., contact with a quarantined individual without wearing appropriate PPE) to their supervisor.

- Employers should educate workers to recognize the symptoms of COVID-19 and provide instructions on what to do if they develop symptoms until 14 days after the last day they had possible exposure to the virus.
    - Cleaning staff should immediately notify their supervisor and the local health department if they develop symptoms of COVID-19. The health department will provide guidance on what actions need to be taken.
- Cleaning staff should follow normal preventive actions while at work and home including covering their mouth and nose with a tissue when coughing or sneezing and avoiding touching eyes, nose, or mouth with unwashed hands.
- If surfaces are dirty, they should be cleaned using a detergent and water prior to disinfection.
    - A list of products with EPA-approved emerging viral pathogens claims, maintained by the American Chemistry Council Center for Biocide Chemistries (CBC), is available at: https://www.americanchemistry.com/Novel-Coronavirus-Fighting-Products-List.pdf.
    - Products with EPA-approved emerging viral pathogens claims are expected to be effective against COVID-19 based on data for harder to kill viruses.
    - Follow the manufacturer's instructions for all cleaning and disinfection products (e.g., concentration, application method and contact time, PPE) for use.

Cleaning Activities During the Quarantine Period

Because cleaning needs are limited during the quarantine period, CDC is recommending that cleaning staff do not clean occupied rooms in quarantine facilities. Instead, all rooms should be provisioned with personal cleaning supplies, e.g., tissues, paper towels, cleaners and disinfectants that are EPA-approved against emerging viral pathogens (see list above) for use by persons under quarantine as needed. Rooms and common areas occupied by persons under quarantine should not be cleaned by cleaning staff until all persons under quarantine have been released from quarantine and have vacated the area and no sooner than 24 hours after rooms and common areas have been vacated.

During the quarantine:

- Persons under quarantine should bag trash and place the closed bag outside their door for daily pick up.
- Similarly, persons under quarantine should bag soiled linens and place the closed bag outside their door for pick up.
- Cleaning, laundry, and trash removal staff should wear disposable gloves and gowns for all tasks in the cleaning process, including collection of closed bags.
    - Staff should remove gloves after cleaning a room or area occupied by persons under quarantine before moving to the next room.
    - After delivering bags to their final destination, staff should clean and disinfect any hard, cleanable surfaces where bags have been stored (such as on carts or on the floor).
    - Laundry and trash removal staff collecting the closed bags should remove their gloves promptly after bags are delivered to their destination and cleaning and disinfection has been performed.
    - Any time staff remove gloves, they should perform hand hygiene immediately by washing their hands with soap and water for 20 seconds. If hands are not visibly dirty and soap and water are not available, an alcohol-based hand sanitizer that contains

60%-95% alcohol may be used. However, if hands are visibly dirty, always wash hands with soap and water.

- If possible, for fabrics or other materials that can be laundered, use the warm water setting and dry items completely on high heat.
- If a person under quarantine has a special need for assisted cleaning (e.g., an elderly person who is unable to clean a spill such as vomiting in their quarters), public health staff will oversee the cleaning process as part of their evaluation of the individual.

Cleaning a Room Vacated by a Person under Quarantine <u>with</u> COVID-19 (Enhanced Cleaning)

Rooms that housed a person under quarantine with COVID-19 should remain closed to further use until cleaned and disinfected by appropriately trained cleaning staff. The room should not be entered by cleaning staff for at least for 24 hours.

- Cleaning staff should wear disposable gloves and gowns for all tasks in the cleaning process.
    - These gloves and gowns should be compatible with the disinfectant products being used
    - Additional PPE might be required based on the cleaning/disinfectant products being used and whether there is a risk for splash.
    - Gloves and gowns should be removed carefully to avoid contamination of the wearer and the surrounding area.
- Cleaning should be undertaken using products with EPA-approved emerging viral pathogens claims (https://www.americanchemistry.com/Novel-Coronavirus-Fighting-Products-List.pdf). All products should be used according to label instructions.
    - Clean the surface first, and then apply the disinfectant as instructed on the disinfectant manufacturer's label. Ensure adequate contact time for effective disinfection.
    - Adhere to any safety precautions or other label recommendations as directed (e.g., allowing adequate ventilation in confined areas, proper disposal of unused product or used containers and donning appropriate PPE).
    - Avoid using product application methods that cause splashing or generate aerosols.
    - Cleaning activities should be supervised and inspected periodically to ensure correct procedures are followed.
    - After cleaning and removal and disposal of gloves, staff should perform hand hygiene by washing hands often with soap and water for at least 20 seconds or using an alcohol-based hand sanitizer that contains 60 to 95% alcohol. Soap and water should be used if the hands are visibly soiled.
- Clean and disinfect all frequently touched surfaces in quarantine locations (e.g., counters, tabletops, doorknobs, light switches, bathroom fixtures, toilets, phones, keyboards, tablets, remotes and bedside tables) according to instructions described for products with EPA-approved emerging viral pathogens claims.
- For soft (porous) surfaces such as carpeted floor, rugs, and drapes, remove visible contamination if present. Launder items as appropriate in accordance with the manufacturer's instructions. Porous materials that will be laundered can be transported to the laundry facility in the usual manner. If possible, launder items using the warm water setting and dry items completely on high heat.

- When cleaning is completed, collect soiled material and PPE in a sturdy, leak-proof (e.g., plastic) bag that is tied shut and not reopened. This waste can go to the regular solid waste stream (e.g., municipal trash) as it is not biohazardous or regulated medical waste.
- If bulk material and spills containing blood or body substances are present, cleaning staff should use absorbent materials, such as towels, to remove the material. The area should then be cleaned and then disinfected with products with EPA-approved emerging viral pathogens claims used according to product label instructions.
- No additional cleaning is needed for supply and return ventilation registers or filtration systems for the building.
- No additional treatment of wastewater is needed before discharging to sanitary sewer.

Cleaning Recommendations for Quarantined Persons from Uncontrolled Sources (e.g. increased likelihood of many cases such as on cruise ships, etc.)

Cleaning for facilities housing persons under quarantine because of exposure from an uncontrolled source should be conducted following the Enhanced Cleaning procedures and include cleaning of common areas outlined above.

Cleaning a Room Vacated by persons under quarantine without COVID-19

After all persons under quarantine are released and assuming the quarantined persons are not from an uncontrolled source (see above):

- If all persons under quarantine have been released and vacated the housing area and no persons tested positive for COVID-19, the facility (e.g., rooms, common areas) should be cleaned according to standard procedures.
- No additional PPE is required beyond what is normally worn for regular housekeeping activities.

Cleaning of Common Areas of a Housing Facility (if used)

If common areas are used by persons under quarantine, those areas will require cleaning and disinfection during the quarantine period.

- Common areas of a facility should be cleaned on a daily basis, and as needed.
- Regardless of known COVID-19 status of persons under quarantine, common areas should be cleaned according to ***Cleaning a Room Vacated by a person under quarantine with COVID-19(Enhanced Cleaning)*** recommendations, since communication to cleaning staff about persons under quarantine who develop symptoms or test positive for COVID-19 may not be able to occur as quickly as cleaning services are required.
- No quarantined individuals should be present in a common area during cleaning. Common areas of a facility should be closed off to all persons except for cleaning staff before cleaning and disinfection activities take place.

Additional Resource:

OSHA COVID-19 Website:
https://www.osha.gov/SLTC/covid-19/

From: Podczervinski, Sara T (DOH)
To: Montgomery, Patricia A (DOH); Kay, Meagan; Clark, Shauna; Brostrom-Smith, Claire
Cc: Hensley, Joni L (DOH); Lewis, Larissa C (DOH)
Subject: Documents, etc - COVID
Date: Monday, March 2, 2020 8:33:02 AM
Attachments: image011.png
image012.png
image013.png
image014.png
image015.png
SocialDistancingGuidance COVID-19 PDF.pdf
SocialDistancingGuidance.docx
Preserving PPE in Healthcare COVID 19.docx
Preserving PPE in Healthcare COVID 19.pdf
PPE checklist_mask.docx
Outpatient Guidance for COVID 19.docx
Interim_2019NovelCoronavirusQuicksheetProviders_2-28-20.docx
PHL_Testing_02_28_2020.pdf

Hi Patty, Meagan, Shauna, and Claire,

I attached a few documents:
-Social Distancing – would be helpful for mildly ill symptomatic persons. If this needs to be tweaked to better fit the need – say the word!
-Preserving PPE in healthcare
-Outpatient guidance (just finalized this last night so it's not posted)
-PPE Checklist – for nursing homes. This is for masks, not N95s
-PHL Lab Testing

We are finalizing the guidance for LTC this morning. It's close to done.

Also, we would like to schedule a webinar for LTC facilities across the state -- for later this week – Wed or Thurs. Just to review infection procedures and answer questions. I plan on getting an invite out today. Hope that's ok. If you have concerns, let me know.

Let me know if you need anything else.

I'm available today for a site visit at Evergreen if help is needed.
Thanks,
Sara

Sara Podczervinski, RN, MPH, CIC, FAPIC
Healthcare-Associated Infections and Antimicrobial Resistance Program Manager
Office of Communicable Disease Epidemiology
Disease Control and Health Statistics
Washington State Department of Health

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M

Washington State Department of Health

Social Distancing Guidance for Persons with Potential Exposure to 2019 Novel Coronavirus (COVID-19)

You can help stop the spread of COVID-19

You have been identified as a person who may have been exposed to COVID-19. This guidance explains restrictions on your travel and activities to prevent spread to others. You should also follow any symptom and fever **monitoring instructions** you were given. These restrictions will be in place for the 14 days from the time of your last possible exposure, or as instructed by your Local Public Health Jurisdiction (LHJ).

Regardless of any restrictions on your travel or activities, if you have fever or any symptom listed on the monitoring form, immediately call the local health jurisdiction:_____; if not available call the Washington State Department of Health at 206-418-5500.

To the extent possible, remain at home or in a comparable setting.	Remain out of public places where close contact with others may occur (e.g., shopping centers, movie theaters, stadiums), workplaces (unless the work is in an office space that allows distancing from others), schools and other classroom settings, and local public conveyances (e.g., bus, subway, taxi, ride-share).
It is recommended that you postpone long-distance travel.	
Clean your hands.	Wash your hands often with soap and water for at least 20 seconds. If soap and water are not available, clean your hands with an alcohol-based hand sanitizer that contains at least 60% alcohol, covering all surfaces of your hands and rubbing them together until they feel dry. Soap and water should be used preferentially if hands are visibly dirty. Avoid touching your eyes, nose, and mouth with unwashed hands.
Cover your coughs and sneezes.	Cover your mouth and nose with a tissue when you cough or sneeze. Throw used tissues in a lined trash can and wash your hands with soap and water or apply alcohol-based hand sanitizer that contains at least 60% alcohol.
Avoid sharing personal household items.	You should not share dishes, drinking glasses, cups, eating utensils, towels, or bedding with other people in your home. After using these items, they should be washed thoroughly with soap and water.
Monitor your symptoms according to the directions provided by your LHJ.	**Seek prompt medical attention if your illness is worsening** (e.g., shortness of breath or difficulty breathing). **Before seeking care**, call your healthcare provider and tell them that you have, or are being evaluated for, COVID-19 infection. **Put on a facemask that covers your nose and mouth before you enter the facility.** After you put on the facemask, clean your hands with soap and water or alcohol-based hand sanitizer. These steps will help the healthcare provider's office to keep other people from getting infected or exposed. Your healthcare provider may call the LHJ for additional guidance. If the LHJ has told you that you are under active monitoring please follow the instructions that were provided to you by the LHJ or your employer's occupational health department.
Discontinuing these restrictions.	Patients with confirmed COVID-19 infection should remain under home isolation precautions through this date:_____or as instructed by your LHJ.

Washington State Department of Health

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You have been identified as a person who may have been exposed to COVID-19. This guidance explains restrictions on your travel and activities to prevent spread to others. You should also follow any symptom and fever **monitoring instructions** you were given. These restrictions will be in place for the 14 days from the time of your last possible exposure, or as instructed by your Local Public Health Jurisdiction (LHJ).

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Discontinuing these restrictions.	Patients with confirmed COVID-19 infection should remain under home isolation precautions through this date:_____or as instructed by your LHJ.

2/16/20

2019 Novel Coronavirus (COVID-19) Response: Optimizing Use of Personal Protective Equipment (PPE)

Background

The Centers for Disease Control and Prevention (CDC) recommends the use of a hierarchy of controls in healthcare settings to prevent transmission of 2019 Novel Coronavirus (COVID-19) infections, which are caused by the virus SARS-CoV-2. These include:

Control Type	Description
Engineering	Reduce exposures by placing a barrier between health care personnel and the people who may be infected. Engineering controls can be very effective as part of a suite of strategies to protect healthcare workers (HCW) without placing primary responsibility of implementation on them (i.e., they function without HCW having to take an action).
Administrative	Refers to employer-dictated work practices and policies that reduce or prevent hazardous exposures. Their effectiveness depends on employer commitment and HCP acceptance and consistent use of the strategies.
Personal Protective Equipment (PPE) and Respiratory Protection	The use of PPE should also be part of a suite of strategies used to protect personnel. Proper use of respiratory protection by HCW requires a comprehensive program (including medical clearance, training, and fit testing) that complies with Occupational Safety and Health Administration's (OSHA) Respiratory Protection Standard and a high level of HCW involvement.

Healthcare personnel should adhere to **Standard**, **Contact**, and **Airborne Precautions**, including the use of eye protection (e.g., goggles or a face shield) when caring for patients with COVID-19 infection. These precautions include the use of the following PPE:

✓ NIOSH approved fit-tested N-95 respirator or higher such as a powered air-purifying respirator (PAPR)	✓ Eye protection (e.g., goggles, or a disposable face shield that covers the front and sides of the face)
✓ Isolation gown	✓ Clean, nonsterile gloves

Engineering Controls

- Patients with known or suspected COVID-19 should be placed in an airborne infection isolation room (AIIR) that has been constructed and maintained in accordance with current guidelines.
  - In spaces not currently designated for AIIR, consider heating, ventilation, air conditioning (HVAC) capacity to manipulate airflow, consider direction of air flow, filtration and exchanges rates.
- Reduce HCW exposures to ill patients through placement of physical barriers. Examples include as glass/ plastic windows in reception areas where patients may first report or arrive to health-care facility and the use of curtains between patients in shared areas and closed suctioning systems for airway suctioning for intubated patients.

If you need this document in an alternative format, call 800.525.0127 (for TDD/TTY call 711).

Administrative Controls

Before Patient Arrives at Healthcare Facility

- *Limit number of patients going to hospital or outpatient settings.* Develop mechanisms to screen patients for acute respiratory illness prior to their non-urgent care or elective visits or procedures, such as through the appointment reminder system. Triaging persons to the appropriate level of care will reduce the influx of patients to healthcare facilities seeking evaluation.
- *Practice telehealth*. Use nurse advice lines and telemedicine to screen and manage patients who may be infected with COVID-19.
- *Postpone and reschedule visits*, especially for those with COVID-19 symptoms presenting for these non-acute visits.
- *Limit the unanticipated arrivals of symptomatic stable persons to healthcare facilities* by conducting active outreach to symptomatic patients (e.g., Ecare message reminders for patients).

During Healthcare

- *Source control.* Patients with symptoms of respiratory infection should wear a facemask (i.e., surgical or procedure masks). Patients with symptoms should not use N95 respirators.
- *Limit face-to-face HCW encounters with patient.* Approaches to minimize the number of HCW providing direct care to patients with known or suspected COVID-19 include:
  - Bundle patient care activities.
  - Use of tablet, telephone, computer, and cell phone for verbal and video communication.
  - Develop visitor exception policies based on end-of-life situations or other situations when visitor is essential to the patient's emotional well-being.
- *Cohorting patients and HCW*. Cohorting is the practice of grouping together patients who are infected with the same organism to confine their care to one area and prevent contact with other patients. Cohorts are created based on clinical diagnosis, microbiologic confirmation when available, epidemiology, and mode of transmission of the infectious agent. Assigning designated teams of HCW to provide care for all patients with suspected or confirmed COVID-19 could minimize respirator use.

Strategies for Optimizing PPE Use

- Minimize contact with people who may be infected through engineering and administrative controls.
- Use alternatives to N95 respirators (e.g., other classes of filtering facepiece respirators, elastomeric half-mask and full facepiece air-purifying respirators, powered air-purifying respirators) where feasible.
- Implement practices allowing extended use and/or limited reuse of N95 respirators and PAPRS, when acceptable.
- Prioritize use of N95 respirators for those HCW at the highest risk of acquiring infection.
- Consider pausing mandatory HCW masking polices for asymptomatic employees who did not receive the influenza vaccine.
- Conserve facemasks by limiting use to symptomatic patients.
- Prioritize locations of masks to prevent theft (e.g., reception staff provide masks to symptomatic patients).

Resources

- CDC Strategies for Optimizing the Supply of N95 Respirators: https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirator-supply-strategies.html
- NIOSH Guidance for Extended Use and Limited Reuse of N95s: https://www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html

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✓ NIOSH approved fit-tested N-95 respirator or higher such as a powered air-purifying respirator (PAPR)	✓ Eye protection (e.g., goggles, or a disposable face shield that covers the front and sides of the face)
✓ Isolation gown	✓ Clean, nonsterile gloves

Engineering Controls

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- NIOSH Guidance for Extended Use and Limited Reuse of N95s: https://www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html

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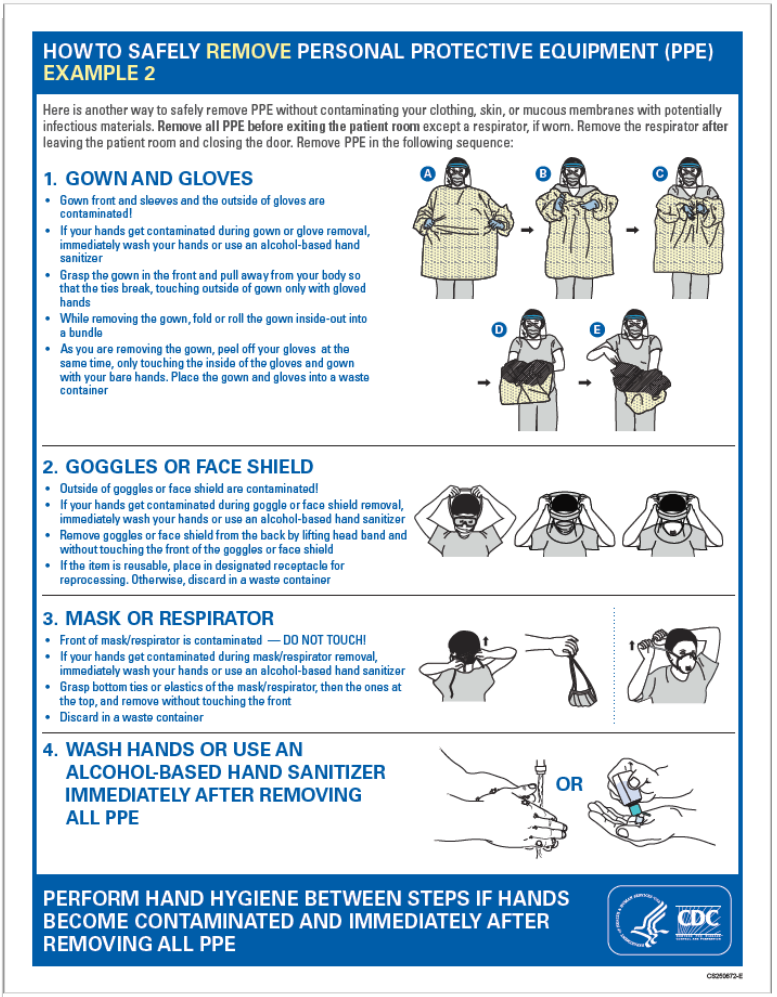
Washington State Department of Health

Personal Protective Equipment (PPE) Competency Validation

Donning and Doffing – Gown, Gloves, Mask, Eye Protection

Donning PPE	Correct	Incorrect
1. **Perform Hand Hygiene**		
2. **Don Gown:** • Fully covering torso from neck to knees, arms to end of wrists • Fasten in the back of neck and waist		
3. **Don Mask** • Secure ties/elastic bands at middle of head & neck • Fit flexible band to nose bridge • Fit snug to face and below chin		
4. **Don Goggles or Face Shield:** • Place over face and eyes and adjust to fit		
5. **Don Gloves:** • Extend to cover wrist of gown		
Doffing PPE		
1. **Remove Gloves:** • Using a gloved hand, grasp outside of glove with opposite gloved hand; peel off • Hold removed glove in the opposite gloved hand • Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove • Discard gloves in waste container • Outside of the gloves are contaminated. If your hands get contaminated during glove removal, immediately wash your hands or use alcohol-based hand sanitizer		
2. **Remove Goggles or Face Shield:** • Remove from the back by lifting head band or ear pieces • Discard in designated receptacle if re-processed or in waste container • Outside of the goggles or face shield are contaminated. If your hands get contaminated during goggles or face shield removal, immediately wash your hands or use alcohol-based hand sanitizer		
3. **Remove Gown:** • Unfasten ties/fastener taking care that sleeves don't contact your body when reaching for ties • Pull away from neck and shoulders, touching inside of gown only • Turn gown inside out • Fold or roll into bundle and discard • Gown front and gown sleeves are contaminated. If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer		
4. **Remove Mask:** • Front of the mask is contaminated – DO NOT TOUCH! • If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer • Grasp bottom, then top ties or elastics and remove without touching the front of the mask • Discard in waste container		
5. **Perform Hand Hygiene after removing all PPE** • Wash hands with soap and water for at least 20 seconds OR • Use an alcohol-based hand sanitizer • Perform hand hygiene between steps if hands become contaminated		

Standard Precautions & Transmission Based Precautions	Correct	Incorrect
23. Staff correctly identifies the appropriate PPE for the following scenarios:		
a. Standard Precautions (PPE to be worn based on anticipated level of exposure)*		
b. Contact/Contact Enteric Precautions (gown & gloves)		
c. Droplet Precautions (surgical mask with eye protection)		
d. Airborne Precautions (fit-tested respirator if applicable)		



https://www.cdc.gov/hai/pdfs/ppe/ppe-sequence.pdf

Comments or follow up actions:

2019 Novel Coronavirus (COVID-19) Response: Infection Prevention for Outpatient Settings

Background

This document provides guidance for outpatient settings evaluating persons for 2019 Novel Coronavirus (COVID-19) or caring for persons with confirmed COVID-19. Information on prompt detection and effective triage and isolation protocols of potentially infectious patients is described. Effective infection control protocols in the outpatient setting can prevent unnecessary exposures among patients, healthcare personnel, and visitors at the facility.

Definition of Healthcare Personnel (HCP) – For the purposes of this guidance, HCP refers to all persons, paid and unpaid, working in healthcare settings engaged in patient care activities, including patient assessment for triage, entering examination rooms or patient rooms to provide care or clean and disinfect the environment, obtaining clinical specimens, handling soiled medical supplies or equipment, and coming in contact with potentially contaminated environmental surfaces.

Healthcare personnel should adhere to **Standard**, **Contact**, and **Airborne Precautions**, including the use of eye protection (e.g., goggles or a face shield) when caring for patients with COVID-19 infection. These precautions include the use of the following PPE:

<table>
<tr><td rowspan="2"> 
</td><td>✓ NIOSH approved fit-tested N-95 respirator or higher such as a powered air-purifying respirator (PAPR)</td><td>✓ Eye protection (e.g., goggles, or a disposable face shield that covers the front and sides of the face)</td></tr>
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</table>

Visual Alerts

Post visual alerts (in appropriate languages) at the entrance to outpatient facilities (e.g., emergency departments, physician offices, outpatient clinics) instructing patients and persons who accompany them (e.g., family, friends) to inform HCP of symptoms of a respiratory infection and any recent travel history when they first register for care and to practice respiratory hygiene and cough etiquette.

Respiratory Hygiene and Cough Etiquette

Recommend that all persons with signs and symptoms of a respiratory infection the following measures to contain respiratory secretions:

- Cover your mouth and nose with a tissue when coughing or sneezing;
- Use nearest waste receptacle to dispose of the tissue after use;
- Perform hand hygiene (e.g., handwashing with non-antimicrobial soap and water, alcohol-based hand rub, or antiseptic handwash) after having contact with respiratory secretions and contaminated objects/materials. Wash hands with soap and water if they are visibly soiled.

Ensure the availability of materials for adhering to respiratory hygiene and cough etiquette in waiting areas and patient care area for patients and visitors.

- Provide tissues and no-touch receptacles for used tissue disposal.
- Provide conveniently located dispensers of alcohol-based hand rub. Where sinks are available, ensure that supplies for hand washing (i.e., soap, disposable towels) are consistently available.

Masking and Separation of Persons with Respiratory Symptoms

Offer masks to persons who are coughing. Either procedure masks (i.e., with ear loops) or surgical masks (i.e., with ties) may be used by patients and visitors to contain respiratory secretions (respirators such as N-95 or above are not necessary for this purpose). Minimize the time patients with acute respiratory symptoms spend in waiting area by placing them in a private room or encourage coughing persons to sit at least six feet away from others in common waiting areas. Persons escorting patient to private room should maintain a distance of 6 feet from masked patient while in a public area. Once patient is roomed, staff should only enter in recommended PPE.

Please Note: Clinics that lack resources to safely provide care for patients being evaluated for or confirmed to have COVID-19 ***should identify a facility where patients can be safely evaluated and arrange transport****. Depending on acuity of illness, transportation may involve EMS. The outpatient clinic should communicate the patient's COVID-19 evaluation status to receiving facility and EMS.*

Steps to minimize exposure when the arrival of a patient with known or suspected COVID-19 is anticipated:

1. Use pre-visit communication systems through telephone and text appointment reminders or patient portals if available.
2. Conduct active outreach to patients to instruct those at risk for COVID-19, such as travel from China or other affected areas in last 14 days or contact with a person with COVID-19, to call before their clinic appointment.
3. If possible, schedule appointment at the end of day or at a time when clinic is not busy.
4. When scheduling appointments by phone, provide instructions to persons with signs or symptoms of COVID-19 on how to arrive at the clinic, including which entrance to use and the precautions to take (e.g., how to notify clinic staff, don a facemask upon entry, follow triage procedures).
5. Provide surgical or procedure mask to the patient and place immediately in an Airborne Infection Isolation Room (AIIR), if available. If AIIR or room with negative air pressure is not available, place the patient in a private exam room and close door.
6. Perform aerosol-generating procedures, including collection of diagnostic respiratory specimens in an AIIR while following appropriate infection prevention and control (IPC) practices, including use of appropriate PPE.
7. Use dedicated or disposable noncritical patient-care equipment (e.g., blood pressure cuffs), when possible. If equipment will be used for more than one patient, clean and disinfect such equipment before use on another patient according to manufacturer's instructions.

Steps to minimize exposure if when a patient with known or suspected COVID-19 arrives and is not anticipated:

1. Consider posting signage on entrance doors where patients could arrive without calling ahead. Provide masks to allow symptomatic patients to don prior to entering clinic. See https://www.doh.wa.gov/Portals/1/Documents/1600/AirborneRespiratorContactPrecautionSign-nCoV.PDF.
2. Have a screening process in place to quickly identify patients with suspected COVID-19. Provide a mask to all patients with respiratory symptoms and instruct on proper use. Encourage hand hygiene with soap and water or alcohol-based hand sanitizer. Persons escorting a patient to a private room should maintain a distance of 6 feet from the masked patient while in a public area. Once patient is roomed, staff should only enter in recommended PPE.
3. Limit the number of personnel and visitors entering the room. Encourage those accompanying the patient to use their own transportation to go to the receiving facility rather than ride in transport vehicle.
4. As soon as patient is identified as suspicious for COVID-19, place the patient in an AIIR.
   a) If an AIIR is not available, place in a private room, with the door closed.
   b) If placed in an AIIR, the patient may remove their facemask.
   c) If placed in a non-AIIR, the patient should keep the facemask on, except as needed for physical examination or specimen collection, replacing when wet or soiled.
   d) Establish procedures for monitoring, managing and training visitors. When at all possible, visitors should be restricted from entering the room of known or suspected COVID-19 patients. All visitors should follow respiratory hygiene and cough etiquette precautions while in the common areas of the facility.
5. If indicated, perform aerosol-generating procedures, including collection of diagnostic respiratory specimens, in an AIIR, while following appropriate IPC practices, including use of appropriate PPE.
6. Use dedicated or disposable noncritical patient-care equipment (e.g., blood pressure cuffs), when possible. If equipment will be used for more than one patient, clean and disinfect such equipment before use on another patient according to manufacturer's instructions.

Steps to arrange for transport of suspected COVID-19 patient to another facility

1. Initiate protocol to transfer patient to a health care facility that has the recommended infection control capacity to safely manage the patient, if needed.
2. When COVID-19 is suspected in a patient needing emergency transport, prehospital care providers and healthcare facilities should be notified in advance that they will be caring for, transporting, or receiving a patient who may have COVID-19.

Steps to minimize exposure after the patient leaves:

1. Once the patient leaves, the exam room should remain vacant for up to two hours before anyone enters. Adequate wait time may vary depending on the ventilation rate of the room and should be determined accordingly. See Table B 1 " Air changes/hour (ACH) and time required for airborne-contaminant removal by efficiency" From the 2003 Guidelines for Environmental Infection Control in Health-care Facilities

Table B.1. Air changes/hour (ACH) and time required for airborne-contaminant removal by efficiency *

ACH § ¶	Time (mins.) required for removal 99% efficiency	Time (mins.) required for removal 99.9% efficiency
4	69	104
6+	46	69
8	35	52
10+	28	41
12+	23	35
15+	18	28
20	14	21
50	6	8

* This table is revised from Table S3-1 in reference 4 and has been adapted from the formula for the rate of purging airborne contaminants presented in reference 1435.
+ Denotes frequently cited ACH for patient-care areas.
§ Values were derived from the formula: $t2 - t1 = -[\ln(C2 / C1) / (Q / V)] \times 60$, with $t1 = 0$

2. If staff need to enter the room before recommended ventilation time has elapsed, staff must wear a NIOSH approved fit-tested N95 or PAPR.
3. Use dedicated or disposable noncritical patient-care equipment (e.g., blood pressure cuffs), when possible. If equipment will be used for more than one patient, clean and disinfect such equipment before use on another patient according to manufacturer's instructions.
4. Use products with EPA-approved emerging viral pathogens claim when disinfecting equipment and surfaces.
5. If there are no available EPA-registered products with an approved emerging viral pathogen claim, use products with label claims against human coronaviruses, or enveloped or non-enveloped viruses, according to label instructions.

Patient Disposition

1. **Home care:** Patients going home with suspected COVID-19 should adhere to appropriate transmission-based isolation precautions until the risk of secondary transmission is thought to be low. Current information on COVID-19 is limited, thus home precautions should be conservative based on general recommendations for other coronaviruses, like Middle Eastern Respiratory Syndrome (MERS), and may last up to 14 days.
   See https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-prevent-spread.html
2. **Hospital:** Notify the transportation team and the receiving hospital to ensure measures are implemented before patient arrival, upon arrival, and throughout the duration of the affected patient's presence in the healthcare setting. Ensure receiving facility policies and practices are in place to minimize exposures to respiratory pathogens including COVID-19.
   See https://www.cdc.gov/coronavirus/2019-nCoV/hcp/infection-control.html

Staff Management

1. Clinics should keep a log of all persons who care for **or** enter the room or care area of patients with suspected or confirmed COVID-19.
2. Movement and monitoring decisions for HCP with exposure to COVID-19 should be made in consultation with public health authorities. Review the most current *Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with 2019 Novel Coronavirus (2019-nCoV).* See https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html
3. Facilities and organizations providing healthcare should implement sick leave policies for HCP that are non-punitive, flexible, and consistent with public health guidance. See https://www.cdc.gov/infectioncontrol/guidelines/healthcare-personnel/index.html

COVID-19 Assessment Information:
Evaluating Persons with Fever and Acute Respiratory Illness (updated 2/28/2020)

- **Obtain a detailed travel history on ALL patients being evaluated for fever and acute respiratory illness.**
- **Use the assessment criteria below to determine if COVID-19 should be included in the differential diagnosis.**

Name:	**DOB:**	**Interview date:**
Address:		**Phone:**

Assessment Criteria	**Yes**	**No**	**Comments**
A) Did/Does the patient have a fever? (Fever may not be present in some patients, use clinical judgement to guide testing.)			**Fever onset date:** ____/____/_____ **Highest measured temperature:** _____ □ °F □ °C □ Check if SUBJECTIVE fever only
B) Does the patient have symptoms of lower respiratory illness (LRI) (e.g. cough or shortness of breath)?			**Symptom onset date:** ____/____/____ □ Cough □ Sore throat □ Difficulty breathing **Other Symptoms (list):**_____
C) Does the patient require hospitalization for severe LRI (e.g., pneumonia, ARDS)?			
D) Has the patient tested negative for other common respiratory pathogens? (e.g., influenza)?			
E) In the 14 days before symptom onset, did the patient: **i. Have close contact with a lab-confirmed COVID-19 patient?**			**Dates of contact with COVID-19 lab-confirmed case:** ___/___/____to___/___/___ **Name of COVID-19 lab-confirmed case (if known):** _____ **Nature of contact:** □ Family/Household □ Coworker □ Healthcare worker □ Travel □ Other: _____ **Comments**:_____
ii. Travel from affected geographic areas*? CDC Coronavirus Travel Information: https://www.cdc.gov/coronavirus/2019-ncov/travelers/index.html			**Dates:** ___/___/____ to ___/___/_____ **Arrival in US:** ____/____/_____ **Locations visited in 14 days before symptom onset:**

Suspect COVID-19 if you answered YES to

- **A or B and Ei, OR**
- **A and B and C and Eii, OR**
- **A and B and C and D**

***If patient does not meet case definition but there is a high index of clinical suspicion, contact LHJ.**

IMMEDIATELY:

❑ **Ensure that the patient is masked and isolated** in a private room with the door closed AND

❑ **Ensure that healthcare personnel entering the room use standard, contact, AND airborne precautions, INCLUDING eye protection** (e.g., goggles or face shield that covers the front and sides of the face).

- Note: Airborne precautions includes use of fit-tested NIOSH-certified N95 filtering facepiece respirator or higher.

❑ **Notify your healthcare facility's infection control personnel.**

❑ **Perform any clinically indicated respiratory and other diagnostic tests and note results below:**

Rapid Influenza: □ A □ B	Neg □ Pos □ Pending □ Not Done
Rapid Strep	Neg □ Pos □ Pending □ Not Done
Viral Respiratory Panel	Neg □ Pos □ Pending □ Not Done
Pneumonia	Neg □ Pos □ Pending □ Not Done
Legionella	Neg □ Pos □ Pending □ Not Done
Other: _____	Neg □ Pos □ Pending □ Not Done
Other: _____	Neg □ Pos □ Pending □ Not Done

Other clinically relevant testing:

Chest X-Ray □ Not Done □ Pending □ Normal

□ Abnormal: _____

Other: _____

Other: _____

❑ **Call your local health jurisdiction (LHJ) with the above information to discuss the case and determine whether to test for SARS-CoV-2.** (If after hours and the LHJ is not available, call the Washington State Department of Health at **206-418-5500**.)

❑ **If instructed by your local health department, collect two of the following samples for SARS-CoV-2 testing.**
https://www.doh.wa.gov/ForPublicHealthandHealthcareProviders/PublicHealthLaboratories/MicrobiologyLabTestMenu
□ Nasopharyngeal (NP) swab* □ Oropharyngeal (OP) swab* □ Sputum or BAL (if available)
**synthetic swab in 2-3 ml viral transport media*

Healthcare Provider & Facility Guidance: SARS-CoV-2 Testing at Washington State Public Health Laboratories

Testing for SARS-CoV-2, the cause of COVID-19 disease, is an important component for monitoring the impact of COVID-19 and for planning interventions. These guidelines for testing at Washington State Public Health Laboratories (PHL) are based on available information about the virus and CDC recommendations for testing.

To ensure timely and reliable test results from PHL, please make sure that:

A. **The patient meets criteria for testing at PHL (local health jurisdiction approval)**

B. **The specimen type is acceptable and has been collected properly**

C. **The specimen is labeled, packaged, and shipped properly**

A. Criteria for testing at PHL

Testing criteria may change frequently. Providers should consult with their local health jurisdiction for testing approval:
https://www.doh.wa.gov/AboutUs/PublicHealthSystem/LocalHealthJurisdictions

On 2/28/2020 the current SARS-CoV-2 testing criteria are:

1) Fever **or** lower respiratory symptoms/signs **AND** close contact (including healthcare work) with a laboratory-confirmed COVID-19 case within 14 days of symptom onset
2) Fever **and** lower respiratory symptoms/signs requiring hospitalization **AND** travel to an affected geographic (CDC level 2 or 3) within 14 days of onset; see: https://www.cdc.gov/coronavirus/2019-ncov/travelers/index.html
3) Fever with severe acute lower respiratory illness (e.g., pneumonia, ARDS) requiring hospitalization (or fatal) **and** without alternative explanatory diagnosis (test negative for other viral respiratory pathogens)
4) Local health officer request (any equivocal epidemiology or clinical symptoms)

Clinicians should consider and, as appropriate, continue investigating other potential causes of the symptoms while waiting for SARS-CoV-2 test results.

If SARS-CoV-2 testing is available at a commercial laboratory, immediately report positive results to the local health jurisdiction.

For specimen collection, testing and shipping details, and **COV** Specimen Submission Form see: https://www.doh.wa.gov/ForPublicHealthandHealthcareProviders/PublicHealthLaboratories/MicrobiologyLabTestMenu

See page 2 for summary of testing instructions.

B. Specimen collection for SARS-CoV-2 testing

Initiate isolation (home **or** in hospital standard, contact, and airborne precautions.)

Use appropriate personal protection while taking specimens, including at least: gown, gloves, NIOSH-certified fit-tested N-95 respirator or higher, and goggles (or face shield). **Ensure the container caps are closed tightly** after collection. Specimens that leak in transit will be rejected.

Submit two of the following specimens for each patient for SARS-CoV-2 PCR testing at PHL:

1. Nasopharyngeal swab
2. Sputum or BAL if available
3. Oropharyngeal swab, if no sputum or BAL

If a PHL test kit is available, follow instructions. For NP and OP swabs, use a synthetic swab (Dacron, polyester, or nylon) with plastic or metal shaft (**not** cotton, calcium alginate or wooden shaft.) The submitted swab must not have contact with reagents used for other tests. Place in viral or universal transport medium, label with date, specimen source, and two patient identifiers, and refrigerate until ready to ship. Sputum or BAL should go in sterile screw cap container. Freeze specimens (≤ -70^{o}C) if expected arrival at PHL is ≥72 hours after collection. Complete the **CoV** (**not Virology**) specimen submission form **including the SARS-CoV-2 approval number** from the local health jurisdiction.

C. Specimen shipping

PLEASE NOTE: PHL must receive specimens within **72 hours of collection at 2-8^{o}C** with chemical ice packs, or frozen and shipped with dry ice. Arrival after 10 AM will delay testing.

Specimens should be shipped Category B. The submitter must correctly package and label specimens to meet shipping regulations. Persons shipping medical specimens must have documented shipping training for packaging and labeling of Infectious Substances. Use a permanent marker to **write the approval number on the outer plastic packaging bag**.

Washington State Public Health Laboratories – Attention BT Laboratory
1610 NE 150th Street
Shoreline, WA 98155

D. PHL Testing Procedures

PHL uses an RT-PCR test developed by CDC. Turnaround time is 3-5 business days from receipt of specimens. Final results may be delayed if further work is needed, such as confirmatory testing by CDC. A positive result is considered presumptive and must be confirmed by CDC.

PHL presumptive and CDC confirmatory results are sent to the local health jurisdiction and to the submitter by autofax.

From:	Schaeffer, Cyndi
To:	Scappini, Stephanie
Subject:	FW: talking points for
Date:	Monday, March 2, 2020 12:38:00 PM
Attachments:	Talking points for City Cabinet update.docx COVID-19 Essential Talking Points 03.2.20.pdf image002.png

Could you print please attachments and this email. Oh please. oh please. James in my room

Cyndi Schaeffer (she/hers), PhD
Chief of Staff
Public Health - Seattle & King County
Cyndi.schaeffer@kingcounty.gov
206.477.3264

Making King County a Welcoming community where every person can thrive.

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Sent: Monday, March 2, 2020 12:34 PM
To: Schaeffer, Cyndi <Cyndi.Schaeffer@kingcounty.gov>
Cc: Burkland, Anne <Anne.Burkland@kingcounty.gov>
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-Susie

Public Health
Seattle & King County

Washington State Department of Health

March 2, 2020 11:15 a.m.

Contacts:

Public Health – Seattle & King County Media Line: 206-477-9000

Email: PHPIO@kingcounty.gov

Washington State Department of Health: 253-512-7100

Email: doh-pio@doh.wa.gov

Public Health confirms four new COVID-19 cases, bringing overall total to 14

King County to purchase motel, repurpose other properties in fight against COVID-19

Summary:

Public Health – Seattle & King County announced on Monday four additional confirmed cases of COVID-19 in King County residents, bringing the total of confirmed cases to fourteen. King County Executive Dow Constantine signed an Emergency Declaration, enabling county government to take extra steps to fight COVID-19. Among the first actions: purchasing a motel and setting up modular housing units on publicly-owned parking lots and other available land.

Story:

On Sunday, March 1, Executive Constantine signed a Proclamation of Emergency in response to COVID-19, enabling "extraordinary measures" to fight the outbreak, including waiving some procurement protocols, and authoring overtime for King County employees, among other powers.

Executive Constantine immediately ordered the purchase of an area motel to be used to isolate patients in recovery as well as those in active treatment. The acquisition is expected to be finalized in a matter of days and available to Public Health by the end of the week. Location details will be made available when the transaction is complete.

In addition, King County will place modular units on public properties in locations throughout King County.

"We have moved to a new stage in the fight to contain and mitigate this outbreak. King County is aligned and organized behind this common mission, with Public Health – Seattle & King County as our lead agency," said Executive Constantine. "We will direct all available resources to help cities, health-care facilities, businesses, and families continue life as normally as possible. But our best strategies depend on millions of residents actively following established disease prevention guidelines."

"As we learn more about this outbreak, it's now more important than ever that we look out for one another and stand strong as a community," King County Council Chair Claudia Balducci said. "In King County, we are fortunate to have a network of highly skilled public health professionals who are working round-the-clock to assess and respond to the situation, while making sure we are informed with up-to-date information."

COVID-19 Case updates

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"We have the best people in the world right here in King County responding to this crisis," said Patty Hayes, RN, MN, Director of Public Health – Seattle & King County. "We will get through this by staying informed and united. There are things each one of us can do to take control and reduce the impact of this disease in our community."

The four new cases are in:

- A male in his 50s, hospitalized at Highline Hospital. No known exposures. He is in stable but critical condition. He had no underlying health conditions.
- A male in his 70s, a resident of LifeCare, hospitalized at EvergreenHealth in Kirkland. The man had underlying health conditions, and died 3/1/20
- A female in her 70s, a resident of LifeCare, hospitalized at EvergreenHealth in Kirkland. The woman had underlying health conditions, and died 3/1/20
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Public Health is working hard to identify close contacts of these confirmed cases. These close contacts may include family members, co-workers, emergency responders and other contacts. A team of CDC officials is on-the-ground working with Public Health, along with the Washington State Department of Health, our healthcare system partners and many others.

The public can help:

1) **Do not go to the emergency room unless essential.** Emergency rooms need to be able to serve those with the most critical needs. If you have symptoms like cough, fever, or other respiratory problems, contact your regular doctor first.

2) Stay home when sick.

3) Practice excellent personal hygiene habits, including handwashing, coughing into tissue or elbow, avoid touching eyes, nose, or mouth.

4) Stay away from people who are ill, especially if you are 60 and older or have underlying health conditions such as diabetes, heart disease, lung disease, or a weakened immune system.

4) Stay informed. Information is changing frequently. Check and subscribe to Public Health's website (www.kingcounty.gov/COVID) or blog (www.publichealthinsider.com).

Providing effective and innovative health and disease prevention services for more than two million residents and visitors of King County, Public Health – Seattle & King County works for safer and healthier communities for everyone, every day. More at www.kingcounty.gov/health

Keep up with the latest Public Health news in King County by subscribing to the department's blog, Public Health Insider.

Facebook | Twitter | Instagram

###

Susie Levy, MPH *(she/her)*
Government Affairs Analyst
Public Health – Seattle & King County
Phone: 206-263-8328
slevy@kingcounty.gov

Talking points for City Cabinet update:

Status update:

- Current situation:
    - 14 confirmed cases, 5 deaths
    - 4 deaths associated with LifeCare facility, he 5th was also someone with underling health conditions
    - Seen at 5 area facilities and dialysis center
    - Facilities impacted: Evergreen, Overlake, Valley, Highline, Virginia Mason
- Community mitigation branch stood up as of this week, building on previous work and in coordination with DOH-
    - Matias is lead, groups focused on the following:
        - Non pharmaceutical intervention implementation group
        - Outreach on pandemic planning to specific groups including:
        - Houseless
        - Business
        - Children and youth
        - CBO and faith-based
        - Government agency

Public Health
Seattle & King County

Essential Talking Points: Novel Coronavirus (COVID-19)

Updated 02-29-20

Basic facts:

- Novel coronavirus (COVID-19) is a new virus strain that emerged in Dec 2019.
- Novel coronavirus spreads between people via droplets produced when an infected person coughs or sneezes.
- Symptoms of coronavirus may include: fever, coughing, and shortness of breath. These may appear in as few as 2 days or as long as 14 days after exposure to the virus.
- People are thought to be the most contagious when they are the sickest, though some spread is possible before people show symptoms.
- Most people have mild illness. The most serious cases have been among older adults and those with underlying chronic medical conditions. Children may have less severe disease.
- Novel coronavirus is not at all connected with race, ethnicity, or nationality.

International & U.S. Situation:

- Countries where novel coronavirus is widespread or ongoing include: China, Japan, Italy, South Korea, and Iran. For updates, visit the CDC Travel Alert page.
- With continuing spread of the novel coronavirus outbreak to more countries, it is increasingly likely that we will see a worldwide spread.
- Current travel alerts, include:

Widespread sustained (ongoing) transmission and restrictions on entry to the U.S. (*Level 3)*	CDC recommends that travelers avoid all nonessential travel to the following destinations. Entry of foreign nationals from these destinations has been suspended.	China Iran
Widespread sustained (ongoing) transmission (*Level 3)*	CDC recommends that travelers avoid all nonessential travel to the following destinations:	South Korea Italy
Sustained (ongoing) community transmission *(Level 2)*	CDC recommends that older adults or those who have chronic medical conditions consider postponing travel to the following destinations:	Japan
Limited community transmission *(Level 1)*	Travelers should practice usual precautions at the following destination:	Hong Kong

Local Situation:

- To date, there have been cases of novel coronavirus in King and Snohomish counties, including several deaths.
- Additional positive cases are expected.
- This is a quickly changing situation. Check Public Health's Novel Coronavirus webpage for frequent updates.

Prevention:

- There is no vaccine available to protect against novel coronavirus.
- You may be able to reduce the risk of spread of coronaviruses by taking the same steps as you would to prevent infection from the flu and the common cold: washing hands, avoid touching your face, avoiding contact with sick people, staying home, and covering your mouth.

Treatment:

- There are no medications specifically approved for novel coronavirus.
- Most people with mild novel coronavirus illness will recover on their own by drinking plenty of fluids, resting, and taking pain and fever medications. However, some cases develop pneumonia and require care or hospitalization.
- If you have symptoms like cough, fever, or other respiratory problems, contact your regular doctor first. **Do not go to the emergency room.** Emergency rooms need to be able to serve those with the most critical needs.
- If you have difficulty breathing, it doesn't mean you have novel coronavirus, but you should call 9-1-1.
- If you're over 60 and you have underlying conditions like diabetes, heart disease, and lung disease. Come up with a plan with your doctor to identify your health risks for coronavirus and how to manage symptoms. Contact your doctor right away if you do have symptoms.

Face masks:

- We do not currently recommend that people wear masks when they are in public.
- Scientists are not sure whether wearing a mask in public actually keeps healthy people from getting sick. It is most important for people who are sick to wear a mask in a healthcare setting (such as a waiting room) to avoid exposing other people when they cough or sneeze.
- People wear masks for a variety of acceptable reasons. We should not assume that someone wearing a mask is sick.

Preparing for an outbreak:

- We cannot predict when a pandemic outbreak might reach us nor how severe a novel coronavirus pandemic might be locally. But if it happens, and that seems increasing likely, it could cause large numbers of people to become ill in a short time.
- To prevent novel coronavirus from spreading, large gatherings and public events may be postponed or cancelled.
- School dismissals *may* happen if a serious pandemic occurs.
- For more information about outbreak preparedness, check out Public Health Insider.

What Public Health is doing:

- Public Health has activated over 100 employees and volunteers, working on disease containment and pandemic preparedness.
- Some of our activities include: conducting disease surveillance & investigation; working with community partners to address stigmatization and bias; disseminating messages and materials to the public, media, and community partners; and, conducting pandemic planning in anticipation of widespread transmission.

Visit www.kingcounty.gov/covid for updates or follow us on social media (@KCPubHealth).

Washington State Department of

Health

From:	Schaeffer, Cyndi
To:	Otusanya, Yinka
Subject:	FW: talking points for
Date:	Monday, March 2, 2020 12:43:00 PM
Attachments:	Talking points for City Cabinet update.docx COVID-19 Essential Talking Points 03.2.20.pdf image002.png

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Public Health – Seattle & King County
Phone: 206-263-8328
slevy@kingcounty.gov

Talking points for City Cabinet update:

Status update:

- Current situation:
    - 14 confirmed cases, 5 deaths
    - 4 deaths associated with LifeCare facility, he 5th was also someone with underling health conditions
    - Seen at 5 area facilities and dialysis center
    - Facilities impacted: Evergreen, Overlake, Valley, Highline, Virginia Mason
- Community mitigation branch stood up as of this week, building on previous work and in coordination with DOH-
    - Matias is lead, groups focused on the following:
        - Non pharmaceutical intervention implementation group
        - Outreach on pandemic planning to specific groups including:
        - Houseless
        - Business
        - Children and youth
        - CBO and faith-based
        - Government agency

Public Health
Seattle & King County

Essential Talking Points: Novel Coronavirus (COVID-19)

Updated 02-29-20

Basic facts:

- Novel coronavirus (COVID-19) is a new virus strain that emerged in Dec 2019.
- Novel coronavirus spreads between people via droplets produced when an infected person coughs or sneezes.
- Symptoms of coronavirus may include: fever, coughing, and shortness of breath. These may appear in as few as 2 days or as long as 14 days after exposure to the virus.
- People are thought to be the most contagious when they are the sickest, though some spread is possible before people show symptoms.
- Most people have mild illness. The most serious cases have been among older adults and those with underlying chronic medical conditions. Children may have less severe disease.
- Novel coronavirus is not at all connected with race, ethnicity, or nationality.

International & U.S. Situation:

- Countries where novel coronavirus is widespread or ongoing include: China, Japan, Italy, South Korea, and Iran. For updates, visit the CDC Travel Alert page.
- With continuing spread of the novel coronavirus outbreak to more countries, it is increasingly likely that we will see a worldwide spread.
- Current travel alerts, include:

Widespread sustained (ongoing) transmission and restrictions on entry to the U.S. (*Level 3)*	CDC recommends that travelers avoid all nonessential travel to the following destinations. Entry of foreign nationals from these destinations has been suspended.	China Iran
Widespread sustained (ongoing) transmission (*Level 3)*	CDC recommends that travelers avoid all nonessential travel to the following destinations:	South Korea Italy
Sustained (ongoing) community transmission *(Level 2)*	CDC recommends that older adults or those who have chronic medical conditions consider postponing travel to the following destinations:	Japan
Limited community transmission *(Level 1)*	Travelers should practice usual precautions at the following destination:	Hong Kong

Local Situation:

- To date, there have been cases of novel coronavirus in King and Snohomish counties, including several deaths.
- Additional positive cases are expected.
- This is a quickly changing situation. Check Public Health's Novel Coronavirus webpage for frequent updates.

Prevention:

- There is no vaccine available to protect against novel coronavirus.
- You may be able to reduce the risk of spread of coronaviruses by taking the same steps as you would to prevent infection from the flu and the common cold: washing hands, avoid touching your face, avoiding contact with sick people, staying home, and covering your mouth.

Treatment:

- There are no medications specifically approved for novel coronavirus.
- Most people with mild novel coronavirus illness will recover on their own by drinking plenty of fluids, resting, and taking pain and fever medications. However, some cases develop pneumonia and require care or hospitalization.
- If you have symptoms like cough, fever, or other respiratory problems, contact your regular doctor first. **Do not go to the emergency room.** Emergency rooms need to be able to serve those with the most critical needs.
- If you have difficulty breathing, it doesn't mean you have novel coronavirus, but you should call 9-1-1.
- If you're over 60 and you have underlying conditions like diabetes, heart disease, and lung disease. Come up with a plan with your doctor to identify your health risks for coronavirus and how to manage symptoms. Contact your doctor right away if you do have symptoms.

Face masks:

- We do not currently recommend that people wear masks when they are in public.
- Scientists are not sure whether wearing a mask in public actually keeps healthy people from getting sick. It is most important for people who are sick to wear a mask in a healthcare setting (such as a waiting room) to avoid exposing other people when they cough or sneeze.
- People wear masks for a variety of acceptable reasons. We should not assume that someone wearing a mask is sick.

Preparing for an outbreak:

- We cannot predict when a pandemic outbreak might reach us nor how severe a novel coronavirus pandemic might be locally. But if it happens, and that seems increasing likely, it could cause large numbers of people to become ill in a short time.
- To prevent novel coronavirus from spreading, large gatherings and public events may be postponed or cancelled.
- School dismissals *may* happen if a serious pandemic occurs.
- For more information about outbreak preparedness, check out Public Health Insider.

What Public Health is doing:

- Public Health has activated over 100 employees and volunteers, working on disease containment and pandemic preparedness.
- Some of our activities include: conducting disease surveillance & investigation; working with community partners to address stigmatization and bias; disseminating messages and materials to the public, media, and community partners; and, conducting pandemic planning in anticipation of widespread transmission.

Visit www.kingcounty.gov/covid for updates or follow us on social media (@KCPubHealth).

Washington State Department of

Health

From:	McKeirnan, Shelly
To:	Amy.morrison@lwtech.edu
Cc:	Kay, Meagan; Brostrom-Smith, Claire; Clark, Shauna; Valenzuela, Matias
Subject:	Follow-up to our call earlier this evening
Date:	Sunday, March 1, 2020 11:00:11 PM
Attachments:	Guidance-for-Contacts-Monitoring.pdf

Hi Amy, thanks so much for speaking with me earlier. I appreciate your concern for your students and faculty and I am sure this has been a challenging situation for you and the school. As I mentioned when we spoke, I am emailing you information on self-monitoring and quarantine (the self-monitoring information and chart for documentation are at the end of this document) for you to review. As I mentioned, based on the information we have about the risk assessment, we are recommending home quarantine and self-monitoring for the nursing and physical therapy students and staff who were at the Lifecare SNF in the last 14 days. The period of monitoring/quarantine is for 14 days after last exposure at LifeCare. This is based on the information that the students/faculty were providing clinical care to residents of LifeCare SNF at the SNF.

As of earlier this afternoon, we have 10 confirmed cases of COVID-19 in King County residents, 6 of the 10 are residents/staff of LifeCare SNF, status update online at: https://www.kingcounty.gov/depts/health/news/2020/March/1-covid19-4-cases.aspx

I understand you have concerns about the quarantine recommendation and the hardships for some of the students/staff, and we can discuss this further tomorrow. I will have one of our staff cc'ed on this email contact you tomorrow by email or call. I understand you want a final plan for management of the exposed students/faculty by the end of the day tomorrow. We will also reach out to the faculty member who is ill (thanks for her contact information and for letting her know we will be contacting her). If you get more information on the student who is not feeling well, we can follow-up with that person also.

Thanks, Shelly

Shelly McKeirnan (she/her), BSN MPH | Public Health Services Supervisor | Communicable Disease Epidemiology & Immunization Section | 401 5th Ave., Suite 1250 | Seattle WA 98104 | P: 206.296.4774 (Main) | P: 206.263.8195 (Direct) | F: 206.296.4803 | http://www.kingcounty.gov/health/cd
My normal work week is M-F (off work every other Wednesday)

Washington State Department of Health

Interim Guidance for Health Departments for Monitoring Contacts and Travelers for 2019 Novel Coronavirus (2019-nCoV)

Purpose

This document gives guidance for temperature and symptom monitoring by a public health official for persons potentially exposed to 2019 novel coronavirus, until 14 days after the last potential exposure (see Table 1: CDC Risk Categories).

Introduction

Novel coronavirus (2019-nCoV) was detected December 2019 in Wuhan City, Hubei Province, China. Thousands of 2019-nCoV infections are reported from many areas in China and are also being reported in a growing number of international locations, including the United States. In January 2020, the first infection with 2019-nCoV was detected in the United States in a traveler returning from Wuhan.

Coronaviruses belong to a large family of viruses affecting humans and other animals. Rarely, animal coronaviruses can infect people and then spread between people such as with Middle East Respiratory Syndrome (MERS), Severe Acute Respiratory Syndrome (SARS), and now with the 2019 Novel Coronavirus (2019-nCoV).

No vaccine or specific treatment for 2019-nCoV infection is available; care is supportive.

Exposure risk assessment

Each person's exposure risks should be assessed, and classified according to CDC guidance: https://www.cdc.gov/coronavirus/2019-ncov/php/risk-assessment.html

Included in this document are the following:

Table 1: CDC Risk Categories

CDC Risk Categories	
High Risk	• Living in the same household as, being an intimate partner of, or providing care in a nonhealthcare setting (such as a home) for a person with symptomatic laboratory-confirmed 2019-nCoV infection without using recommended precautions for home care and home isolation. • The same risk assessment applies for the above-listed exposures to a person diagnosed clinically with 2019-nCoV infection outside of the United States who did not have laboratory testing. • Travel from Hubei Province, China.
Medium Risk	• Close contact with a person with symptomatic laboratory-confirmed 2019-nCoV infection, and not having any exposures that meet a high-risk definition. ❖ The same risk assessment applies for close contact with a person diagnosed clinically with 2019-nCoV infection outside of the United States who did not have laboratory testing. ❖ On an aircraft, being seated within 6 feet (two meters) of a traveler with symptomatic laboratory-confirmed 2019-nCoV infection; this distance correlates approximately with 2 seats in each direction. • Living in the same household as, an intimate partner of, or caring for a person in a nonhealthcare setting (such as a home) to a person with symptomatic laboratory-confirmed 2019-nCoV infection while consistently using recommended precautions for home care and home isolation. • Travel from mainland China outside Hubei Province AND not having any exposures that meet a high-risk definition.
Low Risk	• Being in the same indoor environment (e.g., a classroom, a hospital waiting room) as a person with symptomatic laboratory-confirmed 2019-nCoV infection for a prolonged period of time but not meeting the definition of close contact. • On an aircraft, being seated within two rows of a traveler with symptomatic laboratory-confirmed 2019-nCoV infection but not within 6 feet (2 meters) AND not having any exposures that meet a medium- or a high-risk definition.
No Identifiable Risk	• Interactions with a person with symptomatic laboratory-confirmed 2019-nCoV infection that do not meet any of the high-, medium- or low-risk conditions above, such as walking by the person or being briefly in the same room.

Table 2: Movement and Monitoring of People who are Symptomatic

Risk Category	Movement Restrictions & Public Activities	Medical Evaluation	Travel
High risk	**Immediate isolation.**	Medical evaluation is recommended; diagnostic testing for 2019-nCoV should be guided by CDC's PUI definition but is recommended for symptomatic people with a known high-risk exposure. If medical evaluation is needed, it should occur with pre-notification to the receiving HCF and EMS, if EMS transport indicated, and with all recommended infection control precautions in place.	**Controlled**; air travel only via air medical transport. Local travel is only allowed by medical transport (e.g., ambulance) or private vehicle while symptomatic person is wearing a face mask.
Medium risk	**Immediate isolation.**	Medical evaluation and care should be guided by clinical presentation; diagnostic testing for 2019-nCoV should be guided by CDC's PUI definition. If medical evaluation is needed, it should occur with pre-notification to the receiving HCF and EMS, if EMS transport indicated, and with all recommended infection control precautions in place.	**Controlled**; air travel only via approved air medical transport. Local travel is only allowed by medical transport (e.g., ambulance) or private vehicle while symptomatic person is wearing a face mask.
Low risk	Recommendation to avoid contact with others and public activities while symptomatic.	Person should seek health advice to determine if medical evaluation is needed. If sought, medical evaluation and care should be guided by clinical presentation; diagnostic testing for 2019-nCoV should be guided by CDC's PUI definition.	Recommendation to not travel on long-distance commercial conveyances or local public transport while symptomatic.
No identifiable risk[2]	No restriction	Routine medical care.	No restriction.

Table 3: Movement and Monitoring of People who are Asymptomatic

Risk Category	Movement Restrictions and Public Activities	Monitoring	Travel
High risk	Remain quarantined (voluntary or under public health orders on a case-by-case basis) in a location to be determined by public health authorities. No public activities.	Daily active monitoring.	Controlled.
Medium risk	To the extent possible, remain at home or in a comparable setting. Avoid congregate settings, limit public activities, and practice social distancing.	**Travelers from mainland China outside Hubei Province with no known high-risk exposure:** Self-monitoring with public health supervision. **All others in this category:** Active monitoring.	Recommendation to postpone additional long-distance travel after they reach their final destination. People who intend to travel should be advised that they might not be able to return if they become symptomatic during travel.
Low risk	No restriction.	Self-observation.	No restriction.
No identifiable risk	No restriction.	None.	No restriction.

Active and Self-Monitoring

- **Active monitoring** means that the state or local public health agency checks in daily to assess for symptoms and fever. Check-ins are through daily phone calls, interactive voice response, internet reporting, or via Skype or other video conferencing, with possible follow-up home visits as needed.

- **Self-monitoring** means the person being monitored assesses for fever and symptoms, notifying public health immediately if symptoms occur.

The goal is to monitor the health of the person and to take actions if the person develops symptoms or is lost from follow-up.

Monitoring is for 14 days from the last potential exposure.

Active monitoring process

Persons under active monitoring should measure their temperature twice daily and monitor themselves for symptoms. Local public health will contact them at least once a day for results of their monitoring.

Procedures for active monitoring:

1. The local public health official should confirm that the person received a **14-day fever and symptom log** and has instructions about where to seek health care.
    - Initial training is helpful to explain the monitoring process, ensure that the person being monitored understands the required follow-up and to establish rapport.
2. Every day, the person will take their temperature twice (morning and night) and record their temperature and the presence or absence of all symptoms on the **14-day fever and symptom log**.
    - The person should record if they are taking any medication with aspirin, Tylenol® (acetaminophen), paracetomol, Aleve® (naproxen), Motrin® or Advil® (ibuprofen). Temperature readings should be taken **before** the person's next dose of any such medication.
    - The person should report all other medication taken and any current health conditions to the LHJ.
3. The person being monitored should report daily to public health officials by phone, email, or other means to confirm symptoms have been monitored and the individual remains asymptomatic.
4. If the person has a fever or is feverish or reports at least one of the other symptoms, they should immediately notify the LHJ at 206-296-4774 , if unavailable call the Washington State Department of Health at 206-418-5500. **If the person has an urgent health situation, the first call should be to 911 and the second call should be to the public health department.**
5. If the person has not monitored or recorded the presence or absence of symptoms for two consecutive days, additional efforts should be made to increase adherence to the follow-up protocol, such as in-person visits. The LHJ should be notified at 206-296-4774 if unavailable call the Washington State Department of Health at 206-418-5500.

Self-monitoring process

Persons under self-monitoring should measure their temperature twice daily and monitor themselves for symptoms. If the person under self-monitoring experiences any symptoms on the tracking log, they must contact the LHJ immediately at: 206-296-4774 , if unavailable call the Washington State Department of Health at 206-418-5500.

Procedures for self-monitoring:

1. The local public health official should confirm that the person received a **14-day fever and symptom log**.
    - Initial training is helpful to explain the monitoring process, ensure that the person being monitored understands the required follow-up and to establish rapport.
2. Each day, the person will take their temperature twice (morning and night) and record their temperature and the presence or absence of all symptoms on the **14-day fever and symptom log**.
    - The person should record if they are taking any medication with aspirin, Tylenol® (acetaminophen), paracetomol, Aleve® (naproxen), Motrin® or Advil® (ibuprofen). Temperature readings should be taken **before** the contact's next dose of any such medication.
    - The person should report all other medication taken and any current health conditions to the LHJ.
3. If the person has a fever or subjective fever or reports at least one of the other symptoms on the monitoring log, they should immediately notify the local public health agency at 206-296-4774 , if unavailable call the Washington State Department of Health at 206-418-5500. If the person has an urgent health situation, first call 911 and then call should the public health agency.

If a person under active or self-monitoring develops any of the symptoms listed on the fever and symptom log, the LHJ should be immediately contacted at 206-296-4774 , if unavailable call the Washington State Department of Health at 206-418-5500.

If the LHJ decides that the person should undergo medical evaluation for 2019-nCoV, the person should be isolated and arrangements should be made for safe transport to an appropriate healthcare facility for evaluation

02/06/2020

14-day fever and symptom follow-up form for contacts of 2019-nCov patients, days 1-7

Name:_____Age (yrs): _____ Sex: M F
Street address:_____City_____, State:_____Telephone number: _____
Case ID number (from contact listing form):_____Contact number (from contact listing form): _____
Where did contact with the case occur:_____Date of last contact with the case (mm/dd/yyyy): _____

Take your temperature twice a day, in the morning and in the evening, and write it down. Mark if you have any of the symptoms: circle 'Y' for Yes and 'N' for No. **Don't leave any spaces blank**.
If you have a fever or any symptom, immediately call the public health department at 206-296-4774 or 206-418-5500.

Day # (from last contact)	1		2		3		4		5		6		7	
Date														
AM or PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Temperature														
Felt feverish	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Cough	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Sore Throat	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Difficulty breathing	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Shortness of breath	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Muscle aches	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Headache	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Abdominal discomfort	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Vomiting	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Diarrhea	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N

02/06/2020

14-day fever and symptom follow-up form for contacts of 2019-nCov patients, days 8-14

Name:_____Age (yrs): _____ Sex: M F
Street address:_____City_____, State:_____Telephone number: _____
Case ID number (from contact listing form):_____Contact number (from contact listing form): _____
Where did contact with the case occur:_____Date of last contact with the case (mm/dd/yyyy): _____

Take your temperature twice a day, in the morning and in the evening, and write it down. Mark if you have any of the symptoms: circle 'Y' for Yes and 'N' for No. **Don't leave any spaces blank**.
If you have a fever or any symptom, immediately call the public health department at 206-296-4774 or 206-418-5500.

Day # (from last contact)	8		9		10		11		12		13		14	
Date														
AM or PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Temperature														
Felt feverish	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Cough	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Sore throat	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Difficulty breathing	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Shortness of breath	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Muscle aches	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Headache	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Abdominal discomfort	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Vomiting	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Diarrhea	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N

From: Kay, Meagan
To: McKeirnan, Shelly
Subject: Fwd: Follow-up to our call earlier this evening
Date: Monday, March 2, 2020 8:36:44 AM

What does she mean anticipated final plan to quarantine. They should be doing that now.

From: Morrison, Amy <Amy.Morrison@lwtech.edu>
Sent: Monday, March 2, 2020 8:25:51 AM
To: McKeirnan, Shelly <Shelly.McKeirnan@kingcounty.gov>
Cc: Kay, Meagan <Meagan.Kay@kingcounty.gov>; Brostrom-Smith, Claire <Claire.Brostrom-Smith@kingcounty.gov>; Clark, Shauna <shclark@kingcounty.gov>; Valenzuela, Matias <Matias.Valenzuela@kingcounty.gov>
Subject: RE: Follow-up to our call earlier this evening

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thank you Shelly,

I have communicated your request for self-monitoring with the anticipated final plan to self-quarantine to students and faculty at LifeCare. We are assessing what they need to do in order to be better prepared.

Please call me today any time at 425-256-1981.
Thanks.
Amy

From: McKeirnan, Shelly [mailto:Shelly.McKeirnan@kingcounty.gov]
Sent: Sunday, March 1, 2020 11:00 PM
To: Morrison, Amy <Amy.Morrison@lwtech.edu>
Cc: Kay, Meagan <Meagan.Kay@kingcounty.gov>; Brostrom-Smith, Claire <Claire.Brostrom-Smith@kingcounty.gov>; Clark, Shauna <shclark@kingcounty.gov>; Valenzuela, Matias <Matias.Valenzuela@kingcounty.gov>
Subject: Follow-up to our call earlier this evening

EXTERNAL SENDER: Use caution with links and attachments

Hi Amy, thanks so much for speaking with me earlier. I appreciate your concern for your students and faculty and I am sure this has been a challenging situation for you and the school. As I mentioned when we spoke, I am emailing you information on self-monitoring and quarantine (the self-monitoring information and chart for documentation are at the end of this document) for you to review. As I mentioned, based on the information we have about the risk assessment, we are recommending home quarantine and self-monitoring for the nursing and physical therapy students and staff who were at the Lifecare SNF in the last 14 days. The period of monitoring/quarantine is

for 14 days after last exposure at LifeCare. This is based on the information that the students/faculty were providing clinical care to residents of LifeCare SNF at the SNF.

As of earlier this afternoon, we have 10 confirmed cases of COVID-19 in King County residents, 6 of the 10 are residents/staff of LifeCare SNF, status update online at: https://www.kingcounty.gov/depts/health/news/2020/March/1-covid19-4-cases.aspx

I understand you have concerns about the quarantine recommendation and the hardships for some of the students/staff, and we can discuss this further tomorrow. I will have one of our staff cc'ed on this email contact you tomorrow by email or call. I understand you want a final plan for management of the exposed students/faculty by the end of the day tomorrow. We will also reach out to the faculty member who is ill (thanks for her contact information and for letting her know we will be contacting her). If you get more information on the student who is not feeling well, we can follow-up with that person also.

Thanks, Shelly

Shelly McKeirnan (she/her), BSN MPH | Public Health Services Supervisor | Communicable Disease Epidemiology & Immunization Section | 401 5th Ave., Suite 1250 | Seattle WA 98104 | P: 206.296.4774 (Main) | P: 206.263.8195 (Direct) | F: 206.296.4803 | http://www.kingcounty.gov/health/cd
My normal work week is M-F (off work every other Wednesday)

From: Kay, Meagan
To: Duchin, Jeff; Bogan, Sharon; Li-Vollmer, Meredith
Subject: Fwd: "Close contacts" messaging
Date: Monday, March 2, 2020 8:30:17 AM

Language for people exposed at LIfecare at bottom of this message

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From: Rao, Agam K. (CDC/DDID/NCEZID/DHCPP) <ige4@cdc.gov>
Sent: Monday, March 2, 2020 8:27 AM
To: Kay, Meagan
Subject: "Close contacts" messaging

Meagan,

The language re: definition of close contacts is in the email at the bottom of this email chain.

--Agam

From: Rao, Agam K. (CDC/DDID/NCEZID/DHCPP)
Sent: Sunday, March 1, 2020 7:08 PM
To: Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>
Subject: RE: Re: messaging for the various levels of "exposure" to the LTCF

Hi Meagan,

As just discussed with you in the hallway, the CDC recommendation is to be quarantined at home if someone had close contact with a confirmed case patient. However, if the county wants to loosen that policy given the shortage of HCP, perhaps having these asymptomatic contacts wear masks is acceptable. That would be your call.

It sounds like you are putting out the message that HCP should stay at home for 2 weeks and self monitor (quarantine). It is up to the individuals to follow those recommendations. Sorry for the delay in getting back to you on this.

--Agam

From: Kay, Meagan <Meagan.Kay@kingcounty.gov>
Sent: Sunday, March 1, 2020 5:05 PM
To: Rao, Agam K. (CDC/DDID/NCEZID/DHCPP) <ige4@cdc.gov>
Cc: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Clark, Thomas A.

(CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>
Subject: RE: Re: messaging for the various levels of "exposure" to the LTCF

One question to clarify…

For asymptomatic people who meet the close contact definition, when you say self-monitor at home, do you mean quarantine? Some of these people will be HCWs and they don't have enough staff in many of these facilities. We talked about relaxing that message possibly. Any movement on that or should we continue to be very strict about implementing quarantine for all close contacts?

From: Rao, Agam K. (CDC/DDID/NCEZID/DHCPP) <ige4@cdc.gov>
Sent: Sunday, March 1, 2020 1:19 PM
To: Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>
Subject: FW: Re: messaging for the various levels of "exposure" to the LTCF

Meagan,

I just spoke with the DHQP team (John is cc'ed to this email and reviewed this response). CDC's website about risk assessments (*https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html*) defines a ***Close contact*** for healthcare exposures as follows: a) being within approximately 6 feet (2 meters), of a person with COVID-19 for a prolonged period of time (such as caring for or visiting the patient; or sitting within 6 feet of the patient in a healthcare waiting area or room); or b) having unprotected direct contact with infectious secretions or excretions of the patient (e.g., being coughed on, touching used tissues with a bare hand).

Per the DHQP team, this same definition can be used for all persons who entered the facility. We know there are countless groups that have entered the facility with varying levels of exposure. Some have low risk exposures like while delivering packages and some may have had prolonged exposure (e.g., healthcare personnel like nursing students, floating healthcare workers, and family members). The team suggests reaching out to the parent agencies to which all of these people belong. You can convey to those groups that they should contact their employees / students and convey the information about the close contacts. If they are symptomatic, they should report this to their employers and if they are not, self-monitor at home. They recommend public messaging be limited to stating something to the effect of, "Only persons who had close contact with persons in the LTCF are considered to have had some exposure. Close contact is defined as…. [insert that definition above] For all other persons who may have entered the facility for activities unrelated to patient care, the risk is very low.

--Agam

CDC Epi

From:	Kay, Meagan
To:	Brostrom-Smith, Claire
Subject:	Fwd: "Close contacts" messaging
Date:	Monday, March 2, 2020 9:00:40 AM

From: Kay, Meagan <Meagan.Kay@kingcounty.gov>
Sent: Monday, March 2, 2020 8:30:16 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Bogan, Sharon <Sharon.Bogan@kingcounty.gov>; Li-Vollmer, Meredith <Meredith.Li-Vollmer@kingcounty.gov>
Subject: Fwd: "Close contacts" messaging

Language for people exposed at LIfecare at bottom of this message

---

From: Rao, Agam K. (CDC/DDID/NCEZID/DHCPP) <ige4@cdc.gov>
Sent: Monday, March 2, 2020 8:27 AM
To: Kay, Meagan
Subject: "Close contacts" messaging

Meagan,

The language re: definition of close contacts is in the email at the bottom of this email chain.

--Agam

From: Rao, Agam K. (CDC/DDID/NCEZID/DHCPP)
Sent: Sunday, March 1, 2020 7:08 PM
To: Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>
Subject: RE: Re: messaging for the various levels of "exposure" to the LTCF

Hi Meagan,

As just discussed with you in the hallway, the CDC recommendation is to be quarantined at home if someone had close contact with a confirmed case patient. However, if the county wants to loosen that policy given the shortage of HCP, perhaps having these asymptomatic contacts wear masks is acceptable. That would be your call.

It sounds like you are putting out the message that HCP should stay at home for 2 weeks and self

monitor (quarantine). It is up to the individuals to follow those recommendations. Sorry for the delay in getting back to you on this.

--Agam

From: Kay, Meagan <Meagan.Kay@kingcounty.gov>
Sent: Sunday, March 1, 2020 5:05 PM
To: Rao, Agam K. (CDC/DDID/NCEZID/DHCPP) <ige4@cdc.gov>
Cc: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>
Subject: RE: Re: messaging for the various levels of "exposure" to the LTCF

One question to clarify…

For asymptomatic people who meet the close contact definition, when you say self-monitor at home, do you mean quarantine? Some of these people will be HCWs and they don't have enough staff in many of these facilities. We talked about relaxing that message possibly. Any movement on that or should we continue to be very strict about implementing quarantine for all close contacts?

From: Rao, Agam K. (CDC/DDID/NCEZID/DHCPP) <ige4@cdc.gov>
Sent: Sunday, March 1, 2020 1:19 PM
To: Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>
Subject: FW: Re: messaging for the various levels of "exposure" to the LTCF

Meagan,

I just spoke with the DHQP team (John is cc'ed to this email and reviewed this response). CDC's website about risk assessments (*https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html*) defines a ***Close contact*** for healthcare exposures as follows: a) being within approximately 6 feet (2 meters), of a person with COVID-19 for a prolonged period of time (such as caring for or visiting the patient; or sitting within 6 feet of the patient in a healthcare waiting area or room); or b) having unprotected direct contact with infectious secretions or excretions of the patient (e.g., being coughed on, touching used tissues with a bare hand).

Per the DHQP team, this same definition can be used for all persons who entered the facility. We know there are countless groups that have entered the facility with varying levels of exposure. Some have low risk exposures like while delivering packages and some may have had prolonged exposure (e.g., healthcare personnel like nursing students, floating healthcare workers, and family members). The team suggests reaching out to the parent agencies to which all of these people belong. You can convey to those groups that they should contact their employees / students and convey the information about the close contacts. If they are symptomatic, they should report this to their employers and if they are not, self-monitor at

home. They recommend public messaging be limited to stating something to the effect of, “Only persons who had close contact with persons in the LTCF are considered to have had some exposure. Close contact is defined as…. [insert that definition above] For all other persons who may have entered the facility for activities unrelated to patient care, the risk is very low.

--Agam

CDC Epi

From:	Karasz, Hilary
Subject:	Media Release: Public Health confirms four more COVID-19 cases, bringing the total number of cases in King County to 14
Date:	Monday, March 2, 2020 11:31:19 AM
Attachments:	image002.png

Public Health
Seattle & King County

Washington State Department of Health

March 2, 2020 11:15 a.m.

Contacts:

Public Health – Seattle & King County Media Line: 206-477-9000

Email: PHPIO@kingcounty.gov

Washington State Department of Health: 253-512-7100

Email: doh-pio@doh.wa.gov

Public Health confirms four new COVID-19 cases, bringing overall total to 14

King County to purchase motel, repurpose other properties in fight against COVID-19

Summary:

Public Health – Seattle & King County announced on Monday four additional confirmed cases of COVID-19 in King County residents, bringing the total of confirmed cases to fourteen. King County Executive Dow Constantine signed an Emergency Declaration, enabling county government to take extra steps to fight COVID-19. Among the first actions: purchasing a motel and setting up modular housing units on publicly-owned parking lots and other available land.

Story:

On Sunday, March 1, Executive Constantine signed a Proclamation of Emergency in response to COVID-19, enabling "extraordinary measures"

to fight the outbreak, including waiving some procurement protocols, and authoring overtime for King County employees, among other powers.

Executive Constantine immediately ordered the purchase of an area motel to be used to isolate patients in recovery as well as those in active treatment. The acquisition is expected to be finalized in a matter of days and available to Public Health by the end of the week. Location details will be made available when the transaction is complete.

In addition, King County will place modular units on public properties in locations throughout King County.

"We have moved to a new stage in the fight to contain and mitigate this outbreak. King County is aligned and organized behind this common mission, with Public Health – Seattle & King County as our lead agency," said Executive Constantine. "We will direct all available resources to help cities, health-care facilities, businesses, and families continue life as normally as possible. But our best strategies depend on millions of residents actively following established disease prevention guidelines."

"As we learn more about this outbreak, it's now more important than ever that we look out for one another and stand strong as a community," King County Council Chair Claudia Balducci said. "In King County, we are fortunate to have a network of highly skilled public health professionals who are working round-the-clock to assess and respond to the situation, while making sure we are informed with up-to-date information."

COVID-19 Case updates

COVID-19 test results have come back from the Washington State Public Health Laboratory confirming four additional cases of COVID-19 in King County residents. With these four new results, the total number of cases in King County is 14. Today's results include 2 additional deaths, along with an individual who was previously reported as ill but who has now died. This brings the total number of deaths in King County from COVID-19 to five.

"We have the best people in the world right here in King County responding to this crisis," said Patty Hayes, RN, MN, Director of Public Health – Seattle & King County. "We will get through this by staying informed and united. There are things each one of us can do to take control and reduce the impact of this disease in our community."

The four new cases are in:

- A male in his 50s, hospitalized at Highline Hospital. No known exposures. He is in stable but critical condition. He had no underlying health conditions.

- A male in his 70s, a resident of LifeCare, hospitalized at EvergreenHealth in Kirkland. The man had underlying health conditions, and died 3/1/20
- A female in her 70s, a resident of LifeCare, hospitalized at EvergreenHealth in Kirkland. The woman had underlying health conditions, and died 3/1/20
- A female in her 80s, a resident of LifeCare, was hospitalized at EvergreenHealth. She is in critical condition.

- In addition, a woman in her 80s, who was already reported as in critical condition at Evergreen, has died. She died on 3/1/20

10 other cases, already reported earlier by Public Health, include:

- A female in her 80s, hospitalized at EvergreenHealth in Kirkland. This person has now died, and is reported as such above.
- A female in her 90s, hospitalized at EvergreenHealth in Kirkland. The woman has underlying health conditions, and is in critical condition
- A male in his 70s, hospitalized at EvergreenHealth in Kirkland. The man has underlying health conditions, and is in critical condition
- A male in his 70s was hospitalized at EvergreenHealth. He had underlying health conditions and died on 2/29/20.
- A man in his 60s, hospitalized at Valley Medical Center in Renton.
- A man in 60s, hospitalized at Virginia Mason Medical Center.
- A woman in her 50s, who had traveled to South Korea; recovering at home
- A woman in her 70s, who was a resident of LifeCare in Kirkland, hospitalized at EvergreenHealth
- A woman in her 40s, employed by LifeCare, who is hospitalized at Overlake Medical Center
- A man in his 50s, who was hospitalized and died at EvergreenHealth

Public Health is working hard to identify close contacts of these confirmed cases. These close contacts may include family members, co-workers, emergency responders and other contacts. A team of CDC officials is on-the-ground working with Public Health, along with the Washington State

Department of Health, our healthcare system partners and many others.

The public can help:

1) **Do not go to the emergency room unless essential.** Emergency rooms need to be able to serve those with the most critical needs. If you have symptoms like cough, fever, or other respiratory problems, contact your regular doctor first.

2) Stay home when sick.

3) Practice excellent personal hygiene habits, including handwashing, coughing into tissue or elbow, avoid touching eyes, nose, or mouth.

4) Stay away from people who are ill, especially if you are 60 and older or have underlying health conditions such as diabetes, heart disease, lung disease, or a weakened immune system.

4) Stay informed. Information is changing frequently. Check and subscribe to Public Health's website (www.kingcounty.gov/COVID) or blog (www.publichealthinsider.com).

Providing effective and innovative health and disease prevention services for more than two million residents and visitors of King County, Public Health – Seattle & King County works for safer and healthier communities for everyone, every day. More at www.kingcounty.gov/health

Keep up with the latest Public Health news in King County by subscribing to the department's blog, Public Health Insider.

Facebook | Twitter | Instagram

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Washington State Department of

Health

From:	Kay, Meagan
To:	Morrison, Amy; McKeirnan, Shelly
Cc:	Brostrom-Smith, Claire; Clark, Shauna; Valenzuela, Matias
Subject:	RE: Follow-up to our call earlier this evening
Date:	Monday, March 2, 2020 1:37:00 PM
Attachments:	image001.png image002.png image003.png image004.png

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Your third question is addressed in CDC guidance on this page:
https://www.cdc.gov/coronavirus/2019-ncov/php/risk-assessment.html

Contacts of Asymptomatic People Exposed to COVID-19

CDC does not recommend testing, symptom monitoring or special management for people exposed to asymptomatic people with potential exposures to SARS-CoV-2 (such as in a household), i.e., "contacts of contacts;" these people are not considered exposed to SARS-CoV-2.

From: Morrison, Amy <Amy.Morrison@lwtech.edu>
Sent: Monday, March 2, 2020 1:09 PM
To: McKeirnan, Shelly <Shelly.McKeirnan@kingcounty.gov>
Cc: Kay, Meagan <Meagan.Kay@kingcounty.gov>; Brostrom-Smith, Claire <Claire.Brostrom-Smith@kingcounty.gov>; Clark, Shauna <shclark@kingcounty.gov>; Valenzuela, Matias <Matias.Valenzuela@kingcounty.gov>
Subject: RE: Follow-up to our call earlier this evening
Importance: High

Good Afternoon Shelly,

All of our students and faculty are now being asked to self-quarantine. We are working directly with them to accommodate their needs.

I have several follow-up needs:

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2. When can all of our students/faculty get tested? Can they be included in exposed health care provider testing at EvergreenHealth?

3. Finally, do you have written documentation that demonstrates that those who were not at LifeCare but live, work, and/or go to school with those directly exposed, are not at risk? Our students' spouses are being negatively impacted by their employers at this time and we need help communicating that community spread is not in effect at this time.

I am available all day on my cell at 425-256-1981.
Thank you,
Amy

Dr. Amy Morrison
President

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West Building, Room 301 | 11605 132nd Ave NE | Kirkland, WA 98034
T: (425) 739-8200 | amy.morrison@lwtech.edu

www.LWTech.edu | @LWTechPrez

From: McKeirnan, Shelly [mailto:Shelly.McKeirnan@kingcounty.gov]
Sent: Monday, March 2, 2020 10:00 AM
To: Morrison, Amy <Amy.Morrison@lwtech.edu>
Cc: Kay, Meagan <Meagan.Kay@kingcounty.gov>; Brostrom-Smith, Claire <Claire.Brostrom-Smith@kingcounty.gov>; Clark, Shauna <shclark@kingcounty.gov>; Valenzuela, Matias <Matias.Valenzuela@kingcounty.gov>
Subject: RE: Follow-up to our call earlier this evening

Thanks Amy, yes, the recommendation from Public Health (based on CDC recommendations) is for these students and faculty who were at LifeCare SNF to quarantine themselves at home for 14 days from their last exposure at SNF and they should be doing self-monitoring (more details on how to do this in the document I sent to you). All the faculty and staff who spent time at LifeCare recently are considered exposed. As of yesterday, there are 6 confirmed cases of COVID-19 infection in residents/staff of LifeCare with more testing in process.

Thanks, Shelly

Shelly McKeirnan (she/her), BSN MPH | Public Health Services Supervisor | Communicable Disease Epidemiology & Immunization Section | 401 5th Ave., Suite 1250 | Seattle WA 98104 | P: 206.296.4774 (Main) | P: 206.263.8195 (Direct) | F: 206.296.4803 | http://www.kingcounty.gov/health/cd
My normal work week is M-F (off work every other Wednesday)

message.

NOTICE OF PUBLIC DISCLOSURE: RCW 42.56 says that this e-mail account is public domain. What you write is a public record.

From: Morrison, Amy <Amy.Morrison@lwtech.edu>
Sent: Monday, March 2, 2020 8:26 AM
To: McKeirnan, Shelly <Shelly.McKeirnan@kingcounty.gov>
Cc: Kay, Meagan <Meagan.Kay@kingcounty.gov>; Brostrom-Smith, Claire <Claire.Brostrom-Smith@kingcounty.gov>; Clark, Shauna <shclark@kingcounty.gov>; Valenzuela, Matias <Matias.Valenzuela@kingcounty.gov>
Subject: RE: Follow-up to our call earlier this evening

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thank you Shelly,

I have communicated your request for self-monitoring with the anticipated final plan to self-quarantine to students and faculty at LifeCare. We are assessing what they need to do in order to be better prepared.

Please call me today any time at 425-256-1981.
Thanks.
Amy

From: McKeirnan, Shelly [mailto:Shelly.McKeirnan@kingcounty.gov]
Sent: Sunday, March 1, 2020 11:00 PM
To: Morrison, Amy <Amy.Morrison@lwtech.edu>
Cc: Kay, Meagan <Meagan.Kay@kingcounty.gov>; Brostrom-Smith, Claire <Claire.Brostrom-Smith@kingcounty.gov>; Clark, Shauna <shclark@kingcounty.gov>; Valenzuela, Matias <Matias.Valenzuela@kingcounty.gov>
Subject: Follow-up to our call earlier this evening

EXTERNAL SENDER: Use caution with links and attachments

Hi Amy, thanks so much for speaking with me earlier. I appreciate your concern for your students and faculty and I am sure this has been a challenging situation for you and the school. As I mentioned when we spoke, I am emailing you information on self-monitoring and quarantine (the self-monitoring information and chart for documentation are at the end of this document) for you to review. As I mentioned, based on the information we have about the risk assessment, we are recommending home quarantine and self-monitoring for the nursing and physical therapy students and staff who were at the Lifecare SNF in the last 14 days. The period of monitoring/quarantine is for 14 days after last exposure at LifeCare. This is based on the information that the students/faculty were providing clinical care to residents of LifeCare SNF at the SNF.

As of earlier this afternoon, we have 10 confirmed cases of COVID-19 in King County residents, 6 of

the 10 are residents/staff of LifeCare SNF, status update online at:
https://www.kingcounty.gov/depts/health/news/2020/March/1-covid19-4-cases.aspx

I understand you have concerns about the quarantine recommendation and the hardships for some of the students/staff, and we can discuss this further tomorrow. I will have one of our staff cc'ed on this email contact you tomorrow by email or call. I understand you want a final plan for management of the exposed students/faculty by the end of the day tomorrow. We will also reach out to the faculty member who is ill (thanks for her contact information and for letting her know we will be contacting her). If you get more information on the student who is not feeling well, we can follow-up with that person also.

Thanks, Shelly

Shelly McKeirnan (she/her), BSN MPH | Public Health Services Supervisor | Communicable Disease Epidemiology & Immunization Section | 401 5th Ave., Suite 1250 | Seattle WA 98104 | P: 206.296.4774 (Main) | P: 206.263.8195 (Direct) | F: 206.296.4803 | http://www.kingcounty.gov/health/cd
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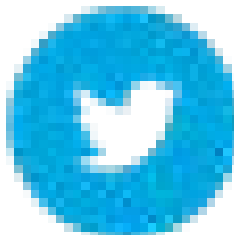

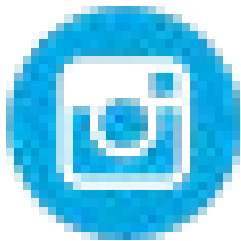

From: Kay, Meagan
To: Morrison, Amy; McKeirnan, Shelly
Cc: Brostrom-Smith, Claire; Clark, Shauna; Valenzuela, Matias
Subject: RE: Follow-up to our call earlier this evening
Date: Monday, March 2, 2020 1:32:00 PM
Attachments: image001.png
image002.png
image003.png
image004.png

Hi Amy,

Shelly is out of the office right now. If you have a provider with severe symptoms that needs urgent healthcare, they should call their healthcare provider or seek care and warn ahead of the exposure. If not, we are working to get testing arranged at a location – by appointment. We can let you know more as soon as the details are figured out.

From: Morrison, Amy <Amy.Morrison@lwtech.edu>
Sent: Monday, March 2, 2020 1:09 PM
To: McKeirnan, Shelly <Shelly.McKeirnan@kingcounty.gov>
Cc: Kay, Meagan <Meagan.Kay@kingcounty.gov>; Brostrom-Smith, Claire <Claire.Brostrom-Smith@kingcounty.gov>; Clark, Shauna <shclark@kingcounty.gov>; Valenzuela, Matias <Matias.Valenzuela@kingcounty.gov>
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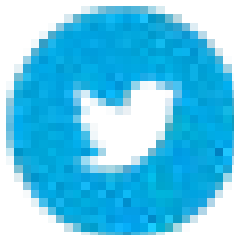

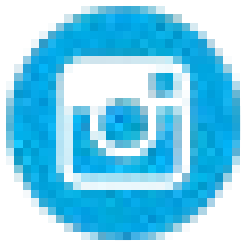

From:	Morrison, Amy
To:	McKeirnan, Shelly
Cc:	Kay, Meagan; Brostrom-Smith, Claire; Clark, Shauna; Valenzuela, Matias
Subject:	RE: Follow-up to our call earlier this evening
Date:	Monday, March 2, 2020 1:09:30 PM
Attachments:	image001.png image002.png image003.png image004.png

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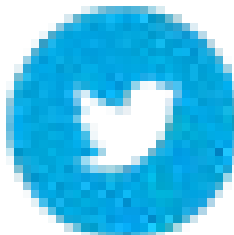

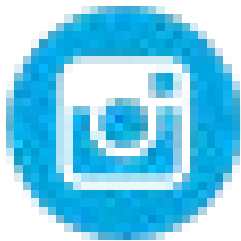

From: McKeirnan, Shelly
To: Kay, Meagan
Subject: RE: Follow-up to our call earlier this evening
Date: Monday, March 2, 2020 8:47:36 AM

She is resistant, I told her someone would get back to her to discuss again after the materials I sent her after she had chance to read them. She said they are all currently in QT but she was pushing back on that for 14 days. So someone needs to get back to her today. I told her based on what she told us, we are considering them all exposed to confirmed case at Lifecare and what the recommendation is from us (14 day QT from last day of exposure). Also, they have ill faculty member and maybe ill nursing student.

Thanks, Shelly

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From: Kay, Meagan <Meagan.Kay@kingcounty.gov>
Sent: Monday, March 2, 2020 8:37 AM
To: McKeirnan, Shelly <Shelly.McKeirnan@kingcounty.gov>
Subject: Fwd: Follow-up to our call earlier this evening

What does she mean anticipated final plan to quarantine. They should be doing that now.

From: Morrison, Amy <Amy.Morrison@lwtech.edu>
Sent: Monday, March 2, 2020 8:25:51 AM
To: McKeirnan, Shelly <Shelly.McKeirnan@kingcounty.gov>
Cc: Kay, Meagan <Meagan.Kay@kingcounty.gov>; Brostrom-Smith, Claire <Claire.Brostrom-Smith@kingcounty.gov>; Clark, Shauna <shclark@kingcounty.gov>; Valenzuela, Matias <Matias.Valenzuela@kingcounty.gov>
Subject: RE: Follow-up to our call earlier this evening

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Amy

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To: Morrison, Amy <Amy.Morrison@lwtech.edu>
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Cc: Kay, Meagan; Brostrom-Smith, Claire; Clark, Shauna; Valenzuela, Matias
Subject: RE: Follow-up to our call earlier this evening
Date: Monday, March 2, 2020 8:25:55 AM

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Cc: Brostrom-Smith, Claire; Clark, Shauna; Valenzuela, Matias
Subject: RE: Follow-up to our call earlier this evening
Date: Monday, March 2, 2020 1:46:09 PM
Attachments: image001.png
image002.png
image003.png
image004.png

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Okay thank you.
Amy

From: Kay, Meagan [mailto:Meagan.Kay@kingcounty.gov]
Sent: Monday, March 2, 2020 1:33 PM
To: Morrison, Amy <Amy.Morrison@lwtech.edu>; McKeirnan, Shelly <Shelly.McKeirnan@kingcounty.gov>
Cc: Brostrom-Smith, Claire <Claire.Brostrom-Smith@kingcounty.gov>; Clark, Shauna <shclark@kingcounty.gov>; Valenzuela, Matias <Matias.Valenzuela@kingcounty.gov>
Subject: RE: Follow-up to our call earlier this evening

EXTERNAL SENDER: Use caution with links and attachments

Hi Amy,

Shelly is out of the office right now. If you have a provider with severe symptoms that needs urgent healthcare, they should call their healthcare provider or seek care and warn ahead of the exposure. If not, we are working to get testing arranged at a location – by appointment. We can let you know more as soon as the details are figured out.

From: Morrison, Amy <Amy.Morrison@lwtech.edu>
Sent: Monday, March 2, 2020 1:09 PM
To: McKeirnan, Shelly <Shelly.McKeirnan@kingcounty.gov>
Cc: Kay, Meagan <Meagan.Kay@kingcounty.gov>; Brostrom-Smith, Claire <Claire.Brostrom-Smith@kingcounty.gov>; Clark, Shauna <shclark@kingcounty.gov>; Valenzuela, Matias <Matias.Valenzuela@kingcounty.gov>
Subject: RE: Follow-up to our call earlier this evening
Importance: High

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Good Afternoon Shelly,

All of our students and faculty are now being asked to self-quarantine. We are working directly with

them to accommodate their needs.

I have several follow-up needs:

1. One faculty member (who's information is shared with you yesterday) continues to have severe symptoms and has not yet been contacted. Four students have mild symptoms. I need to get them tested. How can I prioritize their testing? Please advise.

2. When can all of our students/faculty get tested? Can they be included in exposed health care provider testing at EvergreenHealth?

3. Finally, do you have written documentation that demonstrates that those who were not at LifeCare but live, work, and/or go to school with those directly exposed, are not at risk? Our students' spouses are being negatively impacted by their employers at this time and we need help communicating that community spread is not in effect at this time.

I am available all day on my cell at 425-256-1981.
Thank you,
Amy

Dr. Amy Morrison
President

Lake Washington Institute of Technology™
LWTech.edu

West Building, Room 301 | 11605 132nd Ave NE | Kirkland, WA 98034
T: (425) 739-8200 | amy.morrison@lwtech.edu

www.LWTech.edu | @LWTechPrez

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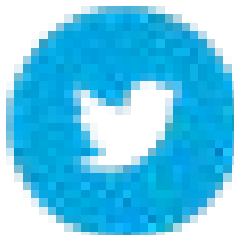

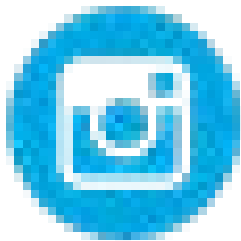

From: Clark, Thomas A. (CDC/DDID/NCIRD/DVD)
To: Lofy, Kathy KL (CDC doh.wa.gov); Duchin, Jeff
Subject: Santa Clara County Phased Approach to COVID Mit 03012020
Date: Monday, March 2, 2020 3:28:08 PM
Attachments: Santa Clara County Phased Approach to COVID Mit 03012020.docx
Contact One-pager 20200302.docx
Phased approach guidance - DRAFT 030120v4.docx

For Consideration//Draft 3/1/2020

Santa Clara County Phased Approach to COVID-19 Mitigation

Targeted Layered Mitigation Overarching Goals: The targeted layered mitigation strategy is a phased approach to individual, community, business, and healthcare inventions aimed to:

1. Slow transmission and acceleration of disease
2. Minimize morbidity and mortality
3. Preserve function of healthcare, workforce, infrastructure, and minimize social and economic impacts

An "all of community approach" will be needed to implement Targeted Layered Mitigation (TLM). Implementation emphasizes that:

- Life should go with as little disruption as possible,
- Individual responsibility,
- Empowering business and communities, and
- Effective healthcare response

Actions in the community will vary based on epidemiology, severity, and capacity and capabilities of the available public health and healthcare resources.

Immediate Steps to Consider

- Continue contact tracing, monitor and observe contacts as advised in guidance. Focus here is containment around cases.

Phase 1. Enhanced personal protective measures.

Trigger. First travel-related case

Rationale. Personal protective measures are preventive actions that can be used daily to slow the spread of COVID-19.

Recommendations. (Note: This has already been implemented)

- For individuals, the recommendations are very simple, but very important:
    - Keep your hands clean. It is one of the most important steps you can take to avoid getting sick and spreading germs to others. And always need to cover your cough and stay home when you are sick.
    - Today, start working on not touching your face because one way viruses spread is when you touch your own mouth, nose or eyes.
    - Since we know the disease is here, we all need to stay away from people who are sick.
    - And finally, start thinking about family preparedness, how to take care of sick family while not getting infected. Think about a room to isolate a sick person.
- For communities, we need to prepare for the possibility of widespread transmission,
    - Here are some examples of practical measures that can help limit spread by reducing exposure in community settings.
    - Schools: should plan for absenteeism and explore options for tele-learning and enhance surface cleaning.

  - Businesses, whenever possible, can replace in-person meetings with video or telephone conferences and increase teleworking options and modify absenteeism policies and also enhance surface cleaning.

- What can I do to protect myself?
  - Start preparing your family and home over the coming days and weeks:
  - Meet with household members, other relatives, and friends to discuss what should be done if a pandemic occurs and what the needs of each person will be.
  - Discuss how you are going to care for family members or loved ones if they become ill, including how to protect the ones giving care.
  - Think about a room in your home that can be used to separate sick household members from those who are healthy. If possible, also choose a bathroom for the sick person to use. Plan to clean these rooms daily. Learn how to care for someone at home.
  - Identify alternative childcare or consider keeping your children at home.
  - If your neighborhood has a website or social media page, consider joining it to stay connected to neighbors, information, and resources.
  - Identify organizations in your community that can help. Consider including organizations that provide mental health or counseling services, food, and other supplies.
  - Create an emergency contact list. Ensure that your household has a current list of emergency contacts for family, friends, neighbors, carpool drivers, health care providers, teachers, employers, and other community resources.
  - Stock up on recommended supplies:
    - Store a two-week supply of water and food.
    - Periodically check your regular prescription drugs to ensure a continuous supply in your home. If you can, have at least a one-month supply of your prescription drugs.
    - Have any nonprescription drugs and other health supplies on hand, including pain relievers, stomach remedies, cough and cold medicines, fluids with electrolytes, and vitamins.
    - Include cleaning supplies (soap, antibacterial wipes, hand sanitizers, bleach, rubber gloves, disposable face masks, tissues, toilet paper, and cold medicines.
  - Practice good hygiene:
    - Stay home when you are sick.
    - Cover coughs and sneezes with a tissue or sleeve.
    - Keep your hands clean. Wash hands with soap and water or using hand sanitizer when soap and water are not available.
    - Stay away from people who are sick.
    - Do not touch your face (nose, eyes, mouth) because viruses can spread to you when you touch your own mouth, nose or eyes.
- What is social distancing?
  - Social distancing is a way to slow the spread of a virus. Social distancing includes personal things you can do, and larger public health actions that can be taken.
  - Personal social distancing includes:
  - Washing your hands after touching commonly used items or coming into contact with someone who is sick. Scrub your hands for at least 20 seconds with soap and water.
  - Disposing things that come in contact with your mouth such as tissues or plastic eating utensils.

  - Stay away from people who show symptoms of an illness.
  - If you work closely to others, try to keep a distance of approximately three feet from the nearest person while at work.
  - Avoid large public venues such as theaters or sporting events.
- What should schools do?
  - Schools should start planning for the possibility of widespread transmission in our community. This should include plans for absenteeism and exploring options for tele-learning and enhance surface cleaning.
  - When should I keep my child home from school?
  - If anyone is ill with fever, cough or other symptoms, they should stay home from work or school and other public activities until at least 24 hours after they have recovered.
- What Should Businesses Do?
  - Businesses should prepare for widespread transmission in our community. Planning should consider replacing in-person meetings with video or telephone conferences; an increased ability for teleworking options; and, modifying absenteeism policies and enhancing surface cleaning.

Phase 2. Emphasizing protecting vulnerable populations.

Trigger. Second confirmed case of community transmission

Rationale. Based on our current understanding of COVID-19, older adults (65+) and adults with underlying medical problems (such, as diabetes, COPD, etc) are at high risk of severe illness and death. The following recommendations are designed to focus on protecting these vulnerable populations initially. Additional recommendations designed to protect additional groups of individuals may be needed in the future depending on the evolution of the outbreak.

Recommendations.

- Communicate with vulnerable populations about personal hygiene measures
  - Respiratory hygiene etiquette
  - Staying home when sick[DM1]
  - Contact provider
  - Enhanced cleaning of environmental surfaces
- Identify and target outreach to vulnerable population community leaders
  - Nursing homes
  - Retirement communities
  - Rehabilitation facilities
  - Certain ethnic groups??
  - Prisons and jails??
- In assisted and group living situations
  - Enhanced screening of visitors, staff, and patients for symptoms
  - Enhanced cleaning of environmental surfaces
- Congregate settings
  - Recommend high-risk individuals avoiding mass gatherings such as parades, sporting events, and concerts.

    - Recommend high-risk individuals consider avoiding other settings where people congregate such as community centers or movie theaters.
- Recommend faith-based and other community organizations to scale back large group activities (e.g. services, group congregation) especially for high risk groups (e.g., the elderly).
- Healthcare considerations
    - Reinforce existing messaging around guidance; specific outreach to long-term care facilities and skilled nursing (new guidance available from cdc)

Phase 3. Maximizing social distancing

Trigger. Three (????) confirmed cases of community transmission

Rationale. Reducing congregation of people can reduce transmission, prevent illness, and slow the course of the epidemic.

- For individuals
    - Recommend that all people avoid attending gatherings such as parades, concerts, and sporting events, if possible.
    - If they do attend large gatherings, ask people to try to maintain at least 6 feet (2 meters) of distance between themselves and others
- For the community
    - Ask businesses to employ strategies to increase social distancing, including maximizing use of telework policies, canceling in-person meetings or assemblies, and consider alternate team approaches for work schedules
    - Ask schools to employ strategies increase social distancing
        - Pre-K
            - Enhanced screening of visitors, staff, and kids for symptoms, with clear guidance to not come to school if any symptoms
        - K-12
            - Enhanced screening of visitors, staff, and students for symptoms, with clear guidance to not come to school if any symptoms
            - Cancelling large group and communal activities like assemblies, camps, mass celebrations
        - Universities and college campuses
            - Cancelling large group and communal activities like lectures, mass celebrations, and sporting events.
            - Provide information to students and faculty to encourage minimizing interactions in dorms and dining halls
    - Ask faith-based and community-based organizations to cancel/postpone gatherings, religious gatherings, celebrations, and events
    - Ask event organizers to postpone large gatherings such as concerts, music festivals, and parades
    - Ask businesses to allow liberal leave and telework policies, 5-day leave policies for people with symptoms, consider alternate team approaches for work schedules.

Phase 4. School cancellation/dismissal

Trigger. Case with school contacts has been identified??

Rationale. Preventing the spread of disease in educational settings among children and young adults may be one of the most effective measures to reduce the risk for infection for these age groups and slows virus transmission in the community.

Recommendation.

- Dismiss or cancel schools until further notice

Appendix 1. Possible K-12 Social Distancing Strategies

- Split classes into smaller groups of students and staff
- Cancelling large group and communal activities like assemblies, camps, mass celebrations
- Stagger times for larger groups to congregate (e.g., entrance and dismissal, recess, mealtimes)
- Hold after school activities in small groups only (size at the discretion of local authorities) or consider cancelling them

What to do if you were potentially exposed to someone with coronavirus disease 2019 (COVID-19)

If you think you have been exposed to someone with COVID-19, follow the steps below to monitor your health and avoid spreading the disease to others if you get sick.

What is coronavirus disease 2019 (COVID-19)?

COVID-19 is a respiratory disease caused by a new virus called SARS-CoV-2. The most common symptoms of the disease are fever and cough. Most people with COVID-19 will have mild disease but some people will get sicker and need to be hospitalized.

How do I know if I was exposed?

COVID-19 is most commonly spread to people who come into face-to-face contact with someone who is sick with COVID-19.

What should I do if I think I was exposed to someone with COVID-19?

People who think they may have been exposed to someone with COVID-19 should monitor their health for fever and other respiratory symptoms like cough or sore throat during the 14 days after the last day they were in close contact with the ill person with COVID-19.

If I do not have symptoms, can I go to work, school and other public places?

Yes, if you do not have symptoms, you can go to work, school and other public places.

What should I do if I get sick?

If you get sick with fever, cough, or other respiratory symptoms (even if they are very mild), you should immediately go home and stay away from other people.

If your symptoms are mild symptoms, you can stay at home, rest, and drink plenty of fluids.

If your symptoms worsen, you should call your healthcare provider and tell them that you were exposed to someone with COVID-19. This will help the healthcare provider's office take steps to keep other people from getting infected or exposed.

If you have any of the following conditions—age 60 years or over, diabetes, chronic lung diseases, or chronic serious heart disease, contact your physician's office. They may want to monitor your health more closely. Your physician may want to test you for influenza or other respiratory viruses.

If you have a medical emergency and need to call 911, notify the dispatch personnel that you have, or are being evaluated for COVID-19. If possible, put on a facemask before emergency medical services arrive or immediately after they arrive.

Example of Phased Mitigation Options
Actions for Communities with Local Spread

Targeted Layered Mitigation Overarching Goals: The targeted layered mitigation strategy is a phased approach to individual, community, business, and healthcare inventions aimed to:

1. Slow transmission and acceleration of disease
2. Minimize morbidity and mortality
3. Preserve function of healthcare, workforce, infrastructure, and minimize social and economic impacts

An "all of community approach" will be needed to implement Targeted Layered Mitigation (TLM). Implementation emphasizes that:

- ~~Life should go with as little disruption as possible,~~
- Individual responsibility,
- Empowering business and communities, and
- Effective healthcare response

Actions in the community will vary based on epidemiology, severity, and capacity and capabilities of the available public health and healthcare resources. TLM is categorized in four key areas: 1) Individual and household actions, 2) Community interventions 3) Healthcare system response, 4) Travel and border health. This appendix outlines the guiding principles, key areas for actions. Implementation will be a phased approach. This strategy will evolve as USG learns more.

As communities begin to have outbreak/cases (3 generations of spread, signals of community spread, multiple healthcare facilities impacted) a phased in approach to begin mitigation should be used.
~~Note:~~ Decisions regarding the point at which an individual jurisdiction reaches this threshold for transition from active case finding and contact tracing and broad testing (Phase 1) to broad social distancing messaging and symptom monitoring with targeted testing of high risk individuals (Phase 2) may vary based on the capacity of an individual health department jurisdiction (e.g., city, county) and should be made in joint discussion with state health officials, leveraging additional resources that may be available from adjacent jurisdictions, the state and federal government. It is recognized that within an individual state one jurisdiction may transition from this containment (Phase 1) to mitigation (Phase 2) strategy while another jurisdiction in the same state may still be in containment (Phase 1) or be exiting from mitigation (Phase 2) into recovery.

Below Outlines Immediate Steps to Consider for Action
Phase 1.

- Communications: Communicate to the public about individual and household responsibility and importance of actions to:
  - Recognize symptoms
    - Call healthcare provider BEFORE arriving at the healthcare setting
  - Stay at home if you're ill
  - Care at home if you or a family member is ill
  - Prepare for disruption

- Active case finding: Continue contact tracing, monitor and observe contacts as advised in guidance. Focus here is containment around cases. Consider also testing cases of hospitalized pneumonia with unknown cause.
    - Self isolation: Initial decisions regarding duration of self-isolation may be based on existing guidance that recommends two sets of NP and OP swabs collected greater than 24 hours apart to be negative.
    - Self quarantine; For close contacts that may be exposed to a confirmed COVID-19 case, individuals should be counseled to stay at home (out of social circles, minimize community movement), watch for signs and symptoms of COVID-19 illness (fever, cough, SOB), for 14 days.
    - Monitoring of isolated and quarantined patients should be done to the extent needed for adequate public health action.

- **Phase 2**
    - Communications: emphasize individual and household actions above. Messages should strengthen on staying at home when you're sick if illness is mild (COVID-19 or non-COVID-19) and understanding when to seek care.
        - Consider using decision trees, self checkers to help direct people to the right level of care
    - ~~(c~~Case identification and contact tracing~~)~~:~~.~~ Determine cases to be identified and extent of contact tracking
        - As case counts increase, it is recognized that detailed ~~ongoing~~ contact tracing [bop11]~~will~~may no longer be possible due to the numbers of individuals and contacts.
        - At this point, it will be important to communicate broadly that individuals with signs and symptoms of COVID-19 (e.g., fever, cough, shortness of breath) self-isolate in their home to reduce the risk of subsequent risk of infecting others.
        - Self-isolation timeframe:
            - Initial decisions regarding duration of self-isolation could be based on existing guidance that recommends two sets of NP and OP swabs collected greater than 24 hours apart to be negative.
            - ~~However,~~ As state and local resources to conduct home based testing (or facility-based outpatient testing) to be constrained, decisions could be based on 7-14 days of isolation with symptom resolution (no fever for 72 hours, improved other symptoms[bop12]).
        - Recognizing the challenges with isolation for 14 days for large numbers of people (individual challenges regarding being out of work, and societal challenges associated with having large numbers of people out of work) shorter periods (e.g., 7 days) with a minimum of 72 hours ~~of afebrility~~with no fever and improved symptoms may be an approach jurisdictions may elect to consider.
    - Self-quarantine:
        - Similarly, it is recognized that as large numbers of cases occur in the community, and there is risk to societal disruption, the role of quarantine of close contacts of confirmed cases will be a challenge.
        - Ideally, individuals should be counseled to stay at home (out of social circles, minimize community movement), watch for signs and symptoms of COVID-19 illness (fever, cough, SOB), for 14 days.

- If possible ~~Again, using~~Recognizing the role of individual responsibility, a ~~social responsibility principle~~, individuals ~~will~~ should be counseled to stay at home (out of social circles, minimize community movement), watch for signs and symptoms of COVID-19 illness (fever, cough, SOB), ~~and self-isolate~~for 7 days. ~~as noted above.~~

- Phase 2 (testing): Decisions regarding discontinuing routine testing will be based on the metrics noted above regarding jurisdictional evidence of widespread community transmission (3 generations of spread, signals of community spread, multiple healthcare facilities impacted, with local health jurisdictions unable to conduct contact tracing of all cases, quarantine or isolation activities limiting the ability of essential societal functions to continue).

  Testing of high-risk individuals is still recommended for:

  - Asthma
  - Neurologic and neurodevelopment conditions
  - Blood disorders (such as sickle cell disease)
  - Chronic lung disease (such as chronic obstructive pulmonary disease [COPD] and cystic fibrosis)
  - Endocrine disorders (such as diabetes mellitus)
  - Heart disease (such as congenital heart disease, congestive heart failure and coronary artery disease)
  - Kidney disorders
  - Liver disorders
  - Metabolic disorders (such as inherited metabolic disorders and mitochondrial disorders)
  - People who are obese with a body mass index [BMI] of 40 or higher
  - People younger than 19 years of age on long-term aspirin- or salicylate-containing medications.
  - People with a weakened immune system due to disease (such as people with HIV or AIDS, or some cancers such as leukemia) or medications (such as those receiving chemotherapy or radiation treatment for cancer, or persons with chronic conditions requiring chronic corticosteroids or other drugs that suppress the immune system)Adults 65 years and older
  - Children younger than 2 years old[1]
  - Pregnant women and women up to 2 weeks after the end of pregnancy
  - American Indians and Alaska Natives
  - People who live in nursing homes and other long-term care facilities

*Note: For all individuals for whom a decision is made for home-isolation, use of telemedicine and use of nurse triage lines is encouraged to ensure those in isolation are assessed for clinical improvement and, if there is progression of symptoms, appropriate triage to higher levels of evaluation and care. Coordination between state, local and federal public health and healthcare will be important to ensure access for all individuals to these services.

~~Note: Decisions regarding the point at which an individual jurisdiction reaches this threshold for transition from active case finding and contact tracing and broad testing (Phase 1) to broad social distancing messaging and symptom monitoring with targeted testing of high risk individuals (Phase 2) may vary based on the capacity of an individual health department jurisdiction (e.g., city, county) and~~

~~should be made in joint discussion with state health officials, leveraging additional resources that may be available from adjacent jurisdictions, the state and federal government. It is recognized that within an individual state one jurisdiction may transition from this containment (Phase 1) to mitigation (Phase 2) strategy while another jurisdiction in the same state may still be in containment (Phase 1) or be exiting from mitigation (Phase 2) into recovery.~~

- For medical facilities:
  - Ensure triage
  - Assess infection control actions; assess personal protective equipment (PPE) needs and optimize PPE use
  - Assess visitor policies
    - Consider restriction of visitors to reduce healthcare facility-based transmission.
  - ~~o~~ Healthcare workers: Identify exposed healthcare workers, request exposed HCWs voluntary home quarantine (See sub-bullet 4)[bop13]
  -
    - ~~consideration: hospital may need to go on diversion due to staffing limitations~~
    - Monitor absenteeism and respiratory illness among non-exposed HCWs
    - Messaging for healthcare workers for the hospitals
    - As the numbers of cases in the community increase, It is recognized that critical work shortage may occur with home quarantine of HCWs having high or medium risk contacts of confirmed cases, and prevent optimal operation of essential clinical services; facilities in conjunction with their local, state health departments should in this setting institute fever and symptom monitoring for health care workers that are contacts of PUIs or confirmed cases, at the beginning and middle of a shift, to ensure continuity of facility operations. If HCWs become symptomatic or develop a fever at any time during the shift, they should report to the facility occupational health clinic, be masked and triaged to home (if mildly ill) or further evaluated (if moderately or more severely ill).

~~Communicate to the public about individual and household actions to:~~
- ~~Recognize symptoms~~
  - ~~Call healthcare provider BEFORE arriving at the healthcare setting~~
- ~~Stay at home if you're ill~~
- ~~Care at home if you or a family member is ill~~
- ~~Prepare for disruption~~

- Generous with medical evaluation, medical leave for ~~5~~ 7 days for low clinical acuity/mild illness, if illness continu~~es~~es~~ous~~ see healthcare provider

- Communicate to business, faith-based and community leaders about encouraging hygiene, actions individuals can take and responsibility messages.

- Ask businesses to asses[author4] continuity of business plans – should include liberal leave and telework policies, 7~~5~~-day leave policies for people with symptoms, consider alternate team approaches for work schedules. Also, know how their resources

- Ask faith-based and other community organizations to consider scaling back large group activities (e.g. services, group congregation) especially for high risk groups (e.g., the elderly).

- Ask organizers of community-wide mass gatherings of more than 500 people to consider cancelling events or move to smaller groupings.

- Schools:
  - For schools that are not impacted (no students, or teachers with confirmed cases that may have exposed others), actions should focus on minimize an individuals interactions with various groups ~~Ask local education agencies and colleges and universities~~ to consider[bop15]:
    - ~~Cancelling large group and communal activities like assemblies, camps, mass celebrations~~
    - Stagger times for larger groups to congregate (e.g., entrance and dismissal, recess, meal times)
    - Hold after school activities in small groups only (size at the discretion of local authorities)
    - Cancelling large group and communal activities like assemblies, camps, mass celebrations
    -
    - Consider regular health checks (e.g., temperature screening) of students, staff and visitors.
  - In schools where cases have been identified, ~~one~~ allow one-three days for closure for cleaning and contact tracing to inform if larger school closures may be needed and duration. Contacts of exposed person should follow community exposure self-quarantine described above (7-14 days),. In addition, all ~~14 day leave for contacts,~~ extra curricular activities should be suspended for two weeks~~,~~ smaller class sizes should be considered rather than large lectures. Students and families should be reminded to minimize congregation outside of school setting

From: Healthcare Emergency Coordination Center
To: Healthcare Emergency Coordination Center
Subject: Snapshot #1 2020-03-02 - COVID-19
Date: Monday, March 2, 2020 3:46:43 PM
Attachments: image002.png
image003.png
COVID-19 Healthcare Planning Checklist.pdf
COVID-19-Snapshot_1_2020-03-02.pdf

Snapshot Report #1

HEALTHCARE EMERGENCY COORDINATION CENTER (HECC)
DATE: 03/02/2020
TIME: 1540hrs
Distributed to: Healthcare, Public Health, State, and Sovereign Tribal partners throughout the W. WA Coalition service area.

COVID-19 Response

SITUATION UPDATE
The Northwest Healthcare Response Network (NWHRN) Healthcare Emergency Coordination Center (HECC) has carried out the following activities to support the healthcare coalition and state DOH-IMT COVID-19 mitigation and response efforts:

If you have questions about what is happening in Washington State, how the virus is spread, and what to do if you have symptoms, please call 1-800-525-0127 and press #.

- In collaboration with the WA State Department of Health (DOH) Incident Management Team (IMT)DOH-IMT, developed and distributed a Healthcare Capability Survey to all healthcare coalition partners.
- Incorporated resource links regarding COVID-19 into the NWHRN website.
- Co-sponsored the DOH webinar "COVID-19: Readying our Healthcare System" held February 28, from 11am to 12pm.
- Hosted King County hospital call on Sunday, March 1, with information shared by Public Health Seattle & King County (PHSKC).
- The HECC is assisting partners with resource requests they are unable to fulfill through normal channels. Please note some items, such as key personal protective equipment, are in very short supply, but we continue to work with public health and healthcare partners to urgently acquire additional PPE, as best as possible.
- COVID-19 Healthcare Planning Checklist (Attached in Email).
- Office of the Assistant Secretary for Preparedness and Response (ASPR) hosts COVID-19 stakeholder call.
  - What: COVID-19 Stakeholder Call to Action
  - When: Monday, March 2, 2020 (6:00-7:00 pm ET)
  - Dial-in Number: 1-800-369-1924
  - Passcode: 8652907

NWHRN NEXT STEPS
The NWHRN HECC anticipates carrying out the following tasks over the next 7-day operational period:
- Continue to provide support to WA State Department of Health (DOH) Incident Management Team (IMT) and other activated jurisdictions with HECC Support or NWHRN Agency Representative
- Planning forward collaboratively with Coalitions, Local Health Jurisdictions, and DOH to ensure healthcare is represented throughout the duration of the COVID-19 response.
- Convening calls with healthcare and Local Health Jurisdictions regularly to discuss ongoing support and identify gaps.
- Assisting with information gathering around potential supply chain needs.
- Working with DOH-IMT mitigation branch and other activated jurisdictions to support healthcare assessment, PPE conservation, and surge strategies.

ROLE	EMAIL

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Operations Section Chief	OpsSC.HECC@nwhrn.org
Logistics Section Chief	LogsSC.HECC@nwhrn.org

Healthcare Emergency Coordination Center
Northwest Healthcare Response Network
24/7 Duty Officer Line: 425-988-2897
hecc@nwhrn.org

Security settings or invalid file format do not permit using COVID-19 Healthcare Planning Checklist.pdf (601789 Bytes).

NORTHWEST HEALTHCARE Response Network®

Duty Officer (24/7): 425-988-2897
HECC Email: hecc@nwhrn.org
Twitter: @TheNetworkNWHRN

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From: Duchin, Jeff
To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP); Clark, Thomas A. (CDC/DDID/NCIRD/DVD)
Cc: Kay, Meagan
Subject: Thank You
Date: Sunday, March 1, 2020 9:03:00 PM

Thanks again to you both ad the CDC team for joining us today. As you observed, we're in criis response mode and feeling the stress. Key things I'd like your help with tomorrow (Meagan may have additional suggestions) below. We discussed some of thi today, would appreciate any summaries we can uise to sare with decision makers and new ideas and well as help with material development where appropriate.

1) Assessment of the LifeCare SNF response - are we doing all we can be doing? Any issues identified to improve our response and maximize protection of residents and staff?
2) Support helping us draft policies/procedures to pivot away from containment to mitigation. Specifically: who to investigate, what info to collect, what guidance to provide to cases, their close contacts and public.
3) Help provide any available data for decision making re: pivot from containment to mitigation: severity, transmissibility, current thinking about cost/benefit, effectiveness/downsides of individual measures in the context of CoV. Info sheets for the public on what to do if I have/have been exposed to COVID-19; info for HCW guidance for if exposed and quarantine isolated at home.

I think there may have been a few things on the list I'm not able to recall at the moment and I'm passing out.

See you tomorrow.

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
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From: IDSA Daily News Briefing
To: Duchin, Jeff
Subject: Washington State Health Officials Confirm First Two Coronavirus Deaths In US
Date: Monday, March 2, 2020 5:03:54 AM

Good morning Jeffrey Duchin March 2, 2020

Renew Your IDSA Membership Today

Your IDSA membership has lapsed. Renew today to continue to receive these daily news briefings and maintain your membership in the premier professional organization in infectious diseases.

IDSA, HIVMA & THE JOURNALS IN THE NEWS

Study Indicates SVR Is An Important Endpoint For Patients With HCV

Healio (2/28, Stulpin) reports that while SVR "has been challenged in regard to its association with clinical outcomes," a study published in Clinical Infectious Diseases "has been confirmed as a prognosis-altering endpoint in patients with hepatitis C virus [HCV]." The study's results suggest that "SVR can serve as a surrogate endpoint that results in better clinical outcomes."

No Difference Reported In Risk For Serious Neuropsychiatric Events In Patients Who Received Oseltamivir In 30 Days After Influenza Diagnosis, Study Finds

Infectious Disease Advisor (2/28) reported that according to a study published in Clinical Infectious Diseases, "no difference was seen in the risk for serious neuropsychiatric events in patients who received oseltamivir in the 30 days after influenza diagnosis compared with those who did not. Further, the risk for moderate to severe neuropsychiatric events was significantly lower among those prescribed oseltamivir."

Researchers Detect Coronavirus In Saliva Of Patients

Healio (3/1, Dreisbach) reports researchers detected the coronavirus "in the saliva of 11 of 12 patients infected with the virus," according to a study published in Clinical Infectious Diseases. The study's findings suggest that saliva tests might be viable for the diagnosis and management of the virus.

Expert Discusses How Prepared Africa Is For COVID-19 Compared To The Rest Of The World

Bertha Serwa Ayi, MD, FACP, FIDSA, MBA, an adjunct Assistant Professor of Medicine at the Nebraska

Medical Center, wrote in a guest post for IDSA's Science Speaks (2/28) blog about the impact COVID-19 is already having around the world, and how "it seems the world is waiting and watching, nail-biting to see what will happen if it takes root in Africa." Dr. Ayi said that "although its healthcare infrastructure lags behind the world it is wields great experience in surveillance for poliomyelitis, cholera and Ebola virus and may be better prepared than other systems." Dr. Ayi highlighted Ghana as "a case in point" saying "the country is ready for the first few 100 cases," but "a case load beyond 1000s may overwhelm the current strategic plan."

DISEASES & CONDITIONS

Scientists In China And Singapore Reportedly Using Blood Test That Can Identify People Who Have Previously Been Exposed To Coronavirus

NPR (2/28, Harris) reported scientists in China and Singapore are using a blood test that can identify people who have been previously exposed to coronavirus, and scientists in the US are working to develop a similar test here. NPR said that such tests can help identify people who had asymptomatic infections and thus aid the tracking of outbreaks.

Researchers Say Those Who Have Recovered From COVID-19 May Still Be Virus Carriers. CIDRAP (2/28, Beusekom) reported researchers found that "four medical professionals with COVID-19 who met the criteria for hospital release or lifting of quarantine in China had positive real-time reverse transcriptase-polymerase chain reaction results 5 to 13 days later." The researchers wrote in a research letter published in JAMA, "These findings suggest that at least a proportion of recovered patients may still be virus carriers."

Researchers Identify Similarities Between CT Scans Of COVID-19, SARS, And MERS

Diagnostic Imaging (2/28, Palmer) reported researchers found in a review study that while "initial features for COVID-19 seen on CT scans have been non-specific,...the findings are significantly similar to the two previous viral outbreaks that also caused worldwide concern in the past 20 years – SARS and MERS." The review study was published in the American Journal of Roentgenology.

From IDSA

Excellence + Passion + Drive + Commitment = FIDSA

Fellowship in IDSA, or FIDSA, honors members who have worked tirelessly to achieve professional excellence through significant service in ID through clinical practice, research, administration or education. Interested candidates should demonstrate excellence in the profession through clinical practice, academic, or administrator tracks and must have completed training at least five years ago. In addition, they must have been a member of IDSA for a minimum of five years. The deadline to apply is **April 17, 2020**. Complete eligibility requirements and the application for fellowship are available here.

Existing fellows are strongly encouraged to identify other commendable individuals and inspire them to apply for this respected distinction.

The IDSA Guidelines App is Here!

IDSA has developed an IDSA Guidelines App that includes all IDSA guidelines and five interactive clinical diagnostic tools, which provide decision-making support. Once the app is downloaded, all guidelines are available offline on your tablet or mobile device. An internet connection is only necessary to download the app or when downloading updates.

Download the app from your app store by searching "IDSA Guidelines" or download from Apple or Android.

PUBLIC HEALTH NEWS

Washington State Health Officials Confirm First Two Coronavirus Deaths In US

The AP (3/1, Flaccus, Superville) reports Washington state health officials confirmed that two people have died in the state from coronavirus marking the first two deaths from the virus in the US. Officials said both of the deceased had underlying health conditions.

The Wall Street Journal (3/1, A1, Abbott, Mullins, Subscription Publication) reports that the deaths in Washington and a cluster of confirmed cases in states such as Oregon and California may indicate the virus is more widespread in some communities.

Researchers Say Coronavirus May Have Been Spreading In Washington For Weeks Based On Genomic Analysis Of Two Infections. The New York Times (3/1, A1, Fink, Baker) reports researchers "examined the genomes of two coronavirus infections in Washington" and found similarities that suggest "the virus may have been spreading in the state for weeks." The researchers compared the genomes of the coronavirus found in the first case in Washington back in January, which was also the first reported case in the US, with the coronavirus found in a more recent case in Washington and found similarities suggesting the cases were related by currently unknown ties.

USA Today (3/1, Bacon) reports Trevord Bedford, a biologist at Fred Hutchinson Cancer Research Center who was involved in the research, said that based on the study's results there may already be hundreds of cases in Washington alone. Bedford said, "I believe we're facing an already substantial outbreak in Washington State that was not detected until now. There are some enormous implications here."

Health Officials Announce Possible Coronavirus Outbreak At Long-Term Care Facility In Washington. The Hill (2/29, Sullivan) reported health officials announced there may be an outbreak of coronavirus at a long-term care facility in Kirkland, Washington called Life Care. The Hill says that "there are two presumptive positives associated with the facility, one a health care worker and the other a woman in her 70s," and in addition, "approximately 27 of 108 residents and 25 of 180 staff have some kind of symptoms and are being tested."

STAT (2/29, Facher) reported Jeff Duchin, a local health official, said, "We are very concerned about an outbreak in a setting where there are many older people, as we would be wherever people who are susceptible might be gathering." Duchin added that currently no link has been identified between the deceased and the facility.

California, Oregon, And Washington Say There Is Community Spread Of The Coronavirus In Their States. CIDRAP (2/29, Schirring) reported California, Oregon, and Washington all say that there is community spread of the coronavirus in their states. CIDRAP said that there have now been four cases of community spread within those states.

COVID-19 Cases Soar In South Korea, Italy, Iran

CIDRAP (3/1, Schnirring) reports, "The pace of new COVID-19 infections continued to surge in three international hot spots." South Korea tops the list, reporting 586 cases in the last day, "raising its total to 3,736 cases, 18 of them fatal." Additionally, there have been "big increases in both Italy and Iran, as at least five countries reported their first cases."

Hong Kong Appears To Have Contained Coronavirus

NPR (3/1, Beaubien) reports that Hong Kong has "managed to limit the spread" of the coronavirus, but at a high cost. NPR says that while neighboring Guangdong Province has seen more than 1,300 cases, more than any other province but Hubei, "Hong Kong has seen fewer than 100 cases since the outbreak began, and so

far its strategies to contain the coronavirus have prevented large-scale outbreaks that have happened in countries like Iran, Italy and South Korea." NPR says that while Hong Kong has managed to suppress the disease, "schools are closed. Many businesses are shuttered. All train, bus and ferry service to mainland China is suspended, and the border with China is essentially shut down."

HEALTH POLICY

FDA Expands Coronavirus Testing Across The US

The New York Times (2/29, Sheikh) reported the FDA announced that coronavirus testing "would be greatly expanded in the United States, giving laboratories and hospitals around the country the go-ahead to conduct tests that had until now been severely limited to those analyzed by the" CDC. The Times says that the FDA's "decision should improve the pace of detecting coronavirus infections and make it possible to more rapidly spot patterns of suspected or confirmed cases."

Reuters (2/29, Borter, Allen, Steenhuysen, Kalia) reported as a result of the decision, laboratories will immediately be able to "use tests they have developed and validated to achieve more rapid testing capacity for the coronavirus in the country."

CIDRAP (2/28, Soucheray) also covered the story.

Maine Residents To Vote On Whether To Limit Vaccine Exemptions

The Wall Street Journal (2/29, Kamp, Subscription Publication) reported Maine residents will vote on a ballot measure that could override a state law that eliminated nonmedical exemptions for vaccines.

FRIDAY'S LEAD STORIES

- **White House Names HIV/AIDS Expert As New Coronavirus Response Coordinator**
- **US Researchers Say Early Signs Of Coronavirus Infection Can Be Seen In The Lungs**
- **Trivalent Inactivated Influenza Vaccine May Offer Comparable Protection Against Influenza B As Quadrivalent Influenza Vaccine, Study Suggests**
- **HHS Secretary Says At Least 40 Labs Can Test For Coronavirus**
- **FDA Reaches Out To Medical Device Companies And Reports There Are No Shortages Due To Coronavirus At This Point**

From:	Levy, Susan (Susie)
To:	Schaeffer, Cyndi
Cc:	Burkland, Anne
Subject:	talking points for
Date:	Monday, March 2, 2020 12:34:19 PM
Attachments:	Talking points for City Cabinet update.docx COVID-19 Essential Talking Points 03.2.20.pdf image002.png

Attached are the key talking points from comms and a situational update and points on our community mitigations branch. I think sharing about prevention measures for their staff (hand washing, don't come if sick, etc) from the key points would be great to share.
Below is the press release in case they have specific questions. Let us know if you need anything else.
-Susie

Public Health
Seattle & King County

Washington State Department of Health

March 2, 2020 11:15 a.m.

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Public Health confirms four new COVID-19 cases, bringing overall total to 14

King County to purchase motel, repurpose other properties in fight against COVID-19

Summary:

Public Health – Seattle & King County announced on Monday four

additional confirmed cases of COVID-19 in King County residents, bringing the total of confirmed cases to fourteen. King County Executive Dow Constantine signed an Emergency Declaration, enabling county government to take extra steps to fight COVID-19. Among the first actions: purchasing a motel and setting up modular housing units on publicly-owned parking lots and other available land.

Story:

On Sunday, March 1, Executive Constantine signed a Proclamation of Emergency in response to COVID-19, enabling "extraordinary measures" to fight the outbreak, including waiving some procurement protocols, and authoring overtime for King County employees, among other powers.

Executive Constantine immediately ordered the purchase of an area motel to be used to isolate patients in recovery as well as those in active treatment. The acquisition is expected to be finalized in a matter of days and available to Public Health by the end of the week. Location details will be made available when the transaction is complete.

In addition, King County will place modular units on public properties in locations throughout King County.

"We have moved to a new stage in the fight to contain and mitigate this outbreak. King County is aligned and organized behind this common mission, with Public Health – Seattle & King County as our lead agency," said Executive Constantine. "We will direct all available resources to help cities, health-care facilities, businesses, and families continue life as normally as possible. But our best strategies depend on millions of residents actively following established disease prevention guidelines."

"As we learn more about this outbreak, it's now more important than ever that we look out for one another and stand strong as a community," King County Council Chair Claudia Balducci said. "In King County, we are fortunate to have a network of highly skilled public health professionals who are working round-the-clock to assess and respond to the situation, while making sure we are informed with up-to-date information."

COVID-19 Case updates

COVID-19 test results have come back from the Washington State Public Health Laboratory confirming four additional cases of COVID-19 in King County residents. With these four new results, the total number of cases in King County is 14. Today's results include 2 additional deaths, along with an individual who was previously reported as ill but who has now died. This brings the total number of deaths in King County from COVID-19 to five.

"We have the best people in the world right here in King County responding to this crisis," said Patty Hayes, RN, MN, Director of Public Health – Seattle & King County. "We will get through this by staying informed and united. There are things each one of us can do to take control and reduce the impact of this disease in our community."

The four new cases are in:

- A male in his 50s, hospitalized at Highline Hospital. No known exposures. He is in stable but critical condition. He had no underlying health conditions.
- A male in his 70s, a resident of LifeCare, hospitalized at EvergreenHealth in Kirkland. The man had underlying health conditions, and died 3/1/20
- A female in her 70s, a resident of LifeCare, hospitalized at EvergreenHealth in Kirkland. The woman had underlying health conditions, and died 3/1/20
- A female in her 80s, a resident of LifeCare, was hospitalized at EvergreenHealth. She is in critical condition.

- In addition, a woman in her 80s, who was already reported as in critical condition at Evergreen, has died. She died on 3/1/20

10 other cases, already reported earlier by Public Health, include:

- A female in her 80s, hospitalized at EvergreenHealth in Kirkland. This person has now died, and is reported as such above.
- A female in her 90s, hospitalized at EvergreenHealth in Kirkland. The woman has underlying health conditions, and is in critical condition
- A male in his 70s, hospitalized at EvergreenHealth in Kirkland. The man has underlying health conditions, and is in critical condition
- A male in his 70s was hospitalized at EvergreenHealth. He had underlying health conditions and died on 2/29/20.
- A man in his 60s, hospitalized at Valley Medical Center in Renton.
- A man in 60s, hospitalized at Virginia Mason Medical Center.
- A woman in her 50s, who had traveled to South Korea; recovering at home
- A woman in her 70s, who was a resident of LifeCare in Kirkland, hospitalized at EvergreenHealth
- A woman in her 40s, employed by LifeCare, who is hospitalized at Overlake Medical Center
- A man in his 50s, who was hospitalized and died at EvergreenHealth

Public Health is working hard to identify close contacts of these confirmed cases. These close contacts may include family members, co-workers, emergency responders and other contacts. A team of CDC officials is on-the-ground working with Public Health, along with the Washington State

Department of Health, our healthcare system partners and many others.

The public can help:

1) **Do not go to the emergency room unless essential.** Emergency rooms need to be able to serve those with the most critical needs. If you have symptoms like cough, fever, or other respiratory problems, contact your regular doctor first.

2) Stay home when sick.

3) Practice excellent personal hygiene habits, including handwashing, coughing into tissue or elbow, avoid touching eyes, nose, or mouth.

4) Stay away from people who are ill, especially if you are 60 and older or have underlying health conditions such as diabetes, heart disease, lung disease, or a weakened immune system.

4) Stay informed. Information is changing frequently. Check and subscribe to Public Health's website (www.kingcounty.gov/COVID) or blog (www.publichealthinsider.com).

Providing effective and innovative health and disease prevention services for more than two million residents and visitors of King County, Public Health – Seattle & King County works for safer and healthier communities for everyone, every day. More at www.kingcounty.gov/health

Keep up with the latest Public Health news in King County by subscribing to the department's blog, Public Health Insider.

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Talking points for City Cabinet update:

Status update:

- Current situation:
    - 14 confirmed cases, 5 deaths
    - 4 deaths associated with LifeCare facility, he 5th was also someone with underling health conditions
    - Seen at 5 area facilities and dialysis center
    - Facilities impacted: Evergreen, Overlake, Valley, Highline, Virginia Mason
- Community mitigation branch stood up as of this week, building on previous work and in coordination with DOH-
    - Matias is lead, groups focused on the following:
        - Non pharmaceutical intervention implementation group
        - Outreach on pandemic planning to specific groups including:
        - Houseless
        - Business
        - Children and youth
        - CBO and faith-based
        - Government agency

Public Health
Seattle & King County

Essential Talking Points: Novel Coronavirus (COVID-19)

Updated 02-29-20

Basic facts:

- Novel coronavirus (COVID-19) is a new virus strain that emerged in Dec 2019.
- Novel coronavirus spreads between people via droplets produced when an infected person coughs or sneezes.
- Symptoms of coronavirus may include: fever, coughing, and shortness of breath. These may appear in as few as 2 days or as long as 14 days after exposure to the virus.
- People are thought to be the most contagious when they are the sickest, though some spread is possible before people show symptoms.
- Most people have mild illness. The most serious cases have been among older adults and those with underlying chronic medical conditions. Children may have less severe disease.
- Novel coronavirus is not at all connected with race, ethnicity, or nationality.

International & U.S. Situation:

- Countries where novel coronavirus is widespread or ongoing include: China, Japan, Italy, South Korea, and Iran. For updates, visit the CDC Travel Alert page.
- With continuing spread of the novel coronavirus outbreak to more countries, it is increasingly likely that we will see a worldwide spread.
- Current travel alerts, include:

Widespread sustained (ongoing) transmission and restrictions on entry to the U.S. (*Level 3)*	CDC recommends that travelers avoid all nonessential travel to the following destinations. Entry of foreign nationals from these destinations has been suspended.	China Iran
Widespread sustained (ongoing) transmission (*Level 3)*	CDC recommends that travelers avoid all nonessential travel to the following destinations:	South Korea Italy
Sustained (ongoing) community transmission *(Level 2)*	CDC recommends that older adults or those who have chronic medical conditions consider postponing travel to the following destinations:	Japan
Limited community transmission *(Level 1)*	Travelers should practice usual precautions at the following destination:	Hong Kong

Local Situation:

- To date, there have been cases of novel coronavirus in King and Snohomish counties, including several deaths.
- Additional positive cases are expected.
- This is a quickly changing situation. Check Public Health's Novel Coronavirus webpage for frequent updates.

Prevention:

- There is no vaccine available to protect against novel coronavirus.
- You may be able to reduce the risk of spread of coronaviruses by taking the same steps as you would to prevent infection from the flu and the common cold: washing hands, avoid touching your face, avoiding contact with sick people, staying home, and covering your mouth.

Treatment:

- There are no medications specifically approved for novel coronavirus.
- Most people with mild novel coronavirus illness will recover on their own by drinking plenty of fluids, resting, and taking pain and fever medications. However, some cases develop pneumonia and require care or hospitalization.
- If you have symptoms like cough, fever, or other respiratory problems, contact your regular doctor first. **Do not go to the emergency room.** Emergency rooms need to be able to serve those with the most critical needs.
- If you have difficulty breathing, it doesn't mean you have novel coronavirus, but you should call 9-1-1.
- If you're over 60 and you have underlying conditions like diabetes, heart disease, and lung disease. Come up with a plan with your doctor to identify your health risks for coronavirus and how to manage symptoms. Contact your doctor right away if you do have symptoms.

Face masks:

- We do not currently recommend that people wear masks when they are in public.
- Scientists are not sure whether wearing a mask in public actually keeps healthy people from getting sick. It is most important for people who are sick to wear a mask in a healthcare setting (such as a waiting room) to avoid exposing other people when they cough or sneeze.
- People wear masks for a variety of acceptable reasons. We should not assume that someone wearing a mask is sick.

Preparing for an outbreak:

- We cannot predict when a pandemic outbreak might reach us nor how severe a novel coronavirus pandemic might be locally. But if it happens, and that seems increasing likely, it could cause large numbers of people to become ill in a short time.
- To prevent novel coronavirus from spreading, large gatherings and public events may be postponed or cancelled.
- School dismissals *may* happen if a serious pandemic occurs.
- For more information about outbreak preparedness, check out Public Health Insider.

What Public Health is doing:

- Public Health has activated over 100 employees and volunteers, working on disease containment and pandemic preparedness.
- Some of our activities include: conducting disease surveillance & investigation; working with community partners to address stigmatization and bias; disseminating messages and materials to the public, media, and community partners; and, conducting pandemic planning in anticipation of widespread transmission.

Visit www.kingcounty.gov/covid for updates or follow us on social media (@KCPubHealth).

Washington State Department of

Health