

UNITED STATES OF AMERICA

Commission on Combating Synthetic Opioid Trafficking

Final Report

The United States Senate

The United States House of Representatives

The Office of National Drug Control Policy

The Drug Enforcement Administration

The Department of Homeland Security

The Department of Defense

The Department of the Treasury

The Department of State

The Office of the Director of National Intelligence



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ABOUT THE COMMISSION

Congress, the executive branch of the U.S. government, and the American people are alarmed by the rising death toll attributable to drugs. Synthetic opioids have been a driver of overdose deaths in the United States since 2014; in April 2021, the number of total drug overdose deaths surpassed 100,000 for the preceding 12-month period. Mitigating the threats that synthetic opioids pose is a challenge, in part, because the solutions lie at the intersection of numerous national interests: homeland security, law enforcement, intelligence, the legal system, and other areas related to public health and the demand for drugs.

The Commission on Combating Synthetic Opioid Trafficking, established under Section 7221 of the National Defense Authorization Act for Fiscal Year 2020,¹ was charged with examining aspects of the synthetic opioid threat to the United States—specifically, with developing a consensus on a strategic approach to combating the illegal flow of synthetic opioids into the United States—with an overarching goal of reducing the number of overdose deaths from these drugs. The Commission was composed of representatives of seven executive branch departments and agencies, four sitting members of both the Senate and the House of Representatives, and four subject-matter experts from the private sector chosen for their deep experience and expertise on this topic. The Commission co-chairs were Senator Tom Cotton (R-AR) and Congressman David Trone (D-MD-06), who were elected as co-chairs by the fifteen Commission members at its first meeting and jointly agreed upon by the Majority and Minority leaders of the Senate, the Speaker of the House and the House Minority Leader, and the President. Given the ongoing coronavirus disease 2019 (COVID-19) pandemic, the Commission conducted its official business from March 2021 until February 2022 and held nine virtual, official Commission meetings.

To accomplish its goals in charting a strategic path forward, the Commission’s work encompassed two reports: an interim scoping report designating areas of focus for research and analysis and a final report on items involving the illegal manufacturing and trafficking of synthetic opioids, as well as the deficiencies in countering their production and distribution. This final report includes action items directed to appropriate executive branch agencies and congressional committees and leadership. Additionally, the Commission produced a body of technical appendixes of supporting data.

The Commission weighed the need to include a stronger understanding of the demand for opioids as a critical underlying factor that attracts illegal suppliers. To that end, the Commission included an examination of several areas related to the demand for opioids, and the report offers several actions to reduce demand and mitigate overdose.

Given the challenges and limited understanding of this new threat, the Commission embarked on a robust information-collection effort. The Commission was informed by nearly 40 unclassified and classified briefings and presentations from various federal agencies and subject-matter experts, as well as two site visits and meetings with personnel at the International Mail Facility at John F. Kennedy International Airport in New York City, U.S. Embassy personnel in Mexico City, Mexican government officials, and federal law enforcement personnel at the ground port of entry in El Paso, Texas. Additional analytical work incorporated a document and literature review; secondary analysis of data collected by federal law enforcement and other agencies; primary analysis of data scraped from online suppliers and other platforms that allow online vending and advertisement; and more than 60 interviews with subject-matter experts and stakeholders from across the U.S. government, international organizations, and others. Additional information and findings from those analyses can be found in the supporting appendixes.

COMMISSIONERS

Name	Title
Commission co-chairs	
Tom Cotton	U.S. Senator (R-Ark.), appointed by Senate Minority Leader Mitch McConnell
David J. Trone	U.S. Representative (D-Md.-06), appointed by Speaker Nancy Pelosi
Commissioners	
Ed Markey	U.S. Senator (D-Mass.), appointed by Senate Majority Leader Charles “Chuck” Schumer
Fred Upton	U.S. Representative (R-Mich.), appointed by House Minority Leader Kevin McCarthy
Vic Brown	Executive director, Appalachia High Intensity Drug Trafficking Area, appointed by Senator McConnell
Dewardric McNeal	Managing director and senior policy analyst, Longview Global, appointed by Senator Schumer
Karen Tandy	Former administrator, U.S. Drug Enforcement Administration, appointed by Congressman McCarthy
James A. “Sandy” Winnefeld, Jr.	Admiral (retired), U.S. Navy; former vice chairman, Joint Chiefs of Staff; founder, Stop the Addiction Fatality Epidemic (SAFE) Project; appointed by Speaker Pelosi
Amanda J. Dory	Performing the duties of Principal Deputy Under Secretary of Defense (Policy)
Ray Donovan	Chief of operations, U.S. Drug Enforcement Administration
Andrea Gacki	Director, Office of Foreign Assets Control, U.S. Department of the Treasury
Rahul Gupta	Director, Office of National Drug Control Policy, White House
Jon Stainbrook	National Intelligence Manager, Western Hemisphere and Transnational Crime, Office of the Director of National Intelligence
Rob Silvers	Under Secretary for Policy, U.S. Department of Homeland Security
James A. Walsh	Principal Deputy Assistant Secretary, Bureau of International Narcotics and Law Enforcement Affairs, U.S. Department of State
Staff	
Kemp Chester	Executive director, Office of National Drug Control Policy, White House
David Luckey	Principal investigator and senior international and defense researcher, RAND Corporation; professor, policy analysis, Frederick S. Pardee RAND Graduate School
Bryce Pardo	Principal investigator, RAND Corporation, and associate director, Drug Policy Research Center, RAND Corporation

ACKNOWLEDGMENTS

The Commission would like to express its gratitude to subject-matter experts and agency representatives who provided briefings to the Commission and participated in interviews informing the Commission's work. There are too many to name individually, but the Commission is grateful for all the valuable contributions received. The Commission is also indebted to staff from the U.S. Department of State and U.S. Customs and Border Protection for site visits. The Commission would also like to thank researchers and other staff members of the Homeland Security Operational Analysis Center, operated by the RAND Corporation, for their research and analytical support.

DISCLAIMER

The executive branch commissioners contributed superb assessments, insights, and recommendations to the report and actively participated in the Commission's deliberations, but, in accordance with executive branch legal guidance, abstained from the report's final approval.

CO-CHAIRS' LETTER

The United States is facing a cross-border illicit drug trade that contributes to the premature deaths of tens of thousands of Americans each year. Some 100,000 Americans overdosed and died—the majority due to a synthetic opioid, such as fentanyl or one of its analogues—over the most recent 12-month period for which we have data. These fatalities have increased steeply in the past few years, and early numbers suggest that deaths due to synthetic opioids will have hit the highest numbers in history in 2021. The overdose crisis in the United States claims more lives each year than firearms, suicide, homicide, or motor vehicle crashes. This is one of our most-pressing national security, law enforcement, and public health challenges, and we must do more as a nation and a government to protect our most precious resource—American lives. This Commission was created to address this national crisis and to develop a consensus on a strategic approach to the critical issue of synthetic opioid trafficking into our nation and our communities.

Synthetic opioids are remarkably efficient and cost-effective for drug producers and traffickers and often deadly for those who consume them. Almost all the synthetic opioids harming Americans are manufactured outside the United States and brought into our country through multiple routes. Compared with plant-based drugs, their potency allows traffickers to transport smaller amounts, which are easy to conceal and difficult to detect as they are brought across our borders. And given producers' propensity to manufacture synthetic opioids in pill form, these drugs are easy to consume, particularly by people who might be averse to smoking or injecting illicit substances.

Synthetic opioids have pervaded the nation's illicit drug supply and are found throughout the country, fueled by a strong domestic demand and increasing polysubstance use. They are used as stand-alone drugs; mixed into other drugs, such as heroin, cocaine, or methamphetamine; or purchased and consumed as counterfeit tablets made to look like opioid and nonopioid prescription medications. Cartels and transnational criminal organizations are the main sources of synthetic opioids and their precursors. These drugs are synthesized entirely from chemicals (sometimes unregulated chemicals) that are easily acquired from countries with large chemical and pharmaceutical sectors, such as China and India. Not only does the highly profitable synthetic drug trade kill tens of thousands of Americans each year but, in Mexico, where the vast majority of these drugs are produced or transited, drug trafficking also contributes to corruption, challenges state security, and fuels extreme violence.

This Commission, composed of senators and representatives from both parties, senior members of the executive branch, and nationally recognized subject-matter experts, all selected and approved by congressional leadership and the President, was charged with examining all aspects of this increasing threat to the safety and well-being of the American people. Addressing this challenge and its related harms required not only examining the foreign policy, homeland security, intelligence, legal, and regulatory dimensions of this problem but also developing a deeper understanding of the demand for these illicit substances that pulls them across our borders and into our communities.

The Commission has studied this problem in depth and discussed its many dimensions over the course of the past 12 months, identified those areas in which the federal government should place more effort and emphasis, and produced actionable recommendations that we believe will make tangible and sustainable progress against this monumental challenge.

As the co-chairs of this Commission, we would like to thank all its members for their dedication to this issue and their hard work in making this bipartisan commission a success. We would also like to thank all the dedicated public servants who lent us their valuable time and expertise in shaping our collective understanding of this problem and helping us see what is possible.

Combating synthetic opioid trafficking into the United States requires a whole-of-nation and globally coordinated approach, and we are committed to meeting this challenge head on with bold action focused on comprehensive and sustainable results. The American people should expect nothing less.



Tom Cotton
U.S. Senator
Co-chair



David J. Trone
Member of Congress
Co-chair

EXECUTIVE SUMMARY

Cumulatively, since 1999, drug overdoses have killed approximately 1 million Americans.¹ That number exceeds the number of U.S. service members who have died in battle in all wars fought by the United States.* Even worse is that the United States has never experienced the level of drug overdose fatalities seen right now. In just the 12 months between June 2020 and May 2021, more than 100,000 Americans died from drug overdose—more than twice the number of U.S. traffic fatalities or gun-violence deaths during that period. Some two-thirds of these deaths—about 170 fatalities each day, primarily among those ages 18 to 45—involved synthetic opioids. The primary driver of the opioid epidemic today is illicit fentanyl, a synthetic opioid that is up to 50 times more potent than heroin.²

Drug overdose deaths do more than cause tragic and unnecessary deaths. They also harm the national economy. In 2018, according to the White House Council of Economic Advisers, the cost of overdose fatalities was \$696 billion, despite being roughly two-thirds of annual overdose deaths today. It is therefore reasonable to estimate that drug overdoses are now costing the United States approximately \$1 trillion annually.

These alarming statistics are more than just numbers on a page; they represent devastating losses to families and communities, including personal losses to members of this very Commission. Whether measured in lives or in dollars, the United States' drug overdose epidemic should shock everyone. It is unacceptable.

Given these fatalities, the Commission finds the trafficking of synthetic drugs into the United States to be not just a public health emergency but a national emergency that threatens both the national security and economic well-being of the country. The President declared the illicit drug trade a national emergency in a December 15, 2021, executive order,[†] extending his predecessor's declaration that the opioid crisis is a public health emergency. In terms of loss of life and damage to the economy, illicit synthetic opioids have the effect of a slow-motion weapon of mass destruction in pill form.

The rise in illicit fentanyl and other synthetic opioid misuse and related deaths has its origins in the U.S. Food and Drug Administration's approval of the prescription opioid painkiller OxyContin in 1995. Since then, the number of fatal drug overdoses has steadily climbed. OxyContin and other prescription opioids were falsely marketed as an easy, nonaddictive fix for pain without an appreciation of a patient's other conditions, such as depression, trauma, and anxiety, which could drive the drugs' misuse. Prescription opioid dependence and addiction increased dramatically in the United States, and traffickers and other criminals exploited the opportunities presented.

People with substance-use disorder, unable to continue obtaining prescription drugs, often turned to heroin and then—sometimes unknowingly—to powerful synthetic opioids. In less than a decade, illegal U.S. drug markets that were once dominated by diverted prescription opioids and heroin became saturated with illegally manufactured synthetic opioids. Some of these synthetic variants are cheaper and easier to produce than heroin,

* U.S. military service member deaths due to battle during wartime between 1775 and 1991 number just over 651,000 (U.S. Department of Veterans Affairs, "America's Wars," fact sheet, undated).

† "I hereby declare a national emergency to deal with that threat" (Joseph R. Biden, Jr., "Executive Order on Imposing Sanctions on Foreign Persons Involved in the Global Illicit Drug Trade," Washington, D.C.: White House, Executive Order 14059, December 15, 2021).

making them attractive alternatives to criminals who lace them into heroin and other illicit drugs or press them into often-deadly counterfeit pills.

Mexico is the principal source of this illicit fentanyl and its analogues today.* In Mexico, cartels manufacture these poisons in clandestine laboratories with ingredients—precursor chemicals—sourced largely from the People’s Republic of China (PRC). Because illicit fentanyl is so powerful and such a small amount goes such a long way, traffickers conceal hard-to-detect quantities in packages, in vehicles, and on persons and smuggle the drug across the U.S.–Mexico border. It is difficult to interdict given that just a small physical amount of this potent drug is enough to satisfy U.S. demand, making it highly profitable for traffickers and dealers.

Indeed, the trafficking of synthetic opioids offers a more profitable alternative to heroin for Mexican drug traffickers. The Mexican government, in part out of self-preservation and in part because the trafficking problem transcends current law enforcement capacity, recently adopted a “hugs, not bullets” approach to managing the transnational criminal groups. However, such approaches have not been able to address trafficking issues, and further efforts will be needed.

This devastating story is not leading to a happy ending. The difficult truth is that there is no easy solution to the synthetic opioid problem. The supply of illicit fentanyl cannot be permanently stopped through enforcement alone—only temporarily disrupted before another cartel, trafficking method, or analogue steps in to fill the market that addiction creates. U.S. and Mexican efforts can disrupt the flow of synthetic opioids across U.S. borders, but real progress can come only by pairing illicit synthetic opioid supply disruption with decreasing the domestic U.S. demand for these drugs.

Congress established the Commission on Combating Synthetic Opioid Trafficking to examine the causes of the influx of synthetic opioids, to understand how to reduce the trafficking of these drugs, and to identify solutions to mitigate a worsening overdose death crisis. The magnitude of this fast-moving problem and the unique challenges it presents will require a new and different national response across all levels of government and policy domains. Without a major shift in U.S. policy, more American sons and daughters, brothers and sisters, neighbors and friends will perish.

WHAT HAS CHANGED?

The opioid crisis in the United States first gained public attention in the 2000s. Decades of an oversupply of prescription opioid pain medications beginning in the mid-1990s seeded its origins. Millions of Americans were exposed to these drugs, which contributed to rising numbers of overdoses in the past 20 years. At the same time, heroin had long been the dominant opioid in parts of the United States and, for decades, drove overdose fatalities in some communities.

Starting around 2014, potent synthetic opioids—mostly, illegally manufactured fentanyl—began their sharp rise in U.S. drug markets. Although they increasingly displaced prescription opioids and heroin in some places, these new drugs rapidly worsened an already-alarming public health problem. Drug seizure data show that, in some parts of the country, fentanyl has largely replaced heroin. Not since the early 20th century, when heroin replaced morphine, has the United States seen one major opioid found in some illegal markets largely replaced by another.

* Analogues are compounds that are substantially similar, either chemically or pharmacologically, to another controlled substance. This report also uses the term *fentanyl-related substances*, which are substances that are structurally related to fentanyl based on chemical composition. See Appendix A for full statutory definitions of both terms.

Since 2014, when illegal synthetic opioids began their rapid expansion in the United States, their source has evolved. From about 2014 until 2019, 70 to 80 percent of the pure fentanyl and fentanyl analogues that federal authorities seized came from foreign suppliers in the PRC. They relied on the internet to sell their drugs and on the international mail and parcel delivery systems to ship their products to the United States.

Since then, the dominant source of illegally sourced fentanyl has been Mexico. The drug is manufactured in illegal laboratories there using precursors from Asia—mainly the PRC—and is trafficked principally by land into the United States. Fentanyl coming from Mexico is often of very low purity—generally, in powder form around or slightly above 10 percent—but now accounts for almost all the fentanyl that law enforcement has seized since late 2019. Trafficking in synthetic opioids has increased in part because of its low cost: It is cheaper to illegally manufacture fentanyl or a fentanyl analogue than it is to grow poppies, extract the raw materials from them, and produce heroin.

The shift from prescription opioids to heroin and then to synthetic opioids has proved deadly to people who use drugs. Because fentanyl is much more potent than heroin, imprecise dosing and a lack of quality controls increase the risk of fatal overdose. Synthetic opioids, such as fentanyl, are generally found in baggies or counterfeit tablets and are often represented as heroin or prescription medications; less frequently—but increasingly—they are also mixed with stimulants or sedatives. The bottom line is that fentanyl is undeniably extremely dangerous to people who use drugs acquired from illegal markets that operate with little transparency or care for consumer safety.

The emergence of counterfeit tablets that contain minute quantities of synthetic opioids is particularly troubling. Drug traffickers in Mexico produce most of these tablets, but illegal pill pressing does occur to a lesser extent in the United States and Canada. Counterfeit tablets sometimes contain, and conceal, dangerous and inconsistent doses of fentanyl. These fakes are potentially fatal, especially for unsuspecting buyers or others who might casually consume diverted prescription medications. Counterfeit tablets can also be attractive to people who do not inject or snort powders. Americans are accustomed to and prefer taking prescription pills, making fake tablets an attractive opportunity for illegal suppliers to expand their markets.

According to the latest national household survey, which likely underestimates overall use, some 3 million Americans are living with opioid-use disorder (OUD) today, and millions more are in recovery.³ This means that millions are at risk of fatal overdose should they consume a counterfeit prescription tablet or heroin containing an unknown quantity of fentanyl. Existing treatment regimens and public health programs are not sufficient to stem the rising tide of fatalities.

One fact is clear: The availability of illegally manufactured synthetic opioids supplied to meet the country's appetite for narcotics is a national crisis. These drugs are destroying lives and harming communities at historic levels. Absent clear and definitive intervention, the United States will continue to see the number of overdoses rise as markets for illicit drugs evolve, respond, and produce an even wider variety of synthetic opioids, and transnational criminal organizations (TCOs) diversify the presence of synthetic opioids in nonopioid drugs and into pills to expand the market beyond traditional opioid users.

NEW CHALLENGES

The emergence of illegally manufactured synthetic opioids has complicated existing supply- and demand-reduction efforts. Even as demand persists for heroin and nonprescription opioids, fentanyl and other synthetic opioids have made their way into the illegal drug supply, confounding traditional efforts that reduce quantity and raise prices. It is essential that policymakers understand the challenges at hand so they can develop appropriate solutions.

- **Illegal drug manufacturing has become easier to conceal by moving from the field to the laboratory.** The production of synthetic opioids does not begin by harvesting poppies. Materials needed for manufacturing

synthetic opioids can be purchased from online platforms or directly from licensed chemical producers overseas. A few experienced people manufacture the drugs in small laboratories that are harder to detect than a poppy field. The supply chain is simplified and more condensed, making it easier for Mexican traffickers to retain their control and profits.

- **Serious geopolitical issues significantly impede actions to disrupt supply.** The vast majority of illegally manufactured fentanyl now comes into the United States from Mexico. In Mexico, two cartels dominate the drug trade. Their financial prowess and extensive use of weapons, bribery, threats, and murders of politicians and members of the public—very few of which are ever solved—significantly impedes the state’s capacity to control them. Mexico’s President Andrés Manuel López Obrador, who began his presidency publicly committed to a policy of “hugs, not bullets” for the cartels, despite the continued rise of violence, must do more in the months and years ahead to more directly address the threat that cartels pose to the health and safety of people in both Mexico and the United States. The flow of precursors from the PRC to Mexico remains almost unabated. The expansion of the PRC’s chemical and pharmaceutical sectors has outpaced the government’s efforts to regulate them, creating opportunities for unscrupulous vendors to export chemicals needed in their illegal manufacture. Any actions to reduce the exportation of precursors from the PRC will likely lead to other countries increasing their exports to meet demand. The potential for massive profits ensures that cartels will continue to find sources for precursors, and the United States must think and act strategically.
- **Synthetic opioids are highly potent and easy to make, and small amounts can be transported for large profits.** The manufacture of many synthetic opioids relies on an array of common chemicals that can be easily substituted and chemically manipulated, circumventing control efforts aimed at exporters and importers. Many synthetic opioids are far more potent than heroin, with fentanyl being as much as 50 times stronger and other fentanyl analogues at varying levels of potency. Higher potency allows cartels to reduce volume and increase profits. The Commission estimated that only 3 to 5 metric tons of pure fentanyl is needed to satisfy the entire annual U.S. consumption of illegally supplied opioids—a fraction of the estimated 47 metric tons of heroin and 145 metric tons of cocaine that were consumed in the United States in 2016.
- **Social media and encryption platforms, as well as established logistics systems, make distribution difficult to disrupt.** Many vendors use online platforms, including business-to-business and social media websites, to connect with buyers, including Mexican cartels, and then communicate through other encrypted systems that remain beyond the reach of law enforcement. Existing global logistics and trade networks—postal, courier, and commercial cargo systems—also play an important role in the movement of precursors and sometimes finished products. Smuggling across the southwestern U.S. border is the principal method of transport for illegally imported fentanyl manufactured in Mexico. However, cartels’ and other criminals’ use of the U.S. domestic mail system to move fentanyl within the United States has increased. Regardless of distribution channel, smaller and more-compact shipments are easier to conceal, and novel chemicals can and often do escape existing detection tools and capacities. Law enforcement must rely on expensive, advanced technologies that require more personnel to screen or on conventional screenings that rely on agent observations and intuitions.
- **The pull of demand continues to drive the supply of synthetic opioids.** Global drug traffickers continue to evolve to meet consumer preferences—the advent of synthetic opioids in pill form leverages Americans’ familiarity with taking pills and does away with the social stigma of injection, snorting, and smoking. Of deepest concern is that most consumers are not—at least initially—seeking fentanyl specifically. Rather, it is being laced into heroin or manufactured as counterfeit tablets, including such brand names as OxyContin, Percocet, Vicodin, Adderall, and Xanax, driving overdose deaths. Demand-reduction efforts that target opioid-use disorder and the inappropriate use of prescription pills must be improved to reduce the overall demand and, ultimately, save lives.

- **External factors, including the coronavirus disease 2019 (COVID-19) pandemic, have driven increases in substance use.** The COVID-19 pandemic is now entering its fourth calendar year.* This crisis has affected every aspect of Americans' lives, from job security and economic well-being to the new dangers of once-ordinary activities, such as visiting loved ones without fear of infection. With the crisis have come increased depression, anxiety, experiences of trauma, suicidal ideation, and increased substance use.⁴ At the height of the pandemic, more than one in ten Americans started or increased their substance use, creating even greater demand.
- **Overall, synthetic opioids offer economic and tactical advantages that allow criminals to vastly outpace enforcement efforts.** These production and distribution advantages reduce operational costs and risks. Fentanyl is much cheaper to supply, attracting criminals who are eager to cut costs and increase profits. Fentanyl is far more profitable for cartels than heroin is. Similarly, one person with an internet connection and mailing address can import a novel synthetic opioid made overseas and supply local markets without directly engaging with dangerous and potentially violent actors. With lower risks of detection, ease of availability, lower costs, and many consumers with no awareness that they are purchasing something containing fentanyl, reducing the supply is a tall mountain to climb.

The Commission used the fundamental concepts of supply and demand to evaluate the most-effective means of achieving its statutory mission of combating the flow of synthetic opioids into the United States and, more broadly and importantly, reduce the number of overdose deaths. Through its work, the Commission came to recognize the impossibility of reducing the availability of illegal synthetic opioids through efforts focused on supply alone. Among the factors considered were the Mexican drug cartels' financial strength, weaponry, the ability to influence political entities, and use of violence against those who stand in their way; the ease of manufacturing and transporting synthetic opioids; the ability to evade law enforcement; and high profitability. These factors make solving the problem with an exclusively supply side-focused effort an insurmountable task.

Supply and demand are two sides of the same coin. Therefore, to reduce illegal supply, the United States must also reduce demand. The executive branch and Congress must take the following steps to save lives: Increase public awareness of the pervasiveness and deadliness of synthetic opioids; expand treatment for OUD, including with medication-assisted treatment; and bolster appropriate harm-reduction interventions to prevent fatalities and give people with substance-use disorder more opportunities to enter high-quality treatment. Failure to intervene in ways that appropriately reduce demand and decrease the risk of fatal overdose will almost certainly result in the deaths of hundreds of thousands more Americans and will imperil the country's economic and social well-being.

NEW CHALLENGES CALL FOR A NEW RESPONSE

The increasing numbers of drug overdoses from the use of synthetic opioids show no signs of abating. The problem that the United States faces is more complex than those it has in the past, reaches well beyond U.S. borders, and is evolving quickly. U.S. drug policy must recognize the urgency of this situation and respond to the new challenges it presents. Toward this end, the Commission recommends actions across five pillars:

1. **The United States must develop a more unified, central body to coordinate planning, implementation, and evaluation of all U.S. drug policies.** An effective national response must start with enhanced policy coordination and implementation from an executive body. The Office of National Drug Control Policy in the Executive Office of the President is well positioned to lead these efforts, and its director should be elevated to a Cabinet-level position to support its role as the central authority for policymaking and

* On December 12, 2019, a cluster of patients in Wuhan, China, began to experience shortness of breath and fever (Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, "COVID-19 Timeline," webpage, last reviewed January 5, 2022).

interagency coordination on all drug policy matters. The U.S. drug policy apparatus must be appropriately positioned and resourced to analyze trends, respond to evolving threats, and shape the future course of action. Collaborative environments, such as special operations divisions or a fusion center, where officials from different agencies can work together in the same physical location, can help coordinate and align the federal government's actions.

2. **The United States must disrupt drug supply through targeted oversight and enforcement.** Targeted supply reduction and the enforcement of current laws and regulations are essential to disrupting the availability of chemicals needed to manufacture synthetic opioids. Improving the oversight of large chemical and pharmaceutical sectors and enhancing investigations of vendors or importers in key foreign countries can help disrupt the flow. Actions on the domestic front must focus on improving how drug supply investigations are conducted and on strengthening law enforcement intelligence sharing and training.
3. **The United States must make public health demand-reduction approaches central in the fight against opioid trafficking to reduce the number of potential buyers.** Reducing demand for illegally manufactured synthetic opioids is paramount to stemming the flow of these drugs. Better access to and continued scientific understanding of treatments for OUD, including through medication, are primary needs. Innovative prevention messaging must inform entire communities—including those with OUD, those who casually use drugs, and the public at large—of the pervasiveness of synthetic opioids used as a lacing agent and resources available to those struggling with addiction. Public health interventions aimed at reversing or preventing overdose play an important role. Increased funding for brain research is needed to understand addiction and the effect that synthetic drug use has on development and cognition. Finally, the full continuum of care must be reviewed to establish standards and best practices because consumers often have difficulty distinguishing between high- and low-quality treatment programs.
4. **The United States must collaborate with other countries involved in the production and distribution of synthetic opioids and precursors.** The United States must do everything it can to reduce the supply of and demand for illegal synthetic opioids, but it cannot succeed alone. The nature of this problem requires multilateral and bilateral approaches to strengthen partnerships and capacity overseas, where the vast majority of these drugs are produced. These approaches include partnering with the PRC and India to improve regulatory oversight and target producers involved in the manufacture of synthetic opioids or the trafficking of precursor chemicals. Any strategy to address access to precursors must address the fact that these chemicals are widely available internationally; as they become more difficult to import from one country, another country will likely take its place, creating an interactive cycle of action and reaction. A broader anticorruption or antiviolence strategy could reduce TCOs' influence, but the government of Mexico's existing policy toward the cartels—and mid- and high-level leaders within TCOs who often operate with impunity—must adapt to address the magnitude of the security challenge that they present. Absent definitive action, the TCOs will continue to thrive and expand. More will need to be done to improve the international system's ability to detect and respond to changes in new drug production that currently fall outside of international controls. In executing on this recommendation, the United States must recognize the challenges created by the significant levels of corruption that exist within the government of Mexico.
5. **The United States must improve surveillance and data analysis to allow for more-timely and -effective interventions.** Enhanced surveillance and data analysis, particularly real-time data on nonfatal overdoses, are needed to improve implementation of response actions across the board. Continued research and monitoring of drug use and supply trends will be an essential foundation on which to tailor future action. Surveillance systems must be updated and expanded to detect and report rapid changes and the emergence of new trends in U.S. drug markets, including the adoption of novel early-warning mechanisms.

To accomplish the goals set out in these pillars, the Commission developed 21 key actions (see Figure S.1) supported by 78 enabling actions that address the most-salient and -actionable challenges that the United States faces today in combating the flow and use of illegally manufactured synthetic opioids. The United States must tackle these multiple areas of response simultaneously, with different priorities for near-, medium-, and long-term actions targeting mitigating critical vulnerabilities and filling gaps in current tactics. Those areas of response are

discussed in detail in this report. Without taking these actions, the public response will be unable to stop the rising tide of synthetic opioid overdose deaths.

Figure S.1

Five Pillars of a U.S. Response to Illegally Manufactured Synthetic Opioids

Pillar 1: Policy coordination and implementation

- 1.1. Increase coordination of U.S. authorities, fill critical appointments, and ensure proper levels of staffing.
- 1.2. Assess and update U.S. legislative and regulatory drug control frameworks.

Pillar 2: Supply reduction

- 2.1. Enhance interdiction capabilities, especially in the mail and express consignment systems that facilitate trafficking of synthetic opioids.
- 2.2. Bolster capabilities and capacity of domestic law enforcement efforts to investigate illegal distribution of synthetic opioids.
- 2.3. Work with private-sector stakeholders to implement systems to prevent drug traffickers from acquiring chemicals used illegally to manufacture synthetic opioids.
- 2.4. Target distribution of synthetic opioids and related chemicals advertised online.
- 2.5. With the help of private entities, reduce online advertising and sales.
- 2.6. Intensify efforts to counter TCOs' money laundering.

Pillar 3: Demand reduction and public health

- 3.1. Support evidence-informed efforts to reduce substance misuse and progression to substance-use disorder.
- 3.2. Expand access to evidence-based treatment.
- 3.3. Enhance evidence-informed harm-reduction efforts.
- 3.4. Take efforts to promote recovery from substance-use disorder.

Pillar 4: International cooperation

- 4.1. Strengthen coordination with multilateral institutions to promote enhanced control and reporting of drugs and other chemicals.
- 4.2. Examine how the international drug control regime can be improved, expanded on, or otherwise supplemented.
- 4.3. Enhance efforts to ensure a collaborative U.S.–Mexico security and drug partnership by enhancing Mexican counternarcotic capabilities, strengthening institutions against corruption, and focusing greater resources on the illegal firearm trade.
- 4.4. Establish a U.S. policy framework to engage with the PRC to improve oversight and enforcement of its chemical and pharmaceutical industries.
- 4.5. Press the PRC to adopt clear rules to improve regulatory oversight and enforcement of industries, control over movements of chemicals and related equipment, and other restrictions on exports.
- 4.6. Expand engagement with other countries to facilitate information-sharing and promotion of best practices to reduce supply and demand of illegally manufactured synthetic opioids, especially in countries most likely to experience such problems in the near future.

Pillar 5: Research and monitoring

- 5.1. Direct federal efforts to improve understanding of the illegal supply of synthetic opioids.
- 5.2. Analyze emergent trends in drug markets and related behaviors through a systematic and standardized approach.
- 5.3. Use novel, high-frequency, and real-time systems to enhance market surveillance.

In working toward an end goal of reducing the unprecedented number of drug overdose deaths in the United States, the Commission recognizes the need to act across several policy domains, both domestically and internationally. A unidimensional focus that ignores international partners and institutions would limit the success of U.S. actions. Given the gravity of this crisis, new approaches, additional resources, and a reconsideration of ongoing interventions are essential. If such steps are not taken, the economic costs will continue to rise, and hundreds of thousands more Americans will perish from preventable drug overdoses.

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THE GENESIS OF THE SYNTHETIC OPIOID CRISIS

In the past two decades, the opioid overdose crisis has left more than 550,000 Americans dead from overdose. From 2014 through 2020, nearly 200,000 of those deaths involved synthetic opioids—most often, illegally manufactured fentanyl.* Many Americans who have succumbed to fatal opioid overdoses were in the prime of their lives. Overdoses involving illegally manufactured fentanyl are now the leading cause of death for those ages 18 to 45.¹

As tragic as the loss of each individual life is, the costs to society also reach widely, with long-lasting effects on families, friends, and communities. By several accounts, the economic costs from fatal drug overdose amounted to roughly \$700 billion annually in 2016 and 2017. This staggering amount derives predominantly from lost productivity (the result of early death) and from increases in health care and criminal justice costs.²

In short, the supply of illegally manufactured synthetic opioids by criminals who purchase drugs and related chemicals from other countries, coupled with uncontrolled demand for opioids in the United States, poses a direct and escalating threat to public health, public safety, and national security.

This problem first gained general attention in the 2000s but has worsened rapidly as a public health issue since around 2014, when illegally manufactured fentanyl and other synthetic opioids became more available in U.S. drug markets. The origins of this crisis were seeded not only by existing opiate use but also by decades of oversupply of prescription opioid pain medications starting in the mid-1990s.³ Although access to pain medications contributed to rising overdoses in the early 21st century, heroin had long been the dominant opioid in some parts of the United States.⁴

Patients receiving opioids under appropriate clinician supervision to treat acute pain are at low risk for ill effects, including overdose. They generally receive low doses for short periods or only for anesthesia while in health care facilities.⁵ The bigger risk comes when opioids are prescribed to treat chronic, non-cancer-related pain for a long period. Millions of Americans first encounter opioids as prescribed analgesics for chronic pain or minor postoperative pain. But these prescriptions are sometimes inappropriately dosed or managed. Between 8 and 12 percent of those treated with prescription opioids for chronic pain develop opioid-use disorder (OUD).⁶ Manufacturers and distributors of opioid medications increased the availability and promoted the use of these substances by overselling their effectiveness without properly disclosing or while dismissing their risks.⁷

However, whether for acute or chronic pain, some patients (and those with access to their medications) inappropriately consume those opioid medications or illegally divert them to street markets, where anyone can buy and use them, no prescription required.⁸ Decades of increasing supply of opioid analgesics have thus exposed family members, partners, friends, and neighbors to these drugs and increased the risk of OUD.

As overdose deaths and addiction treatment admissions rose during the first decade of the 21st century, state and federal governments implemented policies to reduce supply of or access to prescription opioids. For example, to

* For an illustration of the terms that the Commission uses for the various categories of substances, see Appendix A.

comply with federal requirements, Purdue Pharma reformulated OxyContin (oxycodone hydrochloride) tablets in 2010 to prevent crushing and injection. Other federal guidelines have focused on reducing supply of prescription medications for acute or chronic pain.⁹ Although these well-intended policies have sought to reduce misuse and diversion of prescription opioids, constraints on supply have failed to reduce the number of overdoses. Reducing the unnecessary prescribing of medications that result in OUD is a necessary part of a holistic framework for reducing demand for drugs by limiting the exposure of medications.

However, absent any commensurate increase in OUD treatment options and utilization, restrictions on prescription opioids have instead coincided with an increase in heroin use and overdose.¹⁰ Some people with OUD switched to heroin when obtaining prescription opioids became more difficult.¹¹ Others switched to heroin because it costs less than diverted prescription opioids.* But the increase in the number of overdose deaths only accelerated with the arrival of illegally manufactured synthetic opioids, such as fentanyl, and the speed with which they replaced heroin in drug markets. These drugs are orders of magnitude more potent than heroin and, in turn, require only the tiniest amounts to cause an overdose.

Illegally available fentanyl appeared in some heroin markets as early as 1979, before shortly disappearing. But before 2014, it was only a modest problem: Diverting or tampering with supplies belonging to patients prescribed topical analgesic fentanyl patches or anesthesiologists with fentanyl access could not create anything on the scale of illegally manufactured and distributed opioids today.¹²

The number of overdose deaths in the United States increased from 44,000 in 2013 to 47,000 in 2014. Deaths continued increasing each year until 2018, when they declined for the first time in decades, at just over 67,000. The decline that year was short-lived; U.S. overdose deaths again increased in 2019 and surged as the coronavirus disease 2019 (COVID-19) pandemic set in. At the time of this writing in January 2022, recorded annual drug overdose deaths in the United States had surpassed 100,000 between May 2020 and April 2021.¹³ Approximately two-thirds of recent drug overdose deaths involved illegally manufactured synthetic opioids, primarily fentanyl.¹⁴ Shockingly, the number of overdose deaths in the United States has risen exponentially since 1979 and does not appear to be dropping any time soon.¹⁵

Overdose deaths are nothing new. But what has fueled this skyrocketing increase in these tragic losses? In the mid-2010s, criminal suppliers of illegally manufactured synthetic opioids began catering to people distributing opioids in illegal markets. Illegally manufactured synthetic opioids became a cheaper raw material for those who had previously sold heroin. Distribution networks that had primarily supplied heroin began shipping product that contained a mixture of heroin and cheaper, illegally manufactured fentanyl and other synthetic opioids. Eventually, some of those bags contained synthetic opioids but no heroin and were sold to many people who had previously been using heroin or illicitly acquired oxycodone because they lacked support and appropriate treatment for OUD or other, related comorbidities.¹⁶

These synthetic opioid alternatives became available for purchase online from new producers, mostly in the People's Republic of China (PRC), who had not previously been involved in drug trafficking in the United States. Mexican transnational criminal organizations (TCOs) also increasingly began supplying fentanyl instead of

* Oxycodone sold on the street generally trades for a \$1 per milligram, whereas the equivalent amount of heroin sells for about \$0.90, per analysis in Gregory Midgette, Steven Davenport, Jonathan P. Caulkins, and Beau Kilmer, *What America's Users Spend on Illegal Drugs, 2006–2016*, Santa Monica, Calif.: RAND Corporation, RR-3140-ONDCP, 2019. After factoring in its greater potency, heroin comes to about one-third the cost of oxycodone per morphine-milligram equivalent. See Jacob A. Lebin, David L. Murphy, Stevan Geoffrey Severtson, Gabrielle E. Bau, Nabarun Dasgupta, and Richard C. Dart, "Scoring the Best Deal: Quantity Discounts and Street Price Variation of Diverted Oxycodone and Oxymorphone," *Pharmacoepidemiology and Drug Safety*, Vol. 28, No. 1, January 2019.

traditional plant-based opiates, such as heroin, albeit often producing it using precursor chemicals supplied by sellers in the PRC.*

Illegal suppliers at various levels of the distribution chain started mixing fentanyl into drugs and drug forms other than heroin, sometimes pressing illegally manufactured fentanyl powder into counterfeit tablets made to look like genuine prescription opioid and nonopioid medications. An unsuspecting buyer could mistake a fake for a regulated medication and increase the risk of overdose—particularly because they likely have lower tolerance than long-term opioid consumers have. The same amount of an opioid that might be nonfatal for someone accustomed to taking opioids could be fatal to someone who has not built up a tolerance for such drugs.† Nonetheless, dosing in minute quantities—perhaps as little as a few milligrams—means much narrower margins for error.‡ Someone mixing in a clandestine lab probably cannot precisely ensure dosing consistency, so a counterfeit tablet containing even just a couple of extra milligrams of fentanyl could result in a fatal overdose.

The rapid dominance of synthetic opioids—notably, fentanyl—in an increasing number of long-standing heroin markets suggests that cheaper and more-potent synthetic opioids are displacing traditionally misused opioids. Because fentanyl and other synthetic opioids are easy to produce, conceal, and distribute, they represent a technological leap for suppliers and could change consumers’ dosing habits.¹⁷

A PARADIGM SHIFT

The United States has never experienced such a rapid and unprecedented shift in illegal drug markets, especially a shift that is causing so much death. The changing landscape is complicated and complex. Illegally manufactured synthetic opioids are attractive to illegal drug suppliers because they are cheaper and easier to manufacture than other products and because their potency allows suppliers to replace larger-volume heroin with smaller-volume fentanyl. Further, the ease with which someone can press a few milligrams of fentanyl into counterfeit tablets made to look like prescription medications reduces barriers to entry and expansion in the market. Therefore, a transition from heroin or diverted prescription opioids to more-potent synthetic opioids is here to stay. Experiences in such countries as Estonia have shown that fentanyl markets can endure for years.§ Thus, illegal fentanyl markets could threaten some parts of the United States for decades to come, and the nation must improve its posture and response to these substances. Without significant changes, these deadly trends will likely persist.

* Precursors are the starting chemical materials used in the production of drugs.

† Fentanyl has no known median lethal dose in humans. The estimated lethal dose in someone without tolerance is believed to be approximately 2 mg, but someone with continued exposure to opioids is likely to withstand larger amounts without risk of death. See European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), “Fentanyl Drug Profile,” webpage, undated b.

‡ A few grains of table salt can weigh as much as 1 mg.

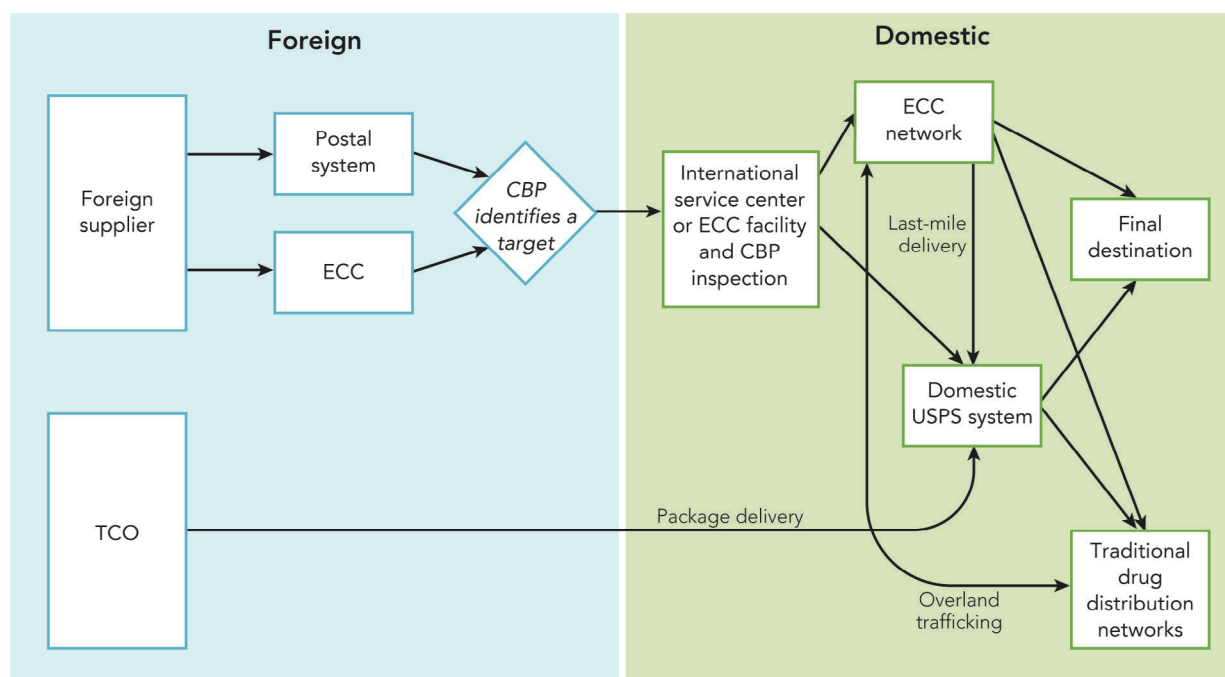
§ In 2001, illegally manufactured fentanyl entered heroin markets in Estonia, converting them to fentanyl markets. For a more detailed narrative, see Pardo, Taylor, et al., 2019.

THE KEY PLAYERS IN THE ILLEGAL SUPPLY OF SYNTHETIC OPIOIDS

Illegally manufactured synthetic opioids arrive in the United States largely from TCOs in Mexico. Until 2019, most illegally manufactured synthetic opioids came from producers in the PRC. Figure 2.1 elaborates on both these streams. (Unless otherwise noted, figures and tables in this report were generated by the Commission.) Suppliers in other countries (mostly the PRC) shipped online orders of finished synthetic opioids or fentanyl precursors to end buyers in the United States via postal or express consignment, which largely escaped detection in the huge volumes of inbound packages. In 2019, the PRC expanded legal controls over fentanyl-related substances, and supply pivoted to Mexico.* Today, Mexican TCOs are the primary suppliers of fentanyl, using chemical inputs from China and India to illegally manufacture fentanyl and traffic it into the United States, primarily across the southwestern border but also by passenger boat, cargo ship, train, commercial plane, drone, and mail carrier.

Figure 2.1

Supply Streams for Illegally Imported Synthetic Opioids to the United States



NOTE: ECC = express consignment carrier. CBP = U.S. Customs and Border Protection. USPS = U.S. Postal Service.

* Fentanyl-related substances are substances that are structurally related to fentanyl based on chemical composition. This report also uses the term *analogues*, which are compounds that are substantially similar, either chemically or pharmacologically, to another controlled substance. See Appendix A for full statutory definitions of both terms.

Globalization, increased trade and travel, the internet, and advances in encrypted communication have all facilitated the illegal trade in synthetic opioids. Insufficient enforcement of chemical controls and oversight of large pharmaceutical industries in Asia contribute to regulatory environments that are conducive to illegal groups, unsanctioned production operations, and companies and individuals willing to flout the rules. The use of internet-based communications and social media also play a critical role linking buyers in Mexico with chemical manufacturers in Asia. Encrypted darknet marketplaces or unmonitored social media forums and business-to-business (B2B) platforms make it easier for distributors to trade in illegally manufactured synthetic opioids or uncontrolled precursors with minimal risks.*

The synthetic opioid problem is here to stay. Suppliers, especially Mexican TCOs and domestic distributors, have strong reasons to continue to favor synthetic opioids over heroin because of their economic advantages and other factors, such as the tendency of people addicted to these drugs to become increasingly tolerant and thus crave higher doses. Mexican TCOs also increasingly engage in clandestine synthesis and manufacture of counterfeit tablets, smuggling them into the United States and seeking to attract new customers by fooling buyers into thinking that such tablets are diverted medications.

Although other countries with large chemical or pharmaceutical sectors and minimal oversight could become sources in the future, Mexican TCOs are presently the major source of illegally manufactured synthetic opioids, while suppliers in the PRC provide most of the necessary precursor chemicals that criminals use. Given their prominent roles, the PRC and Mexico were the focus of the Commission's investigation.

THE PEOPLE'S REPUBLIC OF CHINA

In recent years, the central government of the PRC has taken steps to curb the illegal or unregulated production of fentanyl and related substances. The extension of controls over all fentanyl-related substances in May 2019 reshaped the nature of the PRC's involvement in the synthetic opioid drug trade (see Box 2.1). Instead of shipping finished product to the United States, chemical and pharmaceutical businesses (or individuals within them) in the PRC either knowingly or unknowingly started sending other, controlled and uncontrolled chemical precursors from the PRC to Mexican TCOs that illegally synthesize fentanyl for U.S. markets.¹

Today, chemical and pharmaceutical businesses in the PRC appear to be, directly or indirectly, the primary sources of chemical precursors used to synthesize fentanyl and other novel synthetic opioids.† The overall sizes of these industries, limited oversight efforts, and political incentives contribute to an atmosphere of impunity among firms and individuals associated with those industries.

U.S. government analysts, and perhaps the PRC government, are unclear about how many firms are in the pharmaceutical and chemical sectors. One estimate using data collected by EMIS, a market research company, put the number of chemical firms at 24,000, although it was unclear whether that number includes the chemical transport sector.² Similarly, estimates of the size of the pharmaceutical sector (all firms, not just producers) range from 2,000 to 5,000 firms.³ By contrast, the State Department estimated that there were 160,000 chemical

* The darknet is part of the internet that is explicitly excluded from search engines or behind security walls and often used by those seeking to avoid law enforcement or government scrutiny. B2B e-commerce is an online business model that allows two businesses to transact, often at the wholesale level. B2B web platforms take an active role in the business transaction by providing credit card services, bidding tools, and other online tools and differ from business-to-consumer e-commerce platforms that focus on retail transactions.

† The Commission also examined Canada, India, and Myanmar as potential or actual sources of illegally manufactured synthetic opioids. Each of those countries is covered in greater detail in Appendix F; the Commission covers the PRC and Mexico in this report because they are the dominant sources of these drugs.

companies in the PRC.* By some accounts, the PRC does not have precise numbers of firms holding pharmaceutical manufacturing licenses.

Box 2.1

Control over Fentanyl-Related Substances in the People's Republic of China

In 2018, the United States urged the PRC, through engagements at various levels (including directly between President Donald Trump and President Xi Jinping), to adopt a generic control over all fentanyl-related substances. In April 2019, the PRC announced its intent to control all fentanyl-related substances, adapting the legal definition in DEA's rule, with some minor additions, and adding it to the Supplementary List of Non-Medicinal Narcotic Drugs and Psychotropic Drugs.^{a,b} The rule went into effect in May 2019.

Prior to the 2019 ban on fentanyl-related substances, each time authorities in the PRC would control a novel fentanyl analogue, producers would modify the compound to create a new chemical that fell outside the recently implemented rules.^c The extension to generic controls in the PRC, however, resulted in two fundamental shifts:

- First, the ban halted the continued generation of new fentanyl analogues and reduced the supply of these drugs directly from the PRC to the United States. Multiple experts in the U.S. government and other reports and data attest to this; the numbers of new fentanyl analogues appearing for the first time in drug seizures from domestic U.S. markets fell dramatically.^b This was accompanied by a sharp decline in the numbers of air-based seizures at ports of entry (POEs) arriving by mail to the United States from the PRC, starting around the time that the two countries were discussing classwide scheduling of all fentanyl-related substances. Nevertheless, despite the success in stopping direct shipments into the United States, these measures did not end the problem of illegal manufacture or import of synthetic opioids.
- Second, with the full ban on fentanyl-related compounds, producers in the PRC adapted and began trading in chemicals not listed under the country's law. These chemicals include the emergence of nonfentanyl synthetic opioids, such as the benzimidazole class of opioids (e.g., etonitazene, isotonitazene), which started showing up in greater frequency in death and seizure data in 2019.^d At the same time, exports of uncontrolled fentanyl precursors, such as 4-AP and 4-piperidone, to TCOs in Mexico increased. According to federal authorities, since 2019, criminals in Mexico have been the primary source of fentanyl illegally imported into the United States using precursors from the PRC and elsewhere.^b

NOTES: 4-AP = 4-anilinopiperidine.

^a Sasha Ingber, "China to Close Loophole on Fentanyl After U.S. Calls for Opioid Action," NPR, April 1, 2019.

^b U.S. Government Accountability Office (GAO), *Synthetic Opioids: Considerations for the Class-Wide Scheduling of Fentanyl-Related Substances*, Washington, D.C., GAO-21-499, April 12, 2021.

^c Bryce Pardo, Lois M. Davis, and Melinda Moore, *Characterization of the Synthetic Opioid Threat Profile to Inform Inspection and Detection Solutions*, Homeland Security Operational Analysis Center (HSOAC) operated by the RAND Corporation, RR-2969-DHS, 2019; Minqi Zhao, "Supply Reduction Policy Against New Psychoactive Substances in China: Policy Framework and Implementation," *International Journal of Law, Crime and Justice*, Vol. 60, March 2020, Art. 100374.

^d Office on Drugs and Crime, United Nations (UN) (UNODC), "The Growing Complexity of the Opioid Crisis," *Global SMART Update*, Vol. 24, October 2020.

What is known, however, is that the chemical and pharmaceutical sectors contribute trillions of dollars each year to the PRC's economy.⁴ It is highly unlikely that a large share of these sectors is involved in illegal production of synthetic opioids or related chemicals. In fact, analysis by the Commission suggests that the total volume of

* Bureau of International Narcotics and Law Enforcement Affairs, U.S. Department of State, *2021 International Narcotics Control Strategy Report*, Vol. I: *Drug and Chemical Control*, Washington, D.C., March 2, 2021. See Appendix F for a discussion of difficulties in estimating the number of chemical and pharmaceutical companies in the PRC.

production of synthetic opioids and related precursors is quite small, perhaps in the tens of metric tons.* Additionally, the central government of the PRC has prioritized biopharmaceuticals as one of ten key sectors in the Made in China 2025 initiative.⁵ Because of the large size and high value of these industries, with firms entering and exiting the market, a small number of unscrupulous firms could hide out in the open. The government of the PRC has a vested interest in allowing the industry to operate with little oversight or enforcement of regulations.

These market characteristics complicate oversight efforts to ensure that licensees are abiding by rules and regulations.⁶ In fact, the growth in the private chemical and pharmaceutical sectors in the PRC has outpaced the government's ability to regulate them. Serious oversight would require additional resources and personnel to enforce rules or initiate investigations.

Although the central government of the PRC sets policy, regulatory enforcement is in the hands of provincial authorities. Not only do local officials lack resources; the pharmaceutical and chemical sectors play an important role in local economies and the careers of local administrators, reducing incentives to police bad actors.⁷ Moreover, local regulators have typically limited capacity and expertise, and private industry continues to attract qualified talent away from agencies.⁸

Further, provincial regulatory efforts are susceptible to capture or corruption. To encourage rapid economic development and revenue growth, local officials eschew enforcement.⁹ As a result, authorities seem to inspect firms with little frequency. According to the 2018 China Food and Drug Administration (now the National Medical Products Administration, or NMPA) annual report (the latest for which data could be found), only 15 firms manufacturing narcotic or psychotropic drugs, precursors, or pharmaceuticals were inspected that year, a small fraction of the larger sector at that time.¹⁰

Currently, the PRC's regulatory environment lacks the flexibility to allow PRC law enforcement agencies to share information or devote large numbers of investigative resources to unscheduled chemicals. Additionally, regulatory decisions in the hands of other parts of the PRC government affect the flow of precursor chemicals. PRC General Administration of Customs authorities do not yet require specific labeling of chemical shipments from the PRC, according to agreed-upon World Customs Organization Harmonized Commodity Description and Coding System standards.

Numerous experts pointed out, in addition to these regulatory challenges, the role of money-laundering organizations in the PRC, which grew as a consequence of capital controls in the country. These organizations provide an important ancillary financial service, including various trade-based money-laundering schemes.¹¹ Those currency controls or use of money-laundering organizations operating from the PRC, however, are not specific to the emergence of synthetic opioids.

MEXICO

Today, Mexico-based TCOs are the main producer of illegally manufactured heroin and synthetic opioids, mostly fentanyl, that are trafficked into the United States. Further, according to several experts, fentanyl production capacity appears to be increasing, illegal producers could be seeking to diversify sources from which to obtain the primary materials.

Historically, Mexican traffickers have played an important role supplying drugs consumed in the United States, though this has changed over time. In the past two decades, Mexican TCOs—particularly, the *Cártel de Sinaloa*

* As described later, total revenues of producers in the PRC from manufacture and sale of synthetic opioids and related precursors are small, perhaps in the neighborhood of \$10 million.

and the *Cártel Jalisco Nueva Generación**—have moved from plant-based drugs into synthetic drug production, starting with methamphetamine. Since 2014, traffickers have increasingly entered the illegal supply chain for fentanyl and, to a much lesser extent, for fentanyl analogues. Overall, fentanyl trafficking from Mexico is largely not based on diverted pharmaceutical products but instead involves fentanyl illegally manufactured using imported precursors, some of which were only recently controlled in Mexico.

The precursor chemicals largely imported from Asia, sometimes legally at maritime or air POEs, are turned into finished fentanyl products—primarily powders and pressed counterfeit tablets.¹² Many of these products are made in small, clandestine labs in Mexico and then trafficked to the northern border, where they are smuggled into the United States on foot or by personal vehicle.[†]

The U.S. Drug Enforcement Administration (DEA) has reported that the numbers of counterfeit pills seized in the United States increased more than seven times, from 2.6 million in fiscal year (FY) 2019 to more than 20 million in FY 2021.¹³ DEA has concluded that the vast majority of these counterfeit pills originate in Mexico and have been manufactured by TCOs. According to DEA, 71 percent of counterfeit tablets seized and analyzed in the United States in 2019 had fentanyl production techniques consistent with manufacture by Mexican TCOs.¹⁴ In 2021, DEA reported that Mexican TCOs would “remain the primary source of supply and [finished] fentanyl smuggled into the United States, using precursors primarily sourced from China.”¹⁵ Additionally, Mexican authorities have reported a continued rise in domestic fentanyl seizures, both powders and counterfeit tablets. Seizures through August 2021 amount to nearly 1,200 kg of fentanyl.

Although Mexico is a primary source of illegally manufactured fentanyl, Mexico’s pharmaceutical and chemical sectors are not currently suspected to be the major sources of fentanyl precursors or diverted pharmaceutical fentanyl (although that does not mean diversion has not occurred). Several fentanyl precursors (including several chemicals not controlled in the PRC) are regulated in Mexico, as are tableting machines.¹⁶ Instead, TCOs in Mexico are importing primary materials, including substantial amounts of precursor chemicals. These buyers, who are sometimes linked to criminal groups in the PRC, are using shell companies in Mexico’s chemical sector to conceal their identity and the shipments of precursors.¹⁷ Stopping this illegal activity will be difficult. Although President Andrés Manuel López Obrador has publicly pledged to fighting systemic corruption, Mexico’s austerity measures have further constrained the country’s institutional capacity. Mexico spends less than 1 percent of its gross domestic product on security, much less than the Organisation for Economic Co-Operation and Development average of 3 percent, which presents a unique challenge for both Mexico and the United States, given their geographic proximity.

Part of the difficulty for Mexico can be explained by corruption, threats from violent TCOs, and, until recently, Mexican authorities’ reluctance to acknowledge the growing illegal fentanyl synthesis problem. In the Commission’s view, the Mexican government should exercise greater security-related functions or control across parts of the national territory where TCOs have a stronghold. Lack of institutional resources, limited activity by regulatory agencies, and inadequate involvement by local law enforcement have led to insufficient screening of commerce at POEs where fentanyl precursor chemicals enter the country. Although the security posture in Mexico could reduce direct conflicts with TCOs, the long-term erosion in Mexico’s security will ultimately diminish the ability to reduce the TCOs’ strength and freedom of movement. The Commission suggests that more needs to be done.

* Among the many Mexican TCOs, these two are the most dominant at this time.

† Based on analysis of Seized Assets and Case Tracking System (SEACATS) data, 2014–2020 (U.S. Customs and Border Protection [CBP], “SEACATS-Data,” metadata updated September 2, 2021), provided to the Commission. Although the vast majority is transported by foot or personal vehicle, fentanyl also enters the United States by passenger boat, cargo ship, train, commercial plane, drone, and mail carrier.

In addition to drug-related crimes and corruption, Mexican criminal groups are involved in other functions that enable or are related to drug-trafficking operations. Examples of these other functions, along with the core functions they enable, include the following:

- core functions of the illegal drug trade
 - legal import of precursor chemicals
 - illegal smuggling of precursor chemicals
 - illegal import of tableting machines (machines that press powder into tablets)
 - clandestine synthesis and tableting
 - trafficking and illegal export
- functions that enable the illegal drug trade
 - trafficking firearms into Mexico
 - smuggling humans
 - smuggling bulk cash into Mexico
 - money laundering (e.g., trade based, real estate, currency exchange)
 - corruption of public officials
 - use and threats of violence.

Many of these other functions, such as illegal importation of military-grade weapons or corrupting public officials, make it easier for TCOs to challenge authorities and support other operations. Both the core functions of the illegal drug trade and other functions that facilitate TCOs will need to be targeted to degrade TCOs' centers of gravity.

Recent estimates of drug- or crime-related revenues for Mexico are difficult to determine and largely predate illegal fentanyl production. The U.S. Department of Justice's (DOJ's) National Drug Intelligence Center estimated in 2008 that Mexican and Colombian TCOs earned between \$18 billion and \$39 billion a year from wholesale drug sales.¹⁸ In 2010, the U.S. Department of Homeland Security (DHS) estimated bulk cash smuggling to Mexico at between \$19 billion and \$29 billion annually.¹⁹ Other estimates from international bodies, research organizations, and news media have published drug export revenue for Mexico in the range of \$6 billion to \$21 billion a year between 2010 and 2018.²⁰ One estimate of the retail revenues for drug sales in the United States arrived at close to \$150 billion for the combined sales of cocaine, cannabis, heroin, and methamphetamine in 2016.²¹ Yet, only a portion of that money returns to Mexico, depending on how far TCOs operate in the drug market supply chain.*

Although credible estimates for total export earnings in recent years are not available, these figures would suggest that drug export sales in Mexico are in the low tens of billions of dollars. Of course, these are just revenues from the illegal sale of drugs, and many TCOs in Mexico conduct other illegal activities, which increase their earnings. Thus, expanded targeting of illegal proceeds, beyond those only from drugs, would benefit anticrime efforts more broadly.

Mexico and the United States have engaged—with varying levels of cooperation and success—on joint security issues. The U.S. government and the government of Mexico recently entered into a high-level security dialogue to support cooperative efforts. Through the U.S.–Mexico Bicentennial Framework for Security, Public Health, and Safe Communities, the United States and Mexico have pledged greater coordination to address crime (including drug trafficking and arms smuggling) and public health issues (such as drug use).²² Mexican officials that spoke with the Commission hope a cooperative partnership on several of these fronts can yield results. To

* Markups per pure unit of a drug are greatest as product moves closer to final sale.

that end, some officials in Mexico are working to tackle various illegal operations of drug-trafficking groups. However, the overall cooperation with foreign law enforcement officials in Mexico to eradicate the fentanyl threat has been insufficient to date.

The government of Mexico shifted seaport authority to the Mexican Navy (Secretaría de Marina, or SEMAR) in 2016, and the Secretaría de la Defensa Nacional (SEDENA; the Secretariat of National Defense) continues to exercise checkpoint authority on land POEs. Additionally, Mexican authorities have been updating fentanyl-specific seizure data more regularly and systematically, and promoting government coordination to update precursor chemical legislation (the latest of which occurred in May 2021 through the scheduling of four new chemicals, including fentanyl precursors).^{*} The long-term effects of handing over port inspection roles to SEMAR are unknown at this point. The Commission was told that this step might not be temporary and that the Mexican government was looking for ways to improve SEMAR's capacity to continue fulfilling this role.²³ Further, authorities in Mexico are seeking to improve efforts to target criminal networks, although U.S. support might be needed to facilitate greater technical assistance.

Presently, the Mexican government recognizes the growing problem of illegal synthetic opioid manufacturing in the country and has expressed interest in working collaboratively with the United States on improving the security situation and the rule of law.

The role of key suppliers of illegally manufactured synthetic opioids and countries in which they operate has evolved. Yet, an exploration of the domestic landscape shows that the growing supply of illegally manufactured synthetic opioids is resulting in a worsening and uneven overdose crisis across the United States.

^{*} Cámara de Diputados, 2021a. The law added the following chemicals to the list of controlled substances: 4-AP, diclorhidrato de N-fenil-4-piperidinamina, anhídrido propiónico, and cloruro de propionilo.

OVERDOSE DEATHS AND THE U.S. DRUG MARKET: A CHANGED LANDSCAPE

Never before has the United States witnessed such magnitude of overdose fatalities. As recently as the late 2000s, the number of overdose deaths in the United States totaled several tens of thousands a year, on par with other preventable deaths, such as motor vehicle accidents and firearm deaths. Since the rapid expansion of illegally manufactured synthetic opioids starting around 2014, however, the annual death rate has dramatically increased. It is not so much that more Americans are using opioids at much greater rates but that more of them are dying because the supply of drugs sold in illegal markets has become much more dangerous.* Synthetic opioids are often orders of magnitude more potent than other opioids, cheaper, and often concealed in other drugs. Separately, these differences increase risk of harm, including overdose; taken together, they have had disastrous results.

TRENDS IN OVERDOSE DEATHS IN THE UNITED STATES

Some drugs, such as fentanyl, are so potent that as little as a couple of milligrams can be enough to elicit the user's desired effect, whereas a similar effect might require tens of milligrams of heroin. This efficiency, however, comes with a trade-off. Dosing in smaller quantities means smaller windows for error, and neither dealers nor users know precisely what they are handling in markets that operate with little transparency. These uncertainties are particularly salient for illegally manufactured synthetic opioids, which are often concealed in bags of heroin or pressed into counterfeit tablets made to look like genuine prescription medications.

In many parts of the country, deaths involving synthetic opioids have outnumbered deaths from other opioids.¹ The rise in the number of overdose deaths reflects an increase in deaths among those who intended to use some other drug, such as heroin. As of 2020, the vast majority of drug-involved overdose deaths included synthetic opioids, frequently in combination with other substances, including heroin, cocaine, alcohol, and benzodiazepines.[†] In particular, synthetic opioids are found in about 70 percent of overdose deaths involving heroin or cocaine and about 50 percent involving psychostimulants (e.g., methamphetamine).

As of the end of 2020, nearly 57,000 people had fatally overdosed from synthetic opioids, which now account for more than 80 percent of opioid-involved deaths. In 2013, deaths involving synthetic opioids were close to 3,000 a year; in just seven years, that number jumped nearly 20-fold. These numbers, although staggering, still likely

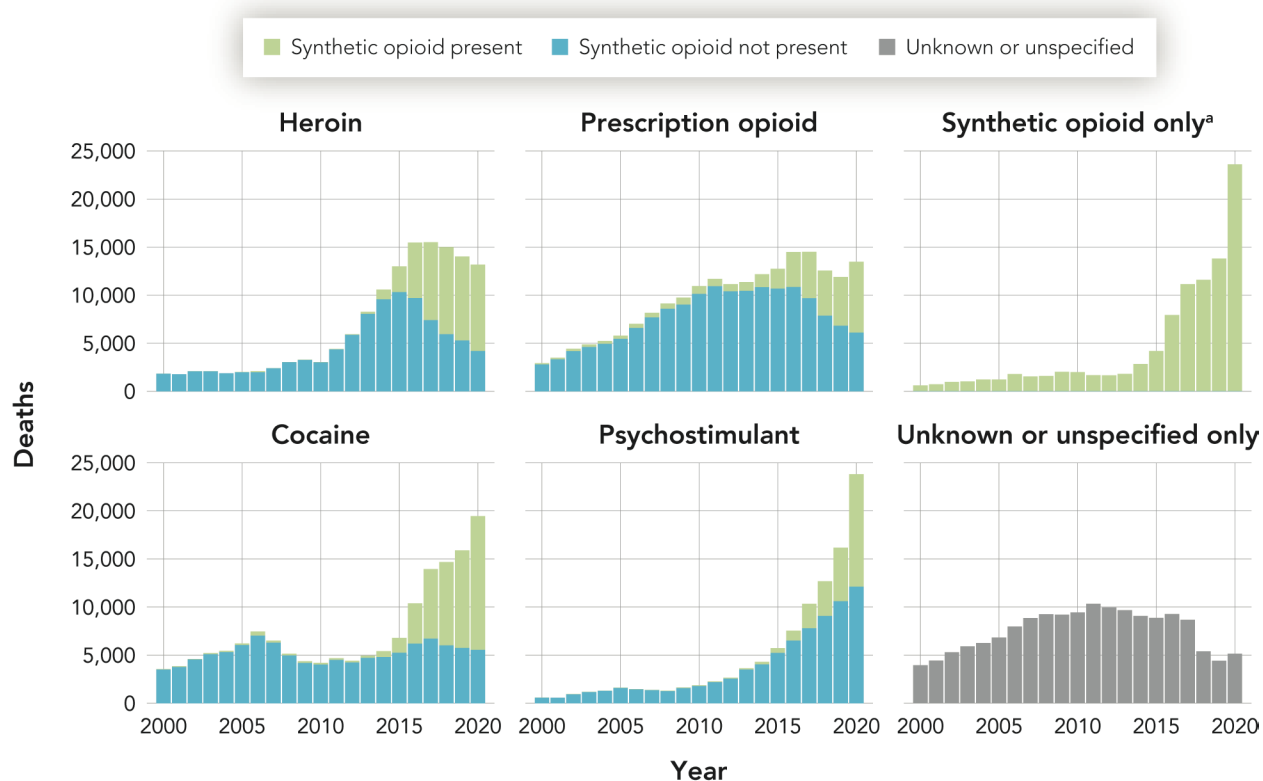
* To illustrate this, prevalence estimates from the National Survey on Drug Use and Health show that lifetime use of heroin increased from 1.8 percent to 2.3 percent between 2010 and 2019, a 27-percent increase, whereas the number of overdose deaths involving opioids increased from 21,000 to nearly 50,000, an increase of nearly 140 percent, over the same period.

† Although overall totals for 2020 are known, the most-recent individual-level death data that the Commission examined in detail at the time of this writing in January 2022 were available through only 2019.

undercount the full scope of the problem, albeit not necessarily to a greater degree than in past years.² Imprecision in toxicology screening and overburdened coroners and medical examiners cannot always accurately analyze and record the exact drug, or combination of drugs, involved in overdose deaths.

Nevertheless, available overdose data show important trends in the causes of overdose deaths in the past two decades (see Figure 3.1). The rapid rise in the availability and exposure of synthetic opioids across an increasing percentage of drug users has left an unprecedented wake of death. At the same time, the number of drug overdose deaths involving “unknown or unspecified” drugs has dropped following efforts to improve accuracy in overdose death reporting.*

Figure 3.1
U.S. Drug Overdose Deaths, 2000–2020, by Drug Category



SOURCE: Analysis of multiple-cause-of-death data (Wide-Ranging Online Data for Epidemiologic Research [WONDER], “National Center for Health Statistics Mortality Data on CDC WONDER,” last reviewed December 22, 2020).

^a Excludes cocaine, heroin, prescription opioid, and psychostimulant deaths involving synthetic opioids.

The geographic variation in opioid-involved overdose fatalities is important. Circa 2014, illegally manufactured synthetic opioids were initially detected in overdose deaths in New England and parts of Appalachia. Over time, the Northeast and Midwest census regions have experienced a worsening overdose problem involving these

* CDC has worked to help states improve data collection and analysis of drug overdose death data. See CDC, “Understanding the Epidemic,” webpage, last reviewed March 17, 2021b.

substances, as has the South, but at much lower rates.* These trends align with the changing market availability of particular drug types, as detailed in “Shifting Drug Markets,” next.

Yet, overdose death data, in their current form, cannot provide insights on how or why someone consumed synthetic opioids. For instance, the data do not show the extent to which someone regularly used heroin and was exposed to fentanyl or another synthetic opioid in the process or whether someone casually consuming a drug mistakenly ingested a counterfeit tablet containing a lethal dose of fentanyl. Similarly, death data do not indicate any specific synthetic opioid involved or whether the person knew that they were consuming fentanyl or other synthetic opioids and simply overdosed on an imprecise amount.

SHIFTING DRUG MARKETS

The places and times with the most overdose deaths involving synthetic opioids also tend to be the places and times where the most synthetic opioid seizures have been made by law enforcement. That is, places that report high rates of overdoses involving synthetic opioids also report high per capita rates of seizures of illegally supplied synthetic opioids, such as fentanyl. Since 2014, the numbers and total weight of seizures of fentanyl and other synthetic opioids have risen sharply. This increase is reflected in data reported by all major federal drug law enforcement agencies, which likely reflects a combination of more trafficking and greater attention from law enforcement.

An examination of reports of drugs that are seized by law enforcement actions and analyzed by state and local crime laboratories in the National Forensic Laboratory Information System (NFLIS) indicates that, in some states, synthetic opioids continue to appear largely mixed with heroin while, in other markets, fentanyl alone is dominant.† Seizures of synthetic opioids first occurred east of the Mississippi River, most acutely in New England and parts of Appalachia. Since then, with a few exceptions, observations of synthetic opioids have largely remained geographically concentrated (although these counts could be underreported because of the limited capacity and accuracy of data systems).

Seizures of synthetic opioids have also increased in the western United States, most prominently in Arizona, which now reports per capita seizure rates that are near those for some states in the Midatlantic, including West Virginia, Virginia, and Maryland.‡ Most other states that report large per capita rates of synthetic opioid seizures are finding that these opioids are not mixed with heroin. For example, in New England today, few drug seizures contain heroin. Most contain fentanyl not mixed with heroin, which suggests that, in these markets, heroin has been increasingly supplanted by fentanyl. Figure 3.2 displays these trends for nine states that have been acutely affected by overdose deaths in recent years.

* The census regions are

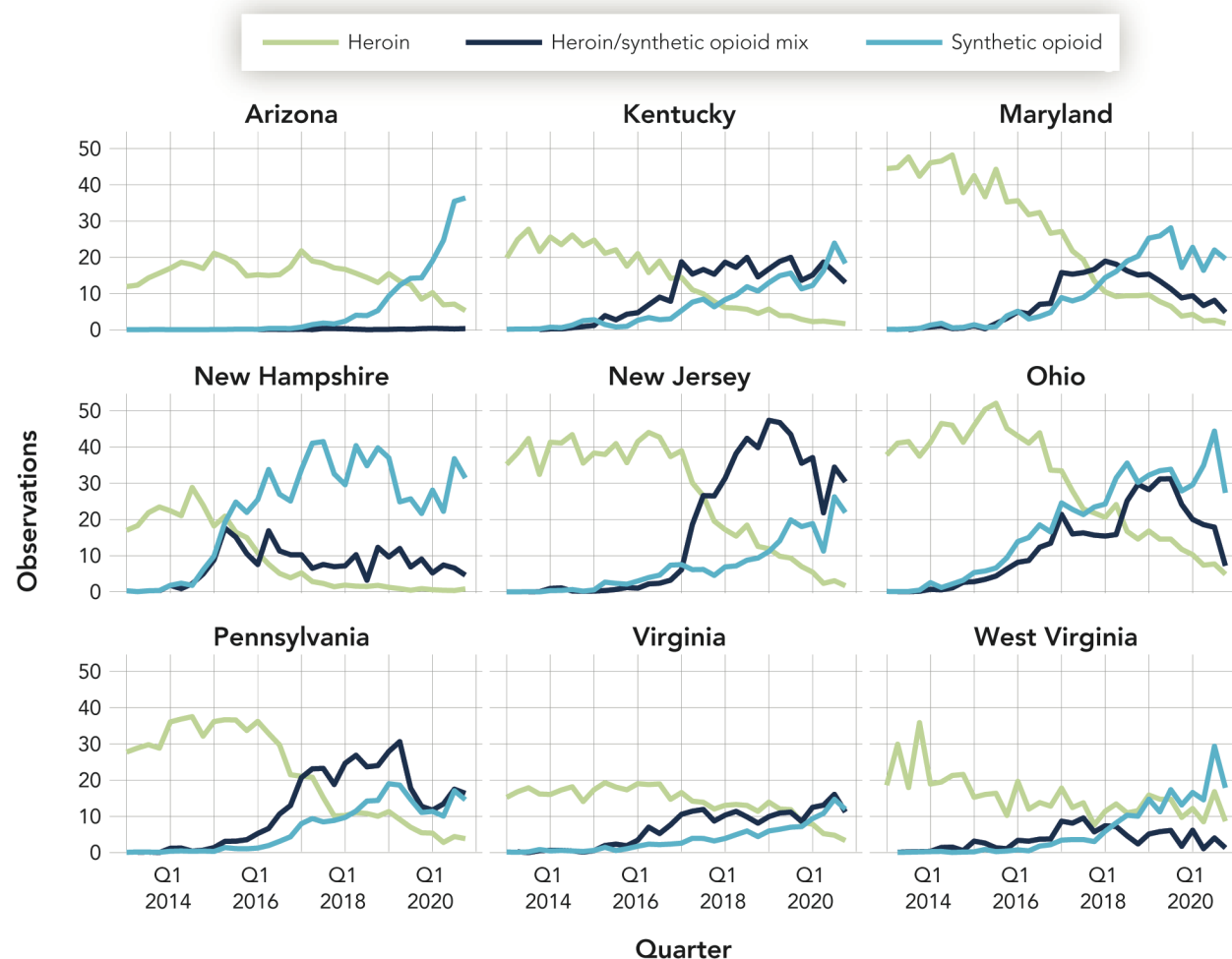
- Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont
- South: Alabama, Arkansas, District of Columbia, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia
- Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin
- West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

† NFLIS contains mostly retail-level events, or those under 1 g in raw weight (i.e., total weight of the whole sample, not of only its active ingredients). This offers greater understanding of markets in transition because some other seizure series from the federal government focus on the wholesale or importer level.

‡ Additional geographic analysis is shown in Appendix B.

Figure 3.2

Quarterly Seizures per 100,000 People for Heroin or Synthetic Opioids for Selected States



SOURCE: NFLIS data provided to the Commission.

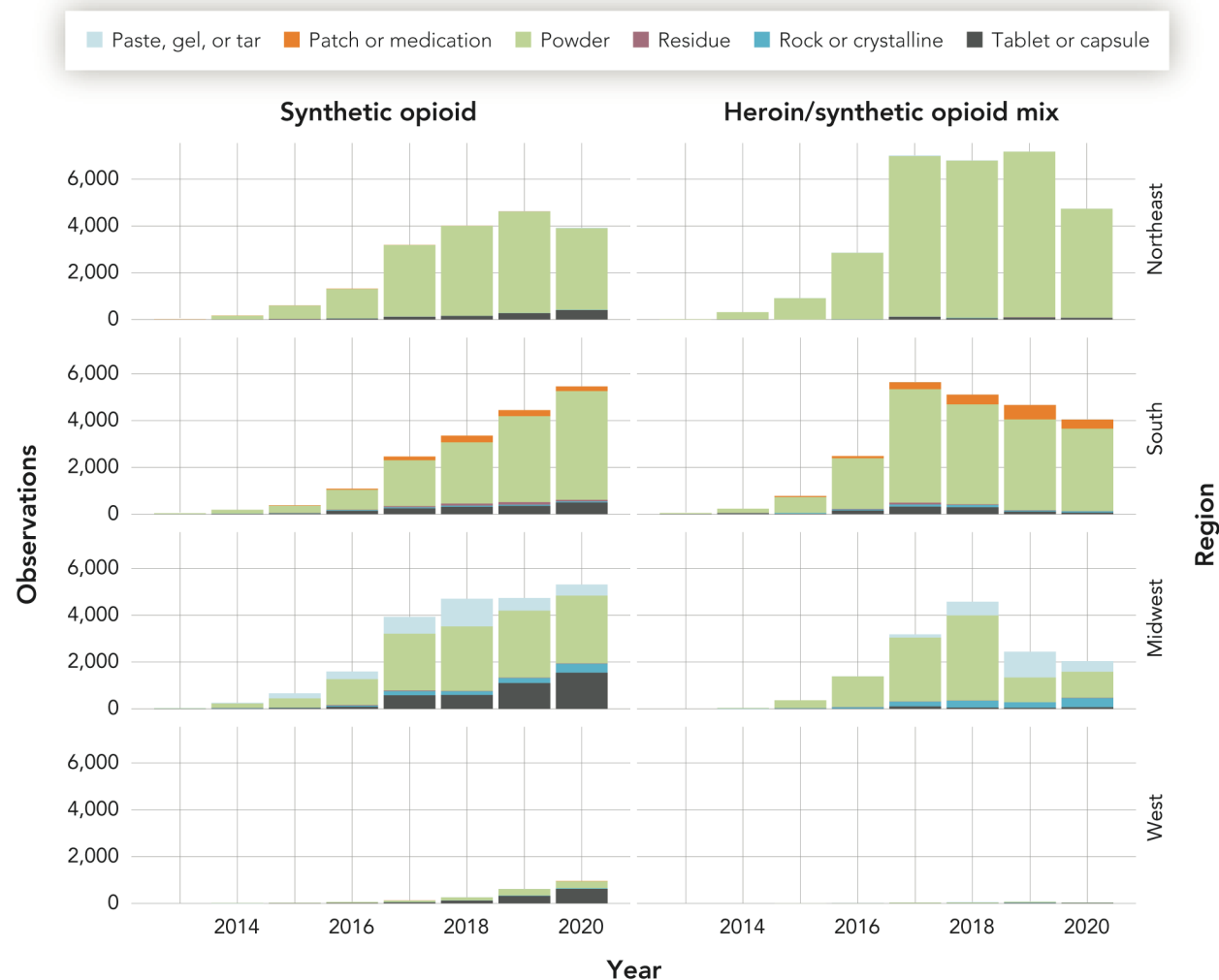
NOTE: Q1 = quarter 1. States were selected based on recent increasing trends in overdoses involving synthetic opioids.

The growth in the availability of counterfeit tablets made to look like diverted prescription medications is also reflected in synthetic opioid seizure data. Using national seizure data on formulation, seizures of synthetic opioids in tablet form have been rising steadily since 2016.

Retail-level seizures, generally defined as those weighing up to 1 g, have far fewer incidents of powder formulations that contain heroin and synthetic opioid mixtures in the western United States than in any other region; other regions report substantial numbers of seizures of powder form (see Figure 3.3). Illegally sold drugs can come in forms other than tablet or powder. This includes heroin sold in a semisolid “tar” form, which is less refined than powder. Because tar heroin is more common in the western United States and powders more common in the eastern part of the country, this trend is consistent with the hypothesis that the tar-heroin formulations make mixing harder than it is with powder. In contrast, the West region reports the highest percentage (more than 80 percent) of the number of synthetic opioid tablets seized, although overall retail-level counts are still low.

Figure 3.3

Retail-Level Synthetic Opioid and Heroin Seizures per 100,000 People, by U.S. Census Region



SOURCE: Analysis of NFLIS data, 2013–2020 (NFLIS, “NFLIS-Drug,” undated).

NOTE: Observations include only seizures of 1 g or less.

In short, geographic patterns of exposure of illegally supplied synthetic opioids, such as fentanyl, are similar to the patterns of overdose deaths involving these drugs. Deaths and drug seizures are most common in the Northeast and Midwest regions. The West has not seen fentanyl penetrate to the same degree as other parts of the country, although the number of overdoses and frequency of drug seizures are rising. The percentage of fatal drug overdoses involving synthetic opioids and other drugs, including heroin (a semisynthetic opioid) and cocaine (a psychostimulant), is rapidly expanding, suggesting greater complexity in the exposure of synthetic opioids in different drug markets. Of similar concern is the rise in the percentage of the number of seizures of synthetic opioids in counterfeit tablet formulations. These are more common in the Midwest region, although the West reports the highest share of fake pills. Monitoring these evolving trends will be an essential part of a U.S. response.

REDUCING THE ILLEGAL SUPPLY OF SYNTHETIC OPIOIDS: NEW CHALLENGES

The encroachment and entrenchment of illegally manufactured synthetic opioids into domestic drug markets in the United States has important implications for drug policy and public health and safety. Not since the early 20th century, when heroin replaced morphine as the main opioid in illegal drug markets, has the United States seen one major opioid permanently displaced by another. The ongoing shift in illegal drug markets from prescription opioids to heroin to illegally manufactured synthetic opioids is driven largely by factors related to economics and pharmacology and is likely to have long-lasting and far-reaching effects. As a result, the United States needs new approaches that focus on new leverage points and ways to close vulnerability gaps.

The Commission examined how the transition in illegal drug markets might affect illegal supply chains. Illegal suppliers, TCOs and entrepreneurial individuals alike, stand to gain financially from such a transition in the short to medium term; long-term effects are less clear if prices decline because cheaper synthetic drugs proliferate and reduce the total dollar value of the market.

Controlling the supply of illegal drugs is challenging, and the challenges appear to be substantially greater with synthetic opioids. Consolidation of supply chains means that TCOs can cut production costs and reduce risks associated with trafficking because the production and distribution of synthetic drugs involve fewer steps and smaller amounts. Further, the use of legitimate sectors, including mail and parcel systems, international trade, and online social media and other communication platforms, help connect criminal operators across large distances. Collectively, these factors reduce risks to criminals and prices and complicate efforts to reduce supply.

SYNTHETIC OPIOIDS GIVE SUPPLIERS ADVANTAGES

From a supplier standpoint, illegally manufactured synthetic opioids have several advantages over plant-based heroin in terms of production and distribution (see Table 4.1).¹ Operationally, it takes a few days to produce a batch of fentanyl, while poppy takes months to come to harvest. A single lab employing a trained technician can substitute for a field of poppy that employs scores of laborers. Further, poppy is subject to blight, drought, and eradication. A synthetic opioid can be produced in a small lab, sometimes in a single container, that is easier to conceal from authorities than hectares of poppy would be.

Table 4.1

Dimensions of Illegal Supply for Heroin and Synthetic Opioids

Dimension	Heroin	Synthetic Opioids
Production	<ul style="list-style-type: none"> Farmers cultivate poppy in remote areas; heroin requires fewer available chemical inputs. Heroin takes months to produce. Environmental and social threats to poppy crops have made them subject to risk of supply eradication. 	<ul style="list-style-type: none"> These do not involve crops. The precursor chemicals are cheap and easily substitutable. Little technical proficiency is required. Production takes a matter of days in a small setting (indoor or outdoor). Many alternative compounds can be made to circumvent existing controls.
Potency	<ul style="list-style-type: none"> Three to five times that of morphine 	<ul style="list-style-type: none"> Wide range depending on drug, but fentanyl is 50 to 100 times as potent as morphine
Distribution	<ul style="list-style-type: none"> Largely involves TCOs trafficking on overland routes Almost completely relies on traditional retail networks 	<ul style="list-style-type: none"> Can be shipped by mail in small amounts; can also be smuggled in smaller loads Modest segment of distribution that uses the internet along with traditional retail networks
Import price (unadjusted for purity)	<ul style="list-style-type: none"> \$25,000 per kilogram from Mexico 	<ul style="list-style-type: none"> \$3,000–5,000 per kilogram from the PRC^a \$25,000 per kilogram from Mexico

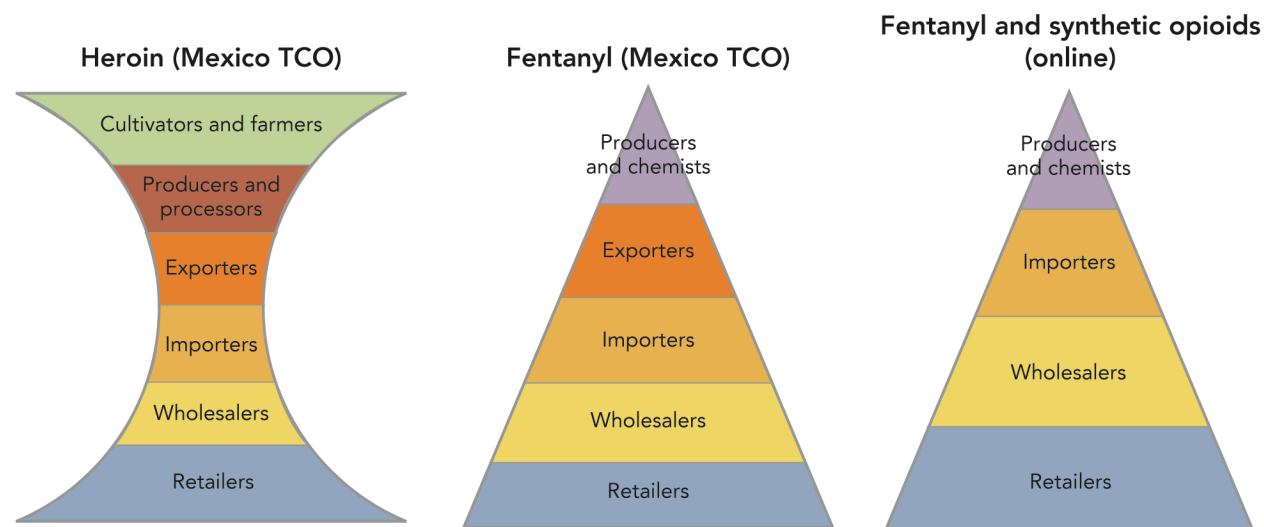
^a Prices at import from online vendors in the PRC prior to 2019. The PRC no longer appears to be the main source of finished fentanyl sent directly to the United States.

The move from heroin to fentanyl by illegal suppliers eliminates layers in the supply chain, pointing to a radical transformation (see Figure 4.1). Consolidated supply chains and production of cheaper alternatives are likely to reduce prices of drugs sold in retail markets. The price differences between heroin and fentanyl are large, even after accounting for differences in purity and potency. Data that the Commission analyzed put costs of 1 kg of heroin, which is 60-percent pure, at about \$25,000 at the point of import from Mexico. Fentanyl was advertised from online vendors in the PRC at prices of up to \$5,000 per kilogram at 95-percent purity. Undercover purchases of fentanyl suggest that 1 kg imported from Mexico to the United States could cost as much as \$25,000 at purity levels around 10 percent. Differences in purity and price for nearly pure product from the PRC and those for highly impure product from Mexico likely reflect the different supply chain and manufacturing structures.

The supply chain for synthetic opioids differs markedly from that of heroin. The traditional plant-based drug trade has an hourglass shape—with many producers at the top, many retail-level dealers at the bottom, and fewer importers and exporters in the middle (this is illustrated in Figure 4.1). In contrast, the supply chain for illegally produced synthetic opioids is a pyramid that cuts off the large number of producers at the top. Instead, fewer chemists or producers make fentanyl or other synthetic opioids that are shipped via importers and exporters to wholesale and retail distributors. Online distribution and mail-order delivery streamline the process further, by cutting out exporters and sending small amounts of fentanyl directly from producer to users or to importers for further distribution. Consolidating supply chains makes them far more efficient, reduces risks to suppliers, and increases revenues retained by the remaining segments in the chain.

Figure 4.1

Drug Supply Chains for Heroin and Synthetic Opioids



SOURCE: Adapted from Peter Reuter, Bryce Pardo, and Jirka Taylor, "Imagining a Fentanyl Future: Some Consequences of Synthetic Opioids Replacing Heroin," *International Journal on Drug Policy*, Vol. 94, August 24, 2021, Art. 103086.

Prices for illegally supplied fentanyl closer to retail distribution might already be declining. In analyzing data on drug seizures by law enforcement agencies, the Commission found that the purity-adjusted price for fentanyl at the mid-upper levels of the market, which means purchases involving 10 to 100 g of raw powder, fell on the order of 50 percent between 2017 and 2020.* Such a large drop in purity-adjusted prices suggests a substantial increase in the availability of fentanyl in illegal markets. The data do not provide enough information to know whether this is a decline in the retail price or whether this decline applies to both counterfeit tablet and powder formulations. Additional analyses suggest that this price decline for purchases of powder in the range of 10 to 100 g is driven by purchases made in the Northeast region of the United States, where markets are most saturated and closer than other parts of the country to becoming mature fentanyl markets.

In addition to offering these production advantages, synthetic opioids are highly potent and chemically versatile, allowing them to be easily manipulated in various ways that circumvent the law.² Further, use of precursors that are common and easily substitutable confound supply-reduction efforts aimed at restricting access to chemicals. Structural manipulation of compounds can challenge detection capabilities because existing technologies might not be effective at detecting newer substances that are not explicitly prohibited in drug control schedules, which allows suppliers to sometimes escape prosecution or require that DOJ use the Federal Analogue Act to prosecute suppliers.³ Further, synthesis of drugs, such as fentanyl, is increasingly made easier and more accessible to nonchemists.⁴

* The Commission looked at this in multiple ways, such as comparing the mean and median prices per pure gram over time and estimating multivariate regression models. See Appendix B for more information.

Pharmacologically, fentanyl is more potent than heroin. Ranges vary, but fentanyl's potency is up to 50 times that of heroin.* This means that a much smaller amount of pure fentanyl than of pure heroin is needed to meet about the same volume of demand, making fentanyl much easier to smuggle. It can be transported in smaller loads that are easier to conceal from interdiction efforts. Because they are more compact, it is much easier to ship synthetic opioids through the mail or express carrier or smuggle it in other ways.†

Distribution is not only easier because fentanyl is more compact; it is also facilitated through online platforms, including B2B websites; social media websites; encrypted communications; the darknet; payment applications; and the cargo, mail, and parcel systems. The growth of these online communication platforms not only presents new challenges for drug supply reduction. They also create opportunities for chemical manufacturers, most of which appear to be in the PRC and could be operating as legitimate chemical or pharmaceutical companies, and those interested in synthesizing fentanyl, such as Mexico-based TCOs.

Websites that the Commission analyzed show that vendors can find buyers by easily creating listings that use large and unmonitored web platforms. Listings sometimes promise fulfillment of multikilogram orders and guarantee delivery to Mexico. Information on content, price, or contact can easily be embedded in photos or hidden in text, which might not be identified by existing platform moderation protocols. Once they have established contact, buyers and sellers can easily communicate through other encrypted systems out of view of law enforcement. No longer do criminals need to travel to make connections with suppliers of primary inputs. In addition, the abundance of online suppliers that inexpensively sell substantial amounts of precursors creates new challenges for supply reduction.

Crucially, these production and distribution advantages reduce not only operational risks but also costs. Removal of primary layers, such as cultivators or processors, means that criminal groups in Mexico that move from heroin to fentanyl can cut operational costs and lower risks, keeping more revenue in the process. Further, Mexico-based manufacture of counterfeit tablets, which are ready for retail distribution and require no further dilution or processing, removes additional steps that occur in the United States and might allow TCOs greater control over product distribution.

PRODUCTION VOLUMES FOR SYNTHETIC OPIOIDS ARE MINUSCULE

Reliable estimates of the illegal production of synthetic opioids are not available, nor is it possible to precisely estimate total U.S. consumption or imports of illegal fentanyl. Lacking available data, the Commission estimated the scale of illegally produced synthetic opioids that flow from the PRC (or from anywhere, for that matter).‡ A simple calculation suggests that these quantities are likely to be in the single digits of metric tons (MT). The best estimate of U.S. heroin consumption in 2016 (the most recent year for which data are available) is 47 MT.⁵ Even when the

* Fentanyl's potency compared with that of morphine, the benchmark opioid, ranges from 50 to 100 times. Heroin is three to five times as potent as morphine. For the purposes of analyses presented in this report, the Commission assumed that fentanyl's potency is 25 times that of heroin by taking the upper bound of fentanyl and the midpoint of heroin (Ruben S. Vardanyan and Victor J. Hruby, "Fentanyl-Related Compounds and Derivatives: Current Status and Future Prospects for Pharmaceutical Applications," *Future Medicinal Chemistry*, Vol. 6, No. 4, March 2014; Claus W. Reichle, Gene M. Smith, Joachim S. Gravenstein, Spyros G. Macris, and Henry K. Beecher, "Comparative Analgesic Potency of Heroin and Morphine in Postoperative Patients," *Journal of Pharmacology and Experimental Therapeutics*, Vol. 136, No. 1, April 1962; DEA, "Fentanyl Facts," webpage, last reviewed November 2, 2021c).

† Neither fentanyl nor heroin is smuggled into the United States as a pure product. A kilogram of heroin seized at the U.S.–Mexico border tends to be about 60-percent pure, whereas a kilogram of fentanyl powder seized at the border tends to be about 10-percent pure. Despite the discrepancy, when both products are converted into their morphine-equivalent doses, the fentanyl seized is much more potent than the same volume of heroin would be.

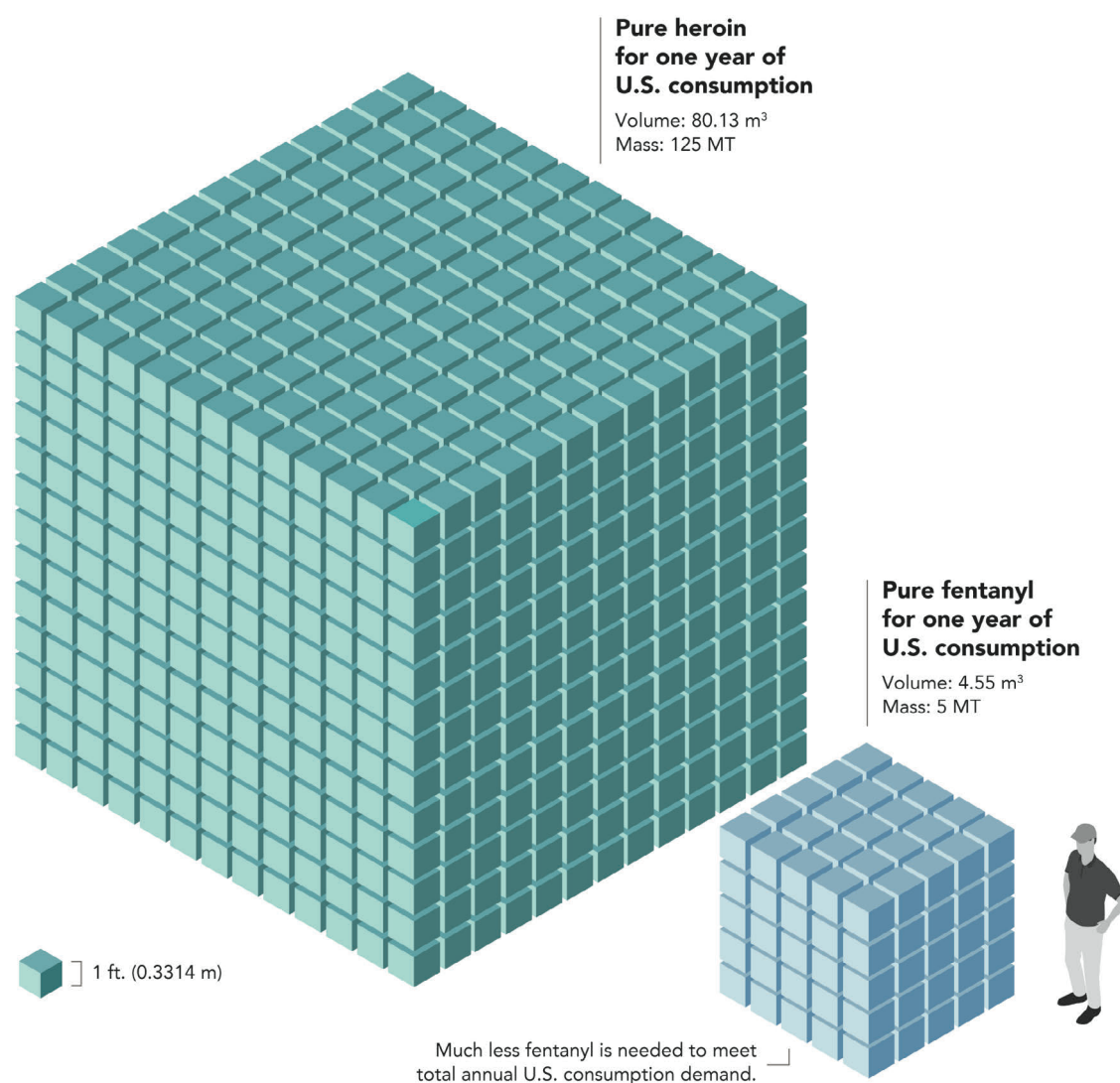
‡ More information is available in Appendix B.

Commission allowed for 50-percent market growth between 2016 and 2021, it determined that the amount of pure fentanyl needed (assuming that fentanyl is 25 times more potent than heroin) was only about 3 MT.

Single-digit metric tonnage of pure fentanyl is not a large amount and could easily fit into a shipping container or a truck trailer, which seriously challenges interdiction. Perhaps as much as 5 MT of pure fentanyl would be needed to satisfy the entire annual U.S. consumption for illegally supplied opioids, assuming that current use of heroin or prescription opioid misuse were converted to fentanyl. This amount is a fraction of the total consumption of heroin or cocaine. In equivalent potency, 5 MT of fentanyl functionally equals perhaps 125 MT of heroin; the relative difference in scale is startling and goes a long way in illustrating the magnitude of the supply-reduction challenge (see Figure 4.2).

Figure 4.2

Estimated Volume Needed to Meet U.S. Consumption for Illegally Sourced Opioid: Fentanyl Versus Heroin



NOTE: To achieve morphine-equivalent doses for all U.S. consumption in a year, 125 MT would be required. However, only 5 MT of fentanyl provides the same morphine-equivalent dosage. The volume of these supplies is illustrated with an average-size American man for scale.

Furthermore, if the total weight of fentanyl consumed is modest, the total amount of precursor chemicals used to produce that fentanyl is also relatively modest. Perhaps no more than 11.5 MT of 4-piperidone, the precursor that appears to be the most common according to DEA chemical analysis of seizures, is needed to produce 5 MT of fentanyl, assuming reasonable yield rates. Thus, the total amount of precursor or finished fentanyl is smaller than needed for traditional drug threats.

However, selling smaller amounts of a cheaper opioid means lower revenues for primary producers. Total revenues from exporting fentanyl from the PRC are likely very modest. If the export price for fentanyl from the PRC was on the order of \$5,000 per kilogram, each pure metric ton sold at export would generate \$5 million in revenue for illegal producers in the PRC. With producers in the PRC having moved from exporting finished fentanyl to exporting much cheaper precursors, that amount in revenue could be substantially less. Clearly, that is a truly tiny amount compared with the amount in the total pharmaceutical industry in the PRC or its chemical exports.

LIMITATIONS OF TRADITIONAL SUPPLY REDUCTION

Illegally supplied synthetic opioids present novel challenges for supply-reduction efforts. It is important to understand, however, that supply-reduction efforts aimed at more-traditional drugs, such as heroin, have also met with limited success. For example, the prices of both cocaine and heroin are notably lower than they were a few decades ago.*

Supply-reduction efforts at every step in the supply chain run into obstacles. Reducing supply by disrupting in source countries is difficult because local production costs are minuscule compared with final drug prices because of the huge markups along the supply chain. Even if primary production costs were to increase substantially, the effect on retail prices would be much less.⁶ To evade interdiction, drug traffickers have an incentive to use elaborate countermeasures. Supply disruptions are often overcome through alternative means of sourcing, transport, and routes.⁷ Domestic law enforcement efforts are also limited because drugs and dealers are often easily replaced through diffuse drug distribution networks.⁸ That said, supply reduction and interdiction remain critical tools that the United States must use to protect the public. Every fentanyl-laced drug or counterfeit pill taken off the street is a life potentially saved.

This is not to say that supply-reduction efforts cannot produce positive results. For instance, supply-reduction efforts are likely particularly helpful in tackling nascent and emerging drug markets.⁹ In recent history, this included successfully shutting down emergent illegal fentanyl laboratories in North America in the 1990s and 2000s.¹⁰ However, the effectiveness of supply reduction in mature and well-established markets with developed distribution networks and easy replacement of removed actors and goods has been more limited since long before the onset of synthetic opioids.¹¹

Applying Supply-Reduction Interventions to Synthetic Opioids

Traditional supply-reduction tools aimed at heroin can be adapted, to varying degrees, to the problem of illegally supplied synthetic opioids. That said, across all levels the challenges are greater when it comes to reducing synthetic

* Jonathan P. Caulkins, Peter Reuter, Martin Y. Iguchi, and James Chiesa, *How Goes the "War on Drugs"? An Assessment of U.S. Drug Problems and Policy*, Santa Monica, Calif.: RAND Corporation, OP-121-DPRC, 2005; Midgette et al., 2019. It is unknown how much lower drug prices would have been in the absence of supply-reduction efforts, and it is important to recognize that drug prices are a function of other factors as well.

opioid supply. In this section, the Commission describes a variety of interventions, summarizing them in Table 4.2 at the end of the chapter.

Production and Processing

In terms of the raw inputs, synthetic opioid production requires no cultivators. Instead, supply-reduction efforts would require a focus on policing chemical manufacturers that might not be violating laws in their countries. The precursors needed to produce fentanyl are widely available, with many not controlled internationally, in the United States, or by country-specific laws in the PRC, India, or Mexico.

This means that authorities would need to conduct investigations into improper handling or transferring of chemicals and more-frequent unannounced inspections to examine operations and records rather than eradicate swaths of illegal crops.* Given smaller production quantities, there are also perhaps fewer laboratories to target (alternatively, dismantling major processing operations would likely disrupt supply to a greater degree, assuming that TCOs do not stockpile inventory as insurance against seizures). Greater focus should also be placed on constraining producers' ability to openly transact or advertise chemicals online. Enhanced controls over equipment needed to manufacture counterfeit tablets is another regulatory option, although the low cost of some tableting machines and ingenuity of some criminal suppliers to circumvent regulations could limit that option.

Trafficking

Interdiction remains an available tool, although it has been made more difficult by the fact that trafficking loads of fentanyl can be lighter in weight and the risk can be spread out over more border crossings. Because fentanyl is synthetic, the total elapsed time from deciding to produce and obtaining finished product can be days or weeks, depending on delivery delays for precursors, which is much shorter than a full growing season needed for any plant-based drug. That means that the supply chain for fentanyl can respond faster to interdiction or production disruption successes.

The fact that Mexican TCOs are trafficking in low-purity fentanyl is striking. Traditionally, drugs trafficked over the border were at their highest purity, often 80 percent or more, depending on the drug, because smuggling smaller volumes at greater purity reduces risk.† Yet, fentanyl trafficked from Mexico is often found in purities lower than 10 percent. The increasing numbers of seizures of counterfeit tablets,¹² which are closer to 1 percent in purity,[‡] suggests that it is profitable for TCOs to smuggle counterfeit pills that are 99-percent filler.§

Powder formulations of fentanyl from Mexico also do not approach the purity levels seen in the product coming by mail directly from the PRC. Over time, should TCOs be affected by interdiction in ways that reduce their

* Examples include inspectors reviewing the records of chemicals in and out of facilities, reviewing lists of licensees to determine who, if any, has prior rule violations, and examining logs of employees who have access to labs.

† In the southwestern U.S. border states, heroin seizures larger than 1 kg have an average purity of 60 percent, according to the Commission's analysis of data from DEA's System to Retrieve Information from Drug Evidence (STRIDE). By the time it reaches retail, purity is closer to half that amount.

‡ A standard oxycodone tablet has a gross weight of 135 mg, and DEA's analysis, described in various reports from DEA's Fentanyl Signature Profiling Program (FSPP), of counterfeit pills suggests that they could contain as much as 2 mg of fentanyl, meaning that they have an estimated average purity of about 1 to 2 percent.

§ TCOs could be trafficking in counterfeit tablets containing minute quantities of fentanyl for any of a variety of reasons. One is that their manufacture is easier to conceal in Mexico than in the United States, given insufficient control of drug production and importation of tableting machines. Another is that product quality and consistency can be assured when manufacturing at industrial scale. Finally, new products, such as counterfeit tablets, offer opportunities to enter new markets by attracting people who are reluctant to use heroin.

earnings, they could take steps to complicate interdiction. One option is to smuggle smaller amounts of fentanyl at higher purities. Being able to move smaller amounts might encourage other means of getting fentanyl across the border, including use of unmanned aerial vehicles or reliance on greater use of body packing.*

A focus on maritime container and air cargo shipments departing the PRC or arriving in Mexico would likely concentrate interdiction efforts where loads of precursors are largest, purest, and in conveyances that might present fewer harmful countermeasures. That is, falsely labeling or smuggling shipments of fentanyl precursors is less harmful than concealing pure fentanyl in body cavities to get it across the border. This type of counternarcotics approach necessarily relies on the capacities and efforts of PRC authorities, however, who might be reluctant to comply, and Mexican authorities, who face internal challenges of drug-related violence and TCO influence, might be unable to effectively tighten import screening efforts. More efforts, however, should continue to be attempted.

Wholesale and Retail Distribution

Targeting wholesalers remains an option, but the supply of synthetic opioids that are not included in existing drug control schedules could diminish the possibility of prosecuting these people in some instances because of the challenges and greater costs of prosecuting a case under the Federal Analogue Act.¹³ Federal law enforcement has noted a decrease in the number of prosecutions for fentanyl analogues since the control on fentanyl-related substances was implemented in the PRC in 2019.¹⁴ Retail distribution disruption is equally challenging given the expanding use of online platforms and mail-order services.

In fact, mail-order delivery makes it significantly harder for domestic drug enforcement officers to reduce both wholesale and retail levels of supplies used in opioid manufacture. Because buyers and sellers can use the internet to facilitate transactions, law enforcement must adapt its enforcement efforts to meet the current landscape of fentanyl trafficking. Also, improving ways to screen mail and packages within Fourth Amendment protections against unlawful search and seizures could be a critical addition to existing efforts. Efforts aimed at wholesale distribution should, to the extent possible, focus on the most-egregious actors—those who traffic in novel synthetic opioids that are more potent; the most violent; and those who manufacture or distribute counterfeit pills. Retail distribution might require an entirely new focus because an unknown but consequential share of synthetic opioids is not sold in street markets that provide opportunities for law enforcement interventions to disrupt transactions, increase search times, or deter buyers from finding sellers.†

Money Laundering

Focusing on money-laundering services to seize illegal proceeds remains an important priority because it seeks to prevent TCOs from profiting from their illegal actions. The move to synthetic opioids presents some challenges because some share of online transactions use cryptocurrency or wire transfers that are arranged in a way to avoid scrutiny. Nevertheless, efforts to seize suspected proceeds or freeze accounts of foreign shell companies suspected of importing precursors are likely disruptive to criminals, even if they are unlikely to substantially affect any reduction of drug flows.‡

* A push to circumvent border detection by body packing—smuggling small amounts of pure fentanyl in body cavities—should be given consideration in light of the potentially life-threatening consequences for a low-level drug courier should a concealed drug enter that person's bloodstream.

† Concerns remain, however, about how not to increase severity of punishment for low-level dealers who might not be aware of what they are handling.

‡ See Appendix I for greater detail on the limited impact that anti-money-laundering (AML) efforts have on drug trafficking.

In general, adaptations and additional approaches are needed to increase the effectiveness of supply-reduction efforts. All of these options offer opportunities, but employing them will not be without challenges (see Table 4.2). Synthetic opioids have profoundly changed the landscape, and traditional supply reduction cannot be the only response. As a result, even as illegal supply is addressed, approaches to reduce demand for illegally manufactured synthetic opioids, including by offering medication for OUD, need to be an integral part of responding to the current opioid crisis. The federal response needs new tactics; the United States cannot keep pace with the existing tools.

Table 4.2
Possible Supply-Reduction Options Aimed at Various Market Levels

Market Level	Supply-Reduction Tool	Opportunity	Challenge
Primary production of inputs	Precursor controls; enhanced scheduling of entire drug or chemical substances; strengthening industry oversight and encouraging industry to report on movements of chemicals; targeting vendors that openly transact in chemicals online	Illegal production emanates from the supply of precursors and new drugs, lending to leverage points in supply. To deter online sourcing, authorities could target online vendors that openly advertise online.	Imposing greater chemical controls and extending schedules are difficult. Authorities face difficulties in improving oversight of large industries in Asia. Chemical controls could displace production to new chemicals and substances. Enhancing online surveillance and regulation might require oversight of internet platforms.
Processing	Enhanced controls over equipment needed to manufacture counterfeit tablets	Controls over equipment have been associated with disruptions in illegal manufacture of counterfeit tablets in Canada.	Supply reduction here could be challenging given U.S. reliance on limited enforcement in the PRC and Mexico. Successful supply reduction could encourage greater domestic production.
Trafficking	Enhanced detection capabilities and threat prediction for inbound packages, containers, vehicles, and individuals	POEs could become greater targets.	Traffickers could adapt by moving higher-purity product or shifting to other smuggling means.
Wholesale distribution	Targeting the most egregious of distributors that contribute to the most overdoses by handling potent chemicals, counterfeit tablets, or mixtures containing nonopioids	Efforts here could shift distributor behaviors and practices to reduce risks in market.	Significant human resources would likely be needed for prosecution, as would more analysis and information for investigations.
Retail distribution	Targeting the most egregious of retailers handling potent chemicals, counterfeit tablets, or mixtures containing nonopioids	Supply reduction could increase operational risks for more-dangerous dealers.	Significant human resources would likely be needed for prosecution, as would more analysis and information for investigations.

CONSIDERATIONS OF DEMAND REDUCTION: THE NEED FOR NEW INTERVENTIONS

In trying to grasp the demand for illegally manufactured synthetic opioids, U.S. drug policy and health authorities are largely flying blind. The United States does not have the data infrastructure to adequately measure the amount of illegally manufactured synthetic opioids consumed in the United States or the number of people who use them. For example, because fentanyl can be mixed in with other powders or counterfeit pills, many people who consume synthetic opioids do not even know what they are consuming. Consequently, user surveys, the mainstay of many estimates of drug use, cannot provide accurate measures.

In addition, there are no reliable estimates of either the number of people with OUD or the number of people knowingly using illegally manufactured opioids.¹ This lack of understanding creates at least three problems:

- First, it makes it hard to quantify the problem and how it is changing.
- Second, it makes it difficult to assess treatment gaps or efficiently target resources to this population.
- Third, it creates challenges in evaluating the effectiveness of interventions intended to reduce synthetic opioid consumption and OUD.

CHALLENGES FOR REDUCING DEMAND VIA TREATMENT

There is strong evidence for interventions that successfully reduce the demand for drugs, especially for heroin and prescription opioids. How well existing treatment modalities will work for the onset of OUD from illegally manufactured synthetic opioids, however, remains a question because of differences in pharmacology and tolerance specific to these drugs.² The Food and Drug Administration (FDA) has authorized three medications for treating OUD: methadone, buprenorphine, and naltrexone. Building on decades of evidence from clinical trials, medication therapy is considered the gold standard for treating OUD.

Methadone and buprenorphine are medications that are taken regularly (in some cases, daily) to reduce opioid cravings and opioid withdrawal while blunting or blocking the effects of other opioids.³ Buprenorphine can be prescribed by any DEA practitioner (save state limitations for midlevel practitioners) for pain. For OUD, authorized narcotic treatment programs and DEA Drug Addiction Treatment Act–waived practitioners can treat

ODU utilizing buprenorphine.* Methadone used to treat OUD is largely distributed through designated opioid treatment programs. Naltrexone, on the other hand, is a long-acting opioid that completely blocks the effects of other opioids.

Methadone and buprenorphine reduce the use of heroin⁴ and substantially reduce the risk of mortality from overdose.⁵ There is strong evidence suggesting that (1) providing these two medications is more cost-effective than other treatment options⁶ and (2) the social benefit of providing these medications exceeds the costs.⁷ One recent study noted that such medications, mostly methadone, yield savings of \$25,000 to \$105,000 per patient over their lifetime.⁸ There is less research on the effect of naltrexone for OUD, although extended-release formulations might reduce the use of heroin for some.⁹ Different medications affect people differently, but it is important to keep in mind that these treatments are aimed at those with OUD. Someone accidentally overdosing on a counterfeit tablet who did not have OUD will obviously not benefit from such medications.

Unfortunately, a quick look at the numbers suggests that the United States will not be able to treat its way out of the synthetic opioid problem, just as it cannot arrest or interdict its way out of it. Even in western Europe, where treatment is generally better funded, better integrated into the health care system, and more readily available than it is in the United States, the annual non-acquired immunodeficiency syndrome (AIDS) mortality rate of people who inject drugs is already 1.4 deaths per 100 person-years.¹⁰ An important subset of those deaths came from overdose, yet this figure is based on data from before potent synthetic opioids debuted. The risk of death is about 70-percent lower for someone undergoing treatment,¹¹ but the risk is not zero, and those who inject drugs often cycle in and out of medication treatment. If synthetic opioids continue to penetrate other drug markets, the non-AIDS death rate will markedly increase, which substantially raises the cumulative death risk, even for people who have access to treatment.

In addition, because of fentanyl's potency and what it means for people with limited tolerance or going through withdrawal, standard approaches for treating OUD might have to be augmented. Further, because fentanyl has been found in counterfeit tablets and cocaine, other interventions will be needed for casual (and nonopioid) drug users who are unlikely to have any tolerance to fentanyl and could overdose by unknowingly consuming drugs laced with fentanyl. Some of those people are not seeking drug treatment, nor do they need it, but they are potentially still at serious risk for fatal overdose, pointing to a real limitation of relying on treatment alone to address overdose fatalities.

Emerging Research on Reducing Demand for Fentanyl

The vast majority of research on demand reduction for opioids focuses on heroin and prescription opioids. This research has established medication therapy as the gold standard for treating OUD. Additional research on the unique challenges of synthetic opioids is needed to understand how medication therapy can best be employed for people using these drugs. Some research about the effectiveness of medication treatments for illegally manufactured synthetic opioids has been conducted; however, results of the clinical trial research have not yet been published. Researchers examined roughly 250 adults receiving buprenorphine treatment concluded, "Buprenorphine

* Per federal law, a practitioner interested in prescribing buprenorphine for OUD must obtain a DEA waiver and is limited in how many patients they can treat. See more at SAMHSA, "Become a Buprenorphine Waivered Practitioner," webpage, last updated January 3, 2022. The Drug Addiction Treatment Act is Public Law 106-310, Children's Health Act of 2000, October 17, 2000, Title 35, § 3502. It also has some other advantages:

Buprenorphine's opioid effects increase with each dose until at moderate doses they level off, even with further dose increases. This "ceiling effect" lowers the risk of misuse, dependency, and side effects. Also, because of buprenorphine's long-acting agent, many patients may not have to take it every day. (Psychiatric Research Institute, University of Arkansas for Medical Sciences, "What Is Buprenorphine?" webpage, undated)

treatment retention and abstinence among those retained in treatment is not worse between people using fentanyl compared to heroin at treatment initiation.”¹² Other researchers found that “buprenorphine was associated with lower odds of fentanyl-positive urine.”¹³

With respect to methadone, researchers in a 2020 study focused on about 150 patients, 80 percent of whom tested positive for fentanyl when they were admitted to methadone treatment programs. The findings suggest that methadone maintenance therapy (MMT) “is safe despite repeated exposure to fentanyl while taking methadone. Remission is achievable, and MMT is protective against death among fentanyl-exposed patients while in treatment.”¹⁴

In 2021, a group of physicians in Canada published recommendations for treating those who use fentanyl:

Methadone and buprenorphine are both first-line [opioid agonist treatment] options. Methadone may be preferable to buprenorphine for patients who are at high risk of treatment drop-out and subsequent fentanyl overdose. Methadone should also be considered as a first option for patients who have done well on methadone in the past; patients who do not want or have not benefited from buprenorphine; and patients for whom buprenorphine induction has not been successful.¹⁵

CHALLENGES IN REDUCING DEMAND VIA PREVENTION

Prevention programs are broadly esteemed despite limited evaluations of their effectiveness and long-term expected returns.¹⁶ Even the effectiveness of model programs does not approach that of vaccinations for measles or other childhood diseases.¹⁷ Further, the returns to school-based prevention are long term and do not address the harms in today’s markets.

Synthetic opioids are spreading, in part, because suppliers are cutting costs, not because users are asking for such drugs as fentanyl—at least, they were not initially. Indeed, many of fentanyl’s victims did not want or even know that they were using it. Expanding traditional prevention messaging to deter initiation, a major focus of conventional prevention efforts, would do little to directly reduce today’s appalling death toll, especially among those currently using street-sourced opioids, although it could have long-term benefits for future generations.*

However, because many people could be misled into using fentanyl disguised as some other drug, educating the public that counterfeit pills can contain a fatal dose of fentanyl is an important potential goal. These fake prescription pills are designed to appear nearly identical to legitimate prescriptions and have been found in every state in the country. Although someone buying diverted Adderall or Xanax without a prescription might understand that the transaction is illegal, they might have no idea that one of the pills could contain a lethal dose of a synthetic opioid.

Some community-based prevention programs might be able to help, although their effectiveness in preventing the use of synthetic opioids has not been evaluated. Anyone seeking additional information about this or other community-based prevention programs should review SAMHSA’s Evidence-Based Practices Resource Center.¹⁸

* There could well be a role for educating existing users about safer ways to use. Just as Mothers Against Drunk Driving altered norms for alcohol use (“friends don’t let friends drive drunk”), one can imagine altering norms for the use of street drugs (“friends don’t let friends use opioids alone”). Such efforts, however, are more in the spirit of harm reduction than traditional drug prevention. Some of these messaging campaigns are currently underway in some cities in North America.

DEMAND REDUCTION AND PUBLIC HEALTH INTERVENTIONS FOR THOSE WHO CONSUME SYNTHETIC OPIOIDS

Expanding access to available treatment options, prevention, and researching other innovative treatment modalities and harm reduction are paramount to reducing exposure to synthetic opioids or reversing opioid overdose.¹⁹ The number of overdose deaths would be higher without medication therapies and overdose-reversal interventions. Policymakers should remove unnecessary limitations and barriers* and expand on medication-based treatment (and overdose prevention, for that matter).

More information is needed to optimize treatment availability and deployment, as well as other lifesaving interventions, given fentanyl's potency and unpredictability in illicit markets. According to CDC, in 2020, some four out of five overdose deaths involving fentanyl occurred in residences, and more than one-third occurred within proximity to potential bystanders;† more than half of victims had no pulse when emergency services arrived.²⁰ As CDC explained, these figures indicate the increased risks posed by highly potent opioids and “underscore the need to enhance harm reduction efforts, including improving naloxone access and distribution for persons who use drugs (and their family members and friends) to ensure timely response” to overdoses.²¹

Demand-reduction interventions are an important part of a comprehensive effort to reduce the supply of illegally manufactured synthetic opioids because existing demand for these substances continues to entice criminals, including Mexican TCOs, to supply fentanyl to illegal markets. Further, reducing demand reduces exposure to fentanyl and thus saves lives. Table 5.1 explores many of these interventions and how they address the challenges that illegally manufactured synthetic opioids pose.

Table 5.1

Demand-Reduction Tools for Heroin and Synthetic Opioids

Demand-Reduction Intervention	Heroin	Potential Application to Synthetic Opioids
School-based prevention	Many school-based prevention programs lack rigorous evaluation. However, some programs have shown promise in reducing drug consumption later in life (either using drugs at all or keeping use at moderate levels).	The focus is long term. It might benefit some as they age into adulthood but does little to reduce harms faced by those using drugs today.

* The Commission did not catalog or categorize all types of limitations and barriers to medications for OUD, but many remain, including waiver requirements for buprenorphine providers; lack of provider education; requirements and restrictions for distribution of methadone, such as through some insurers (e.g., Medicare); prior-authorization requirements; limited coverage; requirements for in-person visits; prohibitions on receiving medications while incarcerated; limited research on treatment modalities for synthetic opioids; and other factors related to addiction and drug use.

† CDC defines *potential bystander* as someone “aged ≥11 years who was physically nearby either during or shortly preceding a drug overdose and potentially had an opportunity to intervene or respond to the overdose” (O'Donnell et al., 2021, p. 1741).

Demand-Reduction Intervention	Heroin	Potential Application to Synthetic Opioids
General-population prevention and media campaigns	Media campaigns lack rigorous evaluation, but messaging can shape drug-use behaviors or encourage people to enter treatment.	Messaging might need to be tailored if the goal is to reduce the number of deaths. Elevated overdose harms from synthetic opioids might require additional harm-reduction messaging rather than campaigns aimed at merely stopping drug use.
Treatment (especially medication therapies)	Medications for OUD, including methadone and buprenorphine, have been shown to reduce consumption of heroin and stabilize patients. Naltrexone is also shown to reduce use of heroin, but some patients might be less likely to stay in treatment than in other medication therapies. ^a Other forms of behavioral treatment can be combined to improve outcomes.	Early evidence shows that these medications work to stabilize patients. Different medications or varying dosing regimens might be needed to treat addiction to fentanyl or other, more-potent synthetic opioids. It might not be suitable for those without OUD exposed to fentanyl in a nonopioid drug.
Harm reduction: overdose reversal	Naloxone can reverse overdose. Evidence on naloxone shows that it reduces the number of overdose deaths.	Naloxone might need to be administered more frequently or in greater amounts for more-potent opioids. Other overdose risks are specific to fentanyl, such as precipitated withdrawal and renarcotization. ^b

NOTES: Fentanyl is a long-acting opioid that can lead to renarcotization (Charles P. France, Gerard P. Ahern, Saadyah Averick, Alex Disney, Heather A. Enright, Babak Esmaeli-Azad, Arianna Federico, Lisa R. Gerak, Stephen M. Husbands, Benedict Kolber, Edmond Y. Lau, Victoria Lao, David R. Maguire, Michael A. Malfatti, Girardo Martinez, Brian P. Mayer, Marco Pravetoni, Niaz Sahibzada, Phil Skolnick, Evan Y. Snyder, Nestor Tomycz, Carlos A. Valdez, and Jim Zapf, "Countermeasures for Preventing and Treating Opioid Overdose," *Clinical Pharmacology and Therapeutics*, Vol. 109, No. 3, March 2021), which is a lethal phenomenon in which an overdose victim revived by naloxone requires additional doses to prevent residual fentanyl in the system from inducing another overdose.

^a G. K. Hulse and M. R. Basso, "The Association Between Naltrexone Compliance and Daily Supervision," *Drug and Alcohol Review*, Vol. 19, No. 1, 2000; Joshua D. Lee, Edward V. Nunes, Jr., Patricia Novo, Ken Bachrach, Genie L. Bailey, Snehal Bhatt, Sarah Farkas, Marc Fishman, Phoebe Gauthier, Candace C. Hodgkins, Jacquie King, Robert Lindblad, David Liu, Abigail G. Matthews, Jeanine May, K. Michelle Peavy, Stephen Ross, Dagmar Salazar, Paul Schkolnik, Dikla Shmueli-Blumberg, Don Stablein, Geetha Subramaniam, and John Rotrosen, "Comparative Effectiveness of Extended-Release Naltrexone Versus Buprenorphine-Naloxone for Opioid Relapse Prevention (X:BOT): A Multicentre, Open-Label, Randomised Controlled Trial," *The Lancet*, Vol. 391, No. 10118, January 27, 2018; Brantley P. Jarvis, August F. Holtyn, Shrinidhi Subramaniam, D. Andrew Tompkins, Emmanuel A. Oga, George E. Bigelow, and Kenneth Silverman, "Extended-Release Injectable Naltrexone for Opioid Use Disorder: A Systematic Review," *Addiction*, Vol. 113, No. 7, July 2018; Björn Axel Johansson, Mats Berglund, and Anna Lindgren, "Efficacy of Maintenance Treatment with Naltrexone for Opioid Dependence: A Meta-Analytical Review," *Addiction*, Vol. 101, No. 4, April 2006.

^b Hannah Gill, Eamonn Kelly, and Graeme Henderson, "How the Complex Pharmacology of the Fentanyls Contributes to Their Lethality," *Addiction*, Vol. 114, No. 9, September 2019.

NEW CHALLENGES CALL FOR A NEW RESPONSE

The nature of the illegal supply of synthetic opioids presents new challenges that will require retooling and refocusing U.S. drug policy to reduce the number of people who become addicted to or overdose on synthetic opioids. Additionally, other parallel goals of minimizing harms, such as violence and corruption that are commonly associated with illegal markets and supply chains, should be considered. The Commission sought to understand this multifaceted problem, documenting the limitations of existing supply-reduction efforts and the gaps and vulnerabilities that remain. The task of developing effective solutions, however, is further complicated by the fact that many legitimate sectors are involved in the illegal supply of synthetic opioids and related chemicals. In addition, a restructuring of existing illegal markets, declining prices, and greater availability of novel synthetic opioids are likely to have far-reaching and difficult-to-predict effects.

Anticipating some of these consequences, the Commission considered how markets are likely to evolve and reviewed existing U.S. capacities, including counternarcotic efforts at home and abroad, efforts to reduce the demand for drugs, the role of the international community, and other ways to improve data collection and market surveillance. Taking all this into account, the Commission identified five pillars for concerted action:

- pillar 1: policy coordination and implementation
- pillar 2: supply reduction
- pillar 3: demand reduction and public health
- pillar 4: international cooperation
- pillar 5: research and monitoring.

Each pillar contains a series of key actions and associated enabling actions. The ordering of these actions does not imply priority or a ranking of importance. To develop individual areas of action, the Commission considered its understanding of the nature of the challenge and reflected on the limitations of policy efforts in the era of synthetic drugs. Some of the actions are motivated by obvious vulnerabilities or gaps. The Commission refined the sets of actions during rounds of internal review and discussion. The resulting list contains actions the United States can take to stem the illegal flow of synthetic opioids or develop ways to mitigate overdose deaths.

Additional funding from Congress and a realignment of department and agency priorities would be required to ensure proper resourcing, staffing, and policy design and implementation. To that end, several of the actions call for additional support. Congress will need to work with departments and agencies to determine the appropriate levels of funding, keeping in mind that the current overdose crisis has cost the U.S. economy approximately \$1 trillion annually in just the past few years.¹

PILLAR 1: POLICY COORDINATION AND IMPLEMENTATION

Drug policy is segmented across the U.S. government. Different agencies are responsible for various domains of the problem (e.g., supply or demand), and all levels of government are involved (federal, state, and local). Efforts at coordination occur but are not strong, and lack of coordination often impedes aims to implement successful drug policy. With the arrival of illegally manufactured synthetic opioids, the problem has only worsened and become more acute. Overall, the legislative and executive branches will need to work together to strengthen the policymaking processes and clearly delineate the roles of competing agencies that are sometimes reluctant to share information with one another. The lack of authority in key leadership roles and responsibilities at agencies hinders a coordinated policy approach both at home and abroad.

1.1. Increase Coordination of U.S. Authorities, Fill Critical Appointments, and Ensure Proper Levels of Staffing

Drug policy should be coordinated across federal agencies but also requires a robust and well-informed bureaucracy. However, limits remain on information-sharing, especially sharing data. These impediments prevent a single executive functioning agency from coordinating federal drug policy across all domains, within the federal government while also engaging state agencies, other countries, and multilateral organizations. Existing agencies retain specific areas of focus related to drug policy, but the sense of urgency of this quickly changing problem makes gaps in coordination more apparent. Well-coordinated domestic and foreign drug policy needs a single authority and appropriate levels of staffing. Unfilled nominations and appointments limit a coordinated response within key departments or foreign countries.

1.1.1. Return the Office of National Drug Control Policy to the Cabinet, and Enhance the Structure of the U.S. Drug Policy Apparatus to Improve Information-Sharing and Coordination

By statute, the director of the Office of National Drug Control Policy (ONDCP) is the President's principal adviser on all drug policy matters affecting the United States. ONDCP must lead and coordinate the formulation, implementation, and assessment of drug control policy among the 18 federal departments and agencies with drug control functions, as well as those that do not receive a share of the federal drug control budget but nonetheless perform critical roles in drug control policy formulation and implementation. The primary means for fulfilling this role is the development of the National Drug Control Strategy and its associated consolidated National Drug Control Budget. ONDCP's ability to shape policy and lead interagency coordination on drug issues can be enhanced with greater access to the data necessary to understand emerging drug trends. Furthermore, emphasizing ONDCP's statutory responsibility to certify drug control agencies' budgets and assess their performance will strengthen the federal government's ability to advance the President's drug control priorities and focus on the most-pressing drug policy issues. The ONDCP director must have a greater role in establishing the President's drug control budget priorities, in addition to holding federal drug control program agencies accountable for their performance. ONDCP should establish itself more firmly as the central authority for policymaking and interagency coordination on all drug control policy matters, and departments and agencies should reinforce that role by more consistently providing ONDCP with detailees and subject-matter experts to coordinate efforts across agencies.

ONDCP's position in the White House gives it some authority, but the 2009 removal of the director from the Cabinet has limited its role. Given the magnitude of this problem, the director should be returned to the Cabinet as the lead authority on coordinating the U.S. drug control policy apparatus and the office be appropriately staffed and adequately funded to better address this problem. Because ONDCP is in a unique position to assess the problem from both domestic and international perspectives, greater emphasis is needed to ensure ONDCP's position as the lead coordinating arm of U.S. drug policy; it holds a singular position to assess the problem not

only from the domestic and international perspectives but also across the entire national security, law enforcement, and public health dimensions of this crisis. The Office of the Director of National Intelligence should work with the director of national drug control policy to ensure adequate intelligence-collection and analysis resources are being applied to support the U.S. government in identifying and sanctioning foreign opioid traffickers and to report the results of their efforts to Congress in accordance with Section 7231 of the Fentanyl Sanctions Act.²

1.1.2. Improve Coordination of Tools Across Federal Agencies to Address Trafficking

The United States must improve the sharing of research and information across the U.S. federal drug policy apparatus by authorizing additional monitoring and research functions and authorities to ONDCP (see also pillar 5 on concrete research and monitoring actions). Additionally, addressing this complex issue requires greater operational coordination across the various domains related to drug policy, particularly the intersection of national security, law enforcement, and public health. Building on existing fusion center structures, the federal government must better integrate all the tools available to address the trafficking of synthetic opioids to include targeting illicit financial structures and sanctioning individual traffickers and integrating public health capabilities in a seamless interagency response. Because interagency cooperation at the operational level is most effective when conducted by people working side by side, this integration should include the physical colocation of these capabilities for better integration, information-sharing, and problem-solving.

1.1.3. Ensure That Key Ambassadorships, the Foreign Service, U.S. Law Enforcement Detachments Abroad, and Related Staff Positions Are Fully Staffed and Informed on Matters Relevant to a Coordinated U.S. Strategy on Illegally Supplied Synthetic Opioids

The United States does not have a sitting ambassador to India, which limits diplomatic efforts to elevate this issue to foreign partners and other countries. Several other critical positions across the federal government remain unconfirmed in the Senate, including the head of sanction coordination at the Department of State, or unnominatee by the president, including deputy administrator of DEA. Until recently, the position of DEA administrator did not have a confirmed nominee for six years. These vacancies and failure to address staff turnover in a timely manner limit a robust and coordinated federal response both domestically and internationally. Further, key departments and agencies should ensure that staff in positions that touch on various dimensions of drug policy (e.g., nonspecialized foreign service staff posted abroad) are fully trained on counternarcotics, with an emphasis on illegally supplied synthetic opioids.

1.2. Assess and Update U.S. Legislative and Regulatory Drug Control Frameworks

The emergence of whole classes of compounds that are chemically varied means that suppliers can easily circumvent existing legislation by tinkering with a drug's molecular structure. Regulatory authorities should continue to monitor the emergence of new drugs, as well as new precursor chemicals, and some legislative tools will be needed to enhance existing laws.

1.2.1. Consider Extending Appropriate Structural Controls over Whole Classes of Emerging Drugs

The continued extension of temporary restrictions on all fentanyl-related substances in the United States and its permanent adoption in the PRC coincides with a sharp reduction in the number of new fentanyl analogues. The PRC, unprompted by external requests, has recently issued generic controls over synthetic cannabinoid receptor agonists,³ signaling its intention to extend prohibition of whole families of chemicals. Given the frequency with which new drugs, including new synthetic opioids, are generated, the future of drug control could rely on extensions of controls over whole chemical structures rather than listing compounds individually.

DEA issued its first generic controls over a whole class of drugs when it temporarily scheduled fentanyl-related substances in 2018. However, the existing U.S. statutory scheme is not well-suited to this concept: In the absence of temporary classwide scheduling, every emergent drug sold in street markets is individually controlled by adding it to Schedule I simply because it is believed to pose a clear threat to public safety and has no federally recognized medical application. This process of scheduling drugs takes time, sometimes years, before a drug is permanently scheduled. Some suggest that the elevation of a whole class of chemicals to Schedule I, as is currently done, might not be the best approach, given that it restricts research and increases penalties for the supply of drugs that might not have a psychoactive effect or for which harms might not be known.

The generic control approach, on the other hand, can respond to emerging threats of entirely new synthetic opioids, without authorities having to conduct rigorous assessments only to list an individual compound that producers later modify to circumvent new controls.

Furthermore, the selection of appropriate statutory language must weigh a multitude of factors: suitable exemptions for research; the appropriate penalties for the unlawful possession of these drugs; and the means of determining the appropriate scheduling or descheduling of a compound should more information on its harms or benefits emerge.

1.2.2. Monitor Chemicals That Are Used in the Illegal Manufacture of Synthetic Opioids, and Control Them When Appropriate

Extending controls or rules over precursors that have little or no legitimate use can create the necessary legal requirements for investigating crimes related to unlawful supply or handling of precursors. The United States has controlled several of these precursors, such as 4-AP and norfentanyl, but others remain outside U.S. control because of their common use and will need to be monitored. Assessing the total amount of an uncontrolled chemical needed for legitimate purposes and ensuring the proper export labeling and handling of uncontrolled chemicals used for the production of synthetic opioids can inform future regulatory actions, including control or inclusion in other supplemental industry watch lists, and enhance investigations of suspect shipments. DEA will need to investigate and identify the variety of precursor chemicals that are likely to be used to manufacture synthetic opioids but lack legitimate commercial, medical, or industrial use.

PILLAR 2: SUPPLY REDUCTION

The reduction in supply of illegally manufactured synthetic opioids is part of a larger, comprehensive policy. Supply reduction requires a multidimensional approach that involves interdiction and law enforcement, restricting the distribution of chemicals needed to manufacture synthetic opioids, disrupting online sourcing, and tackling the enabling functions of criminal groups.

Interdiction and Law Enforcement

2.1. Enhance Interdiction Capabilities, Especially in the Mail and Express Consignment Systems That Facilitate Trafficking of Synthetic Opioids

Trafficking of synthetic opioids through the domestic mail and ECC systems remains a concern. Although CBP has identified and closed several gaps with advance electronic data (AED) for international mail, ensuring that more data are complete for inbound items to allow enhanced screening, some vulnerabilities still remain, and the U.S. Postal Inspection Service and others have reported an increase in the weight and number seizures of synthetic opioids in the domestic mail system. Law enforcement agencies need to better understand mail-based shipments of

synthetic opioids within the United States, but the Postal Inspection Service now suspects that Mexican TCOs are mailing fentanyl from warehousing facilities close to the border. Improving Postal Inspection Service screening capabilities and enforcement tools and requiring private carriers to use enhanced detection methods can help close this vulnerability gap by sharing information on positive findings, such as shipping documents and exam photos of packaging and labels with CBP's National Targeting Center. ECCs are not legally required to allow domestic law enforcement to screen parcels, and there are currently no industrywide standards or practices for screening. Requirements that private express carriers improve screening efforts aimed at synthetic opioids are warranted.

2.1.1. Close Specific Loopholes and Address Limitations to the Interim Final Rule on Advance Electronic Data Requirements for Inbound International Mail

CBP's ability to prescreen inbound international mail for potential contraband can help manage high volumes of packages. However, to increase its usefulness to screening efforts, the interim final rule promulgated by CBP establishing the AED receipt-related rules and obligations should address several limitations and loopholes. These limitations are relatively straightforward to address, but if they are not addressed, shippers are likely to be able to bypass the intended protections with little effort. One limitation is that AED are not required for "letter-class mail—documents," but, given that moving low-weight packages of high-purity synthetic opioids can be highly profitable, an assessment by relevant agencies, such as USPS and the Department of State, of whether inbound document-only mail can or does contain synthetic opioids should be conducted to confirm that this is not a significant exclusion.

Another limitation is that countries that have low capacity to transmit AED, that represent low risk, or that send low volumes of items could be excluded from the AED provision requirement. CBP should codify the specific definitions of each of these measures and monitor them over time for excluded countries to keep their excluded status. CBP will need to screen and assess items from excluded countries because they present a transshipment risk—that is, the risk that a synthetic opioid is sent from an originating country to the United States through an excluded country. CBP and Postal Inspection Service staffing and resource needs should be assessed as the volume of inbound items with AED, and presumably customs holds, increase.

2.1.2. Mandate That Private Express Consignment Carriers Cooperate with Domestic Drug Law Enforcement, and Require Couriers to Participate in Building Industry Standards to Improve Screening Algorithms for Packages

The use of private couriers to ship synthetic opioids within the United States is an important component of the current challenge. Collaboration with private couriers represents a major opportunity. A private courier has custody of their parcel during the entirety of the transport and can open a package that they determine to be dangerous. A courier also possesses a wealth of information about the package and is in complete control of its movements. This information should be paired with law enforcement algorithms for identifying suspicious packages.

As of now, cooperation between companies and law enforcement remains underdeveloped. A chief contributor to this situation is the fact that, outside of standard border checks on all incoming goods, there is no legal requirement for ECCs to allow law enforcement access to their parcels or their data. The Congress should address this vulnerability by mandating that ECCs enhance screening, not limited to synthetic opioids, of suspicious domestic consignments by requiring

- the development of industrywide best practices for automated screening algorithms that are informed by law enforcement metrics

- reporting of seized or suspected items to relevant law enforcement agencies, such as DEA
- authorization of the involvement of local law enforcement to assist in screening items at cargo hubs in the United States.

Additionally, carriers should be encouraged to track suspicious activities, including identifying red flags, such as packages shipped to unoccupied or fictitious addresses.

2.1.3. Strengthen Capacities for the U.S. Postal Inspection Service to Identify, Track, and Disrupt Mail-Based Distribution of Illegally Manufactured Synthetic Opioids That Utilize the Domestic Mail System

In response to the increased use of domestic mail for drug-trafficking purposes and faced with personnel limitations, in FY 2020, the Postal Inspection Service introduced a task-force officer program. In the program, local and state law enforcement officers are embedded with postal inspectors to support efforts to interdict drug shipments via mail.⁴ By incorporating additional officers, the service has aimed to increase its capacity to conduct interdictions and investigations. The program also offers the Postal Inspection Service the ability to tap into law enforcement intelligence available to local agencies.

The Postal Inspection Service, in collaboration with its partner agencies, should undertake an assessment of the program and the extent to which it meets its goals. Depending on the results, the program should be expanded and refined to increase its effectiveness. Further, additional tools might be needed for the service to combat mail-based distribution of illegally manufactured synthetic opioids. Controlled substances are prohibited in the mail unless the sender is registered with DEA, and prohibitions and regulations apply to a variety of dangerous substances. Other federal agencies, such as DEA and the Federal Bureau of Investigation, can issue subpoenas without judicial oversight when conducting investigations. The Postal Inspection Service cannot issue administrative subpoenas when conducting drug investigations, although it says that it would benefit its investigations and its ability to enforce existing mandates about safety of the mail stream.

In addition, USPS does not receive direct federal funding for operations, including Postal Inspection Service activities. The need for additional financial support to enhance analytic and law enforcement intelligence-based detection, including the need for adequate technological solutions to identify suspicious packages, should be assessed. Further, the use of mail generates many data points, such as information on packages and use of postal money orders, origin and destination locations, and senders' and recipients' contact information, that should be exploited for operational purposes. More-robust analyses of such data inform law enforcement operations against drug traffickers and their stash houses near the southwestern U.S. border, as well as feed into mail-targeting algorithms used to intercept suspicious mail and to undertake controlled deliveries.*

2.1.4. Increase Interdiction Capabilities for Air Cargo Shipments from the People's Republic of China to Mexico That Land in the United States

Air-bound cargo from the PRC to Mexico sometimes stops in the United States for refueling. The appropriate law enforcement agencies should prioritize collecting information to target possible shipments of precursor chemicals en route to TCOs. Additional funding for CBP and screening efforts will be needed.

* One detail mentioned to the Commission was the increasing amount of cannabis that is trafficked domestically across state lines, which complicates interdiction and targeting efforts. Greater consideration might be needed to ensure that law enforcement screening efforts are not overwhelmed by mail-based trafficking of cannabis.

2.1.5. Promote Additional Technological Solutions to Enhance Border Screening

The majority of synthetic opioids entering the United States does so across the southwestern border, although synthetic opioids also enter the United States by passenger boat, cargo ship, train, commercial plane, drone, and mail carrier. CBP should research additional technological solutions aimed at targeting and detecting low-purity fentanyl, especially in counterfeit pressed tablets. Enhanced targeting of counterfeit pills through nonintrusive, noninvasive, and other visual screening technologies, as well as enhanced data-driven targeting, could increase seizure rates. However, challenges to such detection, such as limited throughput or traffickers' countermeasures, could present continued impediments to interdiction. Congress should expand funding to the Defense Advanced Research Projects Agency or the Intelligence Advanced Research Projects Activity to research additional technological detection solutions.

2.2. *Bolster Capabilities and Capacity of Domestic Law Enforcement Efforts to Investigate Illegal Distribution of Synthetic Opioids*

Illegally sourced synthetic opioids are more difficult than heroin for domestic law enforcement to detect and seize. For one, existing referent libraries* and detection tools might need regular updates and enhancements to capture and counter the proliferation of new chemicals. Federal support and resources could be needed in some cases to aid local law enforcement in this area. Further, online distribution enables a single person, without any connection to organized crime, to import large, wholesale amounts of synthetic opioids. Overall, the small amounts necessary to satisfy consumption present unique challenges for supply-reduction efforts. In response, law enforcement capabilities will need to be enhanced to swiftly respond to any sudden emergence of illegally sourced synthetic opioids. Little is known about local law enforcement's efforts to increase the swiftness of overdose death investigations to discourage harmful dealing in synthetic opioids (transacting in counterfeit tablets or stimulants mixed with synthetic opioids, for example), but these new interventions warrant consideration.

2.2.1. Strengthen Referent Libraries to Facilitate the Detection of Emerging Synthetic Opioids

Current field detection and identification technologies rely on referent libraries that serve as databases of previously encountered and characterized synthetic opioids. A synthetic opioid that has not been encountered or has been recently created by a chemist creates a detection and identification gap in the library. Significant time delays between laboratory characterization and referent library updates can further limit detection capabilities. Additionally, the reliance on a variable array of vendors, instruments, solvents, temperature, and other characteristics of laboratory analysis reduces the utility of existing referent libraries.

Referent libraries should be improved via several pathways. DEA should develop and implement standard operating procedures for routine updating of referent libraries; these updates should occur automatically with minimal human intervention to match similar laboratory-based and -managed databases. Artificial intelligence and machine learning would expedite data analysis and shorten laboratory-based chemical characterization timelines. These techniques and other computational chemistry techniques should be used to supplement referent libraries with the predicted chemical spectra of unencountered synthetic opioids.

* Most detection equipment uses chemical profiles, known as *referent materials*, to allow the identification of an unknown powder by checking its chemical profile against the properties of known chemicals.

2.2.2. Fund and Evaluate Pilot Efforts for Local Law Enforcement to Investigate Overdose Deaths

Federal grants should be offered to local police departments and prosecutors interested in rapidly investigating overdose deaths to identify and prosecute retail dealers that transact in the most-dangerous combinations or formulations of drugs, such as synthetic opioids pressed into counterfeit tablets, dealers handling highly potent analogues, or those mixing fentanyl into nonopioid drugs, such as cocaine. The underlying premise is that dealers who think that they will attract the attention of law enforcement and risk prosecution are likely to be deterred from dealing synthetic opioids in harmful ways that elevate overdose risk. DOJ should grant funding to local law enforcement and prosecutors to hire and train additional detectives to map overdose patterns to swiftly investigate overdose scenes (e.g., ensure proper evidence collection) and identify and prosecute the dealers engaging in the most-harmful distribution practices. DEA actively partners with many state and local law enforcement agencies across the country on these cases. The Commission recommends that additional resources be allocated to federal law enforcement to expand this work.

Restricting Distribution of Chemical Inputs

2.3. *Work with Private-Sector Stakeholders to Implement Systems to Prevent Drug Traffickers from Acquiring Chemicals Used Illegally to Manufacture Synthetic Opioids*

Because information on lost or stolen chemical shipments or other concerns that could signal increased diversion of chemicals is so valuable, oversight and reporting need to be enhanced to prevent Mexican TCOs from obtaining alternative precursors from sources in North America. This could help authorities anticipate possible sourcing changes and encourage industry best practices to prevent future diversion.

2.3.1. Enhance Oversight of Reporting of Chemicals Leaving the United States or Produced Abroad by U.S.-Held Companies or Foreign-Based Operations, and Encourage Proactive Company Reporting

The use of U.S.-made chemicals in illegal drug manufacture in Mexico has been documented,⁵ although U.S. chemical firms do not appear to be a major source for fentanyl inputs. Still, diversion of chemicals made in the United States or by U.S. companies abroad could become a major risk. Chemical manufacturers are legally required to report the movements of controlled chemicals to authorities; however, no law requires a U.S.-based company to report its overseas subsidiaries' movement of chemicals to DEA. DEA can enhance diversion control efforts by reviewing information on exported chemical transactions and investigate and fine companies for such violations. Congress should require that U.S.-based firms report the production and transportation of controlled chemicals by their overseas operations or subsidiaries in countries where illegal synthetic opioid manufacture is known or suspected to occur.

To prevent a pivot to clandestine domestic fentanyl production with U.S.-sourced chemicals or related illegal exportation to Mexico, suspected shipments of chemicals that could be used in the manufacture of fentanyl or other synthetic opioids must be proactively reported. DEA and ONDCP have issued circulars to educate chemical companies,⁶ but this step needs to be supported by more-active, continued engagement with companies and industry associations. International Narcotics Control Board (INCB) materials on public-private partnerships can be used to inform these efforts.⁷

2.4. *Target Distribution of Synthetic Opioids and Related Chemicals Advertised Online*

The Commission established that chemical vendors and other producers of synthetic opioids and precursor chemicals needed to manufacture fentanyl use the internet to advertise to buyers, which include TCOs and U.S.-based distributors. The darknet remains a much smaller source of drug transactions and one that is often aimed at

end users. Local law enforcement can lack the capacity to initiate or undertake investigations online but is uniquely placed to collect evidence that aids federal investigations. Capacity, training, and reporting mechanisms for local law enforcement to feed information to federal authorities need expansion. The use of public online platforms to attract buyers interested in fentanyl precursors will require constant monitoring by federal authorities, such as DHS Homeland Security Investigations or DEA, given how online sellers often work to conceal the nature of listing content to evade automated monitoring tools. Similarly, law enforcement could target those shopping for fentanyl precursors and consider using sting operations, such as posing as an online chemical vendor in the PRC. Even if unsuccessful, an onslaught of law enforcement's fake listings could create confusion in the online environment, eroding trust and disrupting how buyers engage with sellers.

2.4.1. Improve Local Law Enforcement Capabilities to Support Federal Authorities with Information on Darknet Sales

Through grants, federal law enforcement can expand the pool of trained analysts and investigators to support federal efforts against sales of synthetic opioids on the darknet. Local law enforcement is not trained and lacks robust resources to conduct detailed cyber investigations that cross multiple jurisdictions, but electronic data collected on overdose victims and distributors can provide additional inputs to federal law enforcement. Thus, a system for local law enforcement to report leads to Joint Criminal Opioid and Darknet Enforcement could help federal authorities. DOJ should educate and train state, local, territorial, and tribal law enforcement on the tools and resources available to them about online or technology-assisted marketing and sale of synthetic opioids. These training efforts should include consolidated guidance and information-sharing on best practices in cryptocurrency management and other forensic efforts to gather and collect information from cell phones and online materials used in the transaction of synthetic opioids.

2.4.2. Enhance Efforts to Screen Online Advertisements and Use Sting Operations to Target Traffickers Sourcing Precursor Chemicals Online and Other Vendors on the Darknet

Social media data that identify which chemical precursors are being widely advertised can inform regulatory policies to control the flow of these chemicals into and within the United States. DEA and Homeland Security Investigations should enhance efforts to scan online advertisements, including social media, to identify possible criminal networks and determine how vendors are operating and changing their practices. Federal law enforcement should set up sting operations on darknet marketplaces. It should intensify its efforts to set up spoof online advertisements for fentanyl precursors or related chemicals on social media, B2B websites, or other classified-ad platforms to gather information on prospective buyers or sellers of related chemicals. Such a strategy is low cost and high reward because it does not need to be highly successful in gathering information on drug traffickers. Those who submit information or contact law enforcement can be monitored, but, because law enforcement would publicize such efforts, prospective buyers seeking fentanyl precursors online might be deterred. Federal authorities should take steps to improve their efforts to develop postings and put them online where drug traffickers source product. U.S. law enforcement, in partnership with foreign law enforcement, should strengthen its work surveilling and arresting vendors to remove their products from the market.

Disrupting Online Sourcing of Synthetic Opioids

2.5. *With the Help of Private Entities, Reduce Online Advertising and Sales*

The internet presents unique challenges for drug control in that chemical suppliers in Asia openly advertise synthetic opioids and related chemicals on public platforms, including social media forums and B2B websites. Shoppers from around the world, including Mexican TCOs, can easily link with vendors in Asia without ever

meeting in person, communicating over encrypted chat platforms out of sight of law enforcement. Private companies need to do more to monitor and delete listings for chemical precursors, provide law enforcement relevant information on suspected precursor vendors, and otherwise reduce the ease with which such ads are found using common search engines. Federal authorities should require or encourage private online platforms to take such steps.

2.5.1. Expand Social Media Self-Monitoring to Target and Remove Posts by Unlawful Drug or Precursor Suppliers, and Ask Social Media Platforms to Work with Law Enforcement to Identify Online Vendors of Precursor Chemicals and Finished Synthetic Opioid Products

Social media platforms practice self-monitoring for adult and other potentially troublesome content through their terms of service. U.S.-based companies should enhance self-monitoring mechanisms and automated screening tools to expand removal of posts and ads for chemicals specifically related to fentanyl and other novel substances. Congress can change laws governing online platform accountability for harmful or illegal content. In addition, the targeting of these drug-related posts on social media should include a technology approach, such as custom-developed algorithms for identifying Chemical Abstracts Service (CAS) nomenclature informed by DEA or machine-learning approaches, such as image recognition for images containing CAS number and seller contact information. Any such use of artificial intelligence must include safeguards to protect against algorithmic bias and other harmful automated outcomes. Congress and federal law enforcement can also formally request and publicly signal the need to create partnerships with U.S.-based technology companies to aid in identifying online vendors that post chemicals on social media platforms. They can do so by proactively sharing information about suspected postings and accounts. Creating such a partnership can aid in investigations and, if publicized, could deter future listings.

2.5.2. Encourage Greater Use of Search Engine Indexing to Remove or Deprioritize Ads for Synthetic Opioids and Related Materials

Search engines can identify advertising related to synthetic opioids and precursor chemicals through their search indexing capabilities and either force-rank the relevant pages to the bottom of the search results or remove them from the search index entirely. Federal authorities should provide U.S.-based search companies with information on key terms to encourage voluntary deprioritization of such ads. Additionally, search engines should be encouraged to identify fentanyl and precursor-related ads through those search indexing capabilities and provide a catalog of suspect websites to relevant federal authorities for further investigation.

2.5.3. Collaborate with Foreign Countries from Which Accounts Operate That Violate Terms of Service

Foreign companies developed and own two popular mobile applications used for securing illegal seller communication channels:

- WeChat can be run on Android and Apple mobile devices. Because Tencent owns it and operates in the PRC, the governing structure for monitoring communication is already in place and being cataloged. A co-collaboration should be established between the PRC and the United States to monitor and report specific accounts that are violating terms of service by advertising fentanyl precursors.
- Viber is owned by Rakuten operating in Japan. A similar co-collaboration with Japan on a governing structure for monitoring, cataloging, and reporting specific accounts violating terms of service through attempted sales of fentanyl precursors provides another option for potential mitigation and enforcement. Federal authorities in the executive branch can explore ways to sanction companies that fail to implement collaborative investigatory agreements between the appropriate law enforcement entities in the two countries.

Tackling Other Functions and Other Services Used by Transnational Criminal Organizations

2.6. Intensify Efforts to Counter Transnational Criminal Organizations' Money Laundering

The Commission identified several vulnerabilities related to money laundering, including the use of new means, such as cryptocurrency, to generate and launder illicit proceeds and the expansion of Chinese money-laundering organizations. Neither of these vulnerabilities emanates directly from the problem of illegally supplied synthetic opioids, but online buyers of synthetic opioids can use them, as can TCOs as part of their efforts to launder proceeds. Greater efforts are needed to target illegal drug proceeds. Gaps remain in the PRC's AML framework. Similarly, Mexico's legislative AML framework requires renewed focus as the existing framework faces challenges in prosecuting Mexican drug-trafficking leaders for money-laundering activities. AML efforts in the PRC and Mexico could be improved, and both countries should dedicate more resources and attention to this problem. However, just as AML efforts have been limited in their success in countering other drug threats, they are likely to remain a limited tool to directly counter synthetic opioid trafficking.

2.6.1. Encourage the People's Republic of China to Fully Implement Its Anti-Money-Laundering Framework and Address Other Anti-Money-Laundering Deficiencies

Interviewees involved in AML efforts identified Chinese money-laundering organizations and trade-based money laundering as being of increasing concern. The Department of State and Department of the Treasury should directly engage with their PRC counterparts to encourage the PRC to fully implement AML frameworks. Areas for improvement include improving the PRC's financial intelligence unit's (FIU's) access to all data they have collected, expanding the focus of money-laundering investigations beyond individuals involved in predicate crimes, and updating the regulatory framework and guidance for less traditional actors, such as online lenders and designated nonfinancial businesses and professions.

2.6.2. Provide Support to Enhance the Effectiveness of Mexican Anti-Money-Laundering Efforts

The responsibility for prosecuting money-laundering activities in Mexico rests with the country's attorney general, with support from its FIU.⁸ The FIU has administrative authority to block assets of investigated individuals. However, the use of this tool, which has grown substantially in recent years, has come under fire over due-process concerns.⁹ Legislation is currently pending to address these concerns and would fortify its authority to freeze assets of illicit financial actors and entities. In addition, the rise in the use of Chinese money-laundering organizations and trade-based money laundering presents new challenges for Mexican authorities, including the need to uncover increasingly complex relationships and language barriers in dealing with PRC counterparts. The United States should offer technical assistance and other training to financial regulatory authorities in Mexico to overcome such challenges. Notwithstanding the prominence of drug-trafficking and associated organized crime groups as a major target for law enforcement, very few money-laundering cases are brought against drug traffickers who export synthetic opioids to the United States. The money flows specifically associated with synthetic opioids are likely to involve the same traffickers engaged in supply of other drugs that generate high-volume money needing to be laundered.

2.6.3. Enhance U.S. Laws, Regulations, and Resources Pertaining to Financial Tools Aimed at Drug Trafficking and Other Crimes, and Determine What Regulatory and Policy Gaps Remain for the Cryptocurrency and Payment Processing Industries

Existing AML frameworks in the United States prioritize combating drug trafficking. That framework should continue to respond to evolving strategies that TCOs embrace for money laundering. In late 2021, the White House issued a new sanction authority against the global illicit drug trade. Executive Order 14059 provides new sanction powers for the U.S. government and new flexibility to sever criminals' finances, safeguard the U.S. financial system, and ensure warranted, strategic, and judicious use of sanctions.¹⁰ The U.S. Department of the Treasury should use this authority to prioritize sanctions targeting foreigners who engage in synthetic opioid and chemical trafficking. The department should also continue to monitor illicit activity facilitated by evolving blockchain technologies to determine whether additional solutions are needed to enhance regulatory controls over financial activity involving cryptocurrency used in money laundering with respect to drug trafficking-related proceeds. Closing other limitations in resources for DEA includes increasing the number of agents with Chinese-language (Mandarin and Cantonese) skills and cultural awareness and increase resources to investigate and prosecute money laundering. DEA should hire additional agents with the necessary skills (language and culture) to engage with Chinese money and banking institutions. Other additional prosecutorial and investigatory resources will be needed to prioritize money-laundering cases, including cases that involve false businesses and real estate purchases. Last, Treasury should intensify its efforts to encourage other countries to adopt regulations of virtual assets.

PILLAR 3: DEMAND REDUCTION AND PUBLIC HEALTH

The Commission recognized the need for a coordinated and well-articulated policy that encompasses not only supply reduction but also the demand for opioids and the related harms stemming from their use. HHS has released a drug overdose-prevention strategy that incorporates many key demand-reduction and public health policies, including primary prevention, harm reduction, evidence-based treatment, and recovery support.¹¹ Further action is needed in each of these four areas.

Prevention

3.1. Support Evidence-Informed Efforts to Reduce Substance Misuse and Progression to Substance-Use Disorder

Many discussions about drug prevention focus on school-based efforts or media campaigns, which is a very narrow perspective. People use drugs and progress to substance-use disorder (SUD) for a variety of reasons, and some of these can be addressed by improving mental health services, increasing educational opportunities, and providing other services that are not traditionally defined as *drug prevention*. Indeed, some of the best school-based prevention programs are those that teach students life skills and decisionmaking; drug use is addressed in these efforts but is not their main thrust.

Multiple programs have tried to reduce the number of opioid prescriptions and the amounts prescribed in recent years, and the number of prescriptions per capita has dropped to almost half of its peak in circa 2012; in 2020, 43 opioid prescriptions were dispensed per 100 people, down from more than 80 per 100 in 2012.¹² Efforts aimed at drug take-backs or disposals have also increased, yet many patients are still not aware of these options.¹³

Although the per capita number of overdose deaths involving prescription opioids has not decreased at a similar rate, the numbers from 2017 to 2019 suggest a decline, from 5.2 deaths per 100,000 to 4.2 per 100,000.¹⁴ However, comprehensive assessments will need to address the longer-term consequences (e.g., did these efforts

reduce initiation that would have led to future OUD and possibly an overdose?). These efforts might also make it harder for people with chronic pain to get relief as prescribers refuse medications to some patients or patients are forced to taper off their medications in an effort to end their prescriptions.¹⁵

The Commission recognizes the delicate balance between reducing unnecessary prescribing of opioids with the need to effectively manage and treat pain. For some patients, opioids are a legitimate means of managing chronic, non-cancer-related pain. CDC should encourage health care providers to review guidelines on prescribing opioids for chronic pain to ensure that patients currently receiving opioids do not face abrupt disruptions that could encourage them to source diverted medications from illegal markets.¹⁶ The extent to which people are moving to nonopioid treatment or to illegally obtained opioids remains to be seen. Indeed, some research has shown that limiting access to prescribed opioids leads some people to source the drugs from illegal markets.¹⁷ Others with OUD might move to illegal alternatives, such as heroin and fentanyl, because they are cheaper and sometimes easier to obtain.

3.1.1. Fund Evidence-Based Prevention, and Provide Resources to Evaluate New Approaches Aimed at Different Populations

SAMHSA's National Mental Health and Substance Use Policy Laboratory collaborates with the Center for Behavioral Health Statistics and Quality to collect information from grantees in federal programs in order to evaluate and disseminate information on evidence-based practices, including culturally and linguistically appropriate services, as appropriate, and service delivery models.¹⁸ SAMHSA has also created an evidence-based resource guide series, which is a comprehensive set of modules with resources to improve health outcomes for people at risk for, experiencing, or recovering from mental disorders or SUD. It is designed for practitioners, administrators, community leaders, and others considering interventions for their organizations or communities.¹⁹ That means supporting efforts with public funds that have a strong evidence base and withholding funding from those using programs that are not evidence based. However, an independent entity, such as GAO, should evaluate these criteria and publish the results to ensure that programs are rigorously assessed for the quality of their evidence. Initially, new programs will be based on theory and will not be evidence based. Innovation should be encouraged, especially with respect to developing culturally and linguistically appropriate services, as well as those for remote learning, but will also need to be rigorously evaluated. Federal support for new efforts and evaluations by disinterested (independent) third parties will be needed (program developers commonly also serve as the primary evaluators, which raises concerns about conflict of interest).

3.1.2. Expand and Target Health and Social Services to Help Reduce Substance Use and Progression to Substance-Use Disorder

Increasing social supports for individuals, families, and communities can help prevent substance use and the progression to SUD. Given the strong link between adverse childhood events and substance use, identifying opportunities at the individual and community levels to intervene is paramount. Increasing access to evidence-based mental health care, which, among other benefits, can reduce the need for illegally manufactured substances, especially for those who are self-medicating. Multiple programs and efforts fall under ONDCP's Drug-Free Communities Support Program. Having GAO or another independent evaluator determine whether these efforts are evidence based and how they can be improved can help ONDCP make sure this program is focused on the most cost-effective efforts. Special attention should be paid to efforts to enhance culturally competent prevention programming in diverse and underserved communities. Nonprofit organizations should be provided resources to implement evidence-based activities targeting the communities they serve.

3.1.3. Encourage Medical Officials and Regulatory Agencies to Reduce Opioid Misuse While Avoiding Unnecessary Barriers to Medical Use

Helping physicians, nurses, and other medical officials identify people who are experiencing SUD—and those who are at risk—remains an important opportunity for intervention. Developing and promoting best practices for screening for OUD are critical. These efforts should help practitioners distinguish between those who are *dependent* on opioids (i.e., they experience tolerance and could have withdrawal symptoms after abrupt stoppage) and those who are *addicted* (i.e., they compulsively use despite harmful consequences). Most people who are addicted to opioids are also dependent on them, but not everyone who is dependent is addicted.

Although physicians have started to reduce the prescription of opioids, some prescribers might not be aware of the risks or best information relevant to treating chronic pain. CDC, with support from HHS, should publicize and encourage health care providers to review updated guidelines for the prescribing of opioids for chronic.²⁰ Following screening, medical practitioners might adjust treatments: They might switch to nonopioid pain management (see action 3.1.4) or prescribe buprenorphine to treat OUD (or refer patients to other types of treatment). Ironically, federal entities require that medical officials undergo special training to prescribe buprenorphine for OUD but not to prescribe oxycodone or other prescription painkillers. The Commission calls on FDA and other federal entities to reconsider this barrier to evidence-based treatment for OUD. Relatedly, Congress should provide funding or other statutory requirements, perhaps through continuing medical education requirements, to educate prescribers about best practices for opioid prescribing, screening, brief intervention, and referral to treatment. Similarly, there is important variation in how prescription drug monitoring programs are implemented across states, including the access that law enforcement and other authorities have to this medical information. Input from HHS and DOJ will be critical for creating standards and improving how systems share information across states.

The availability of unused prescription opioids is an important contributing factor for the initiation of opioid misuse. FDA and ONDCP should devote necessary resources to educate patients and the public about the appropriate ways to dispose of unwanted and unused medications. Congress should request that FDA develop options, including at-home disposal or sealable take-back bags that can be collected at certain government buildings to reduce the availability of unused and unwanted medications.

Pharmaceutical companies' marketing to patients and prescribers has contributed greatly to social problems with opioids. FDA should explore reducing the direct-to-provider marketing pharmaceutical companies can conduct for opioid pain-management therapies. The United States and New Zealand are the only countries in the world that allow direct marketing of prescription drugs to consumers. Efforts should be made to curtail this practice in the United States, although this could run into legal issues related to U.S. commercial free-speech doctrine.

Additionally, HHS should mandate enhanced labeling or require that prescribers or dispensers be trained to deliver written warnings for the prescription or dispensation of medications that can cause SUD.

3.1.4. Increase the Availability of Alternatives to Opioid Pain Relievers

Although important efforts have been made to increase access to nonopioid treatment for pain, much more is needed. Increasing NIH funding for research on nonopioid analgesics and nonpharmacological strategies for relief of acute and chronic pain should offer additional options for pain-management therapy. Increasing provider reimbursement for prescribing opioid alternatives and provider education on prescribing practices and available options should help reduce reliance on prescription opioids. Additional efforts will be needed to expand access to available OUD treatments, as described in the discussion of action 3.2, to ensure that prescribers do not abandon patients with chronic pain who are experiencing OUD or dependence on opioids.

3.1.5. Promote Overdose-Prevention Messaging, Especially That Aimed at the Risks of Counterfeit Tablets

A small percentage of those dying from illegally manufactured fentanyl did so after unintentionally consuming a small amount of fentanyl concealed in a counterfeit tablet. Congress should direct funds to ONDCP and HHS to elevate a messaging campaign about this risk. DEA has started to draw attention to this problem through its One Pill Can Kill campaign, but other efforts are needed to reach those most at risk of consuming fake tablets. Additional messaging efforts can be included to encourage those using drugs to not use alone or use with naloxone present.

Treatment

3.2. *Expand Access to Evidence-Based Treatment*

The fact that access to evidence-based treatment, including medications used to treat OUD, is limited impedes successful national demand-reduction efforts. Although access to treatment for OUD has grown in recent years, many gaps remain. Most people with OUD receive no treatment, and only a small share of those in treatment receive medication treatment, which is the option with the strongest evidence base,²¹ while some treatment programs are based on no evidence at all.²² Gaps in health care availability and quality coverage across states and other federal rules for dispensing medications to treat OUD create unnecessary barriers. An effective long-term strategy to reduce trafficking must incorporate demand-side efforts to treat OUD such that people leave illegal markets or do not find themselves with little alternative but to source opioids from illegal markets to manage opioid withdrawal. In some cases, available treatment does not treat other, co-occurring disorders.

3.2.1. Extend the Opioid Public Health Emergency Declaration

Access to evidence-based treatment for OUD is impeded by a host of barriers, including insufficient capacity, cost of treatment, and regulatory obstacles (both state and federal), such as rules on who can provide treatment and under what circumstances. The executive branch should extend the public health emergency declaration of the overdose crisis* to continue to bring attention to the problem and avoid signaling that the issue has been satisfactorily resolved.

3.2.2. Identify Actions That Can Expand Access to Care by Evaluating Barriers, Regulatory and Otherwise, to Accessing Mental Health and Substance-Use Disorder Treatment

In collaboration with HHS and DEA, Congress should review existing laws and regulations pertaining to OUD treatment—and, in particular, medications for OUD—to identify changes in the regulatory framework that could facilitate access to treatment and encourage greater uptake of treatment services, including low-barrier treatment services. HHS should also convene a working group of health care insurers and employers to review the implementation of the Mental Health Parity and Addiction Equity Act²³ and progress made since the work of the 2016 Mental Health and Substance Use Disorder Parity Task Force to identify steps to promote its full

* The first such declaration was Eric D. Hargan, Acting Secretary of Health and Human Services, “Determination That a Public Health Emergency Exists,” Washington, D.C.: HHS, October 26, 2017. It has been renewed 17 times and remains in effect (Xavier Becerra, Secretary of Health and Human Services, “Renewal of Determination That a Public Health Emergency Exists,” Washington, D.C.: HHS, January 3, 2022).

implementation. The act was passed in 2008 to increase insurance coverage for mental health and SUD services. However, despite the law's existence, lack of parity is still a barrier.*

In further regulatory changes, to increase the number of providers who can prescribe medications, Congress should remove unnecessary barriers to prescribing buprenorphine, including through elimination of the cap on the number of patients a waived provider can treat and potential elimination of the requirement that a prescriber obtain an X waiver.† Additionally, reducing barriers to access can include reducing law enforcement focus on diversion of medications used to treat OUD. Research shows that people use diverted buprenorphine and methadone to manage withdrawal and to abstain from use of heroin.²⁴ Use of diverted-medication therapies to manage withdrawal or abstinence signals the need to expand their access. All things being equal, use of diverted medications by people with OUD is less risky than use of illegally sourced opioids. DEA should review internal policies to shift enforcement efforts away from diversion of medications used to treat OUD and toward supplies of illegally manufactured synthetic opioids.

3.2.3. Expand Funding and Add Interventions to Increase Availability of and Access to Opioid-Use Disorder Treatment

In addition to evaluating existing rules and identifying steps to improve access to mental health and SUD treatment more broadly, Congress and HHS should take concerted action to increase the availability and access to medications for OUD. HHS has included efforts to reduce some of these barriers and has requested that Congress appropriate more than \$11 billion in federal funding to expand access to SUD prevention, treatment, harm-reduction, and recovery support services. The appropriate government agencies and other key stakeholders will need to be involved in decisions in this area, especially as they pertain to adequacy of funding, but expanding access to OUD medications (e.g., buprenorphine, methadone) should be a priority, especially in vulnerable and at-risk populations, such as the incarcerated, unhoused, and pregnant. In parallel, increased funding should ensure the availability of and access to various types of quality treatment facilities, from crisis stabilization units to inpatient treatment facilities, and ensure that these facilities follow evidence-based guidelines and best practices. Congress should ensure that incarcerated people who are eligible for Medicaid experience no disruptions in their coverage for medication treatments for OUD upon release. Congress should also consider supporting state and local agencies that offer noncarceral approaches to drug-related crime, such as deflection and diversion programs, for nonviolent offenders whose offenses stem from addiction. Changes to increase availability of and access to treatment for OUD must be accompanied by efforts to increase the addiction treatment workforce, including individuals trained to manage comorbid mental health concerns. The workforce should be diverse in terms of type of practitioner; geographic distribution; and patient population served, including those with public or no health insurance.

In further interventions, reflecting on recent expansions in telehealth utilization, HHS should publish final rules for telemedicine special registration and methadone treatment vans and allow providers to treat with medication for OUD by telehealth without an in-person evaluation. HHS should incentivize hospitals and their emergency departments (EDs) to offer medication treatment and link presenting patients, particularly those at risk of overdose, with appropriate treatment and recovery programs. Lastly, some provisions for OUD treatment have

* One remaining obstacle is nonquantitative treatment limitations. Provisions in the Consolidated Appropriations Act, 2021 (Public Law 116-260, December 27, 2020) target this specific issue. For more details, see Marian E. Dodson, Leigh C. Riley, Hannah R. Demsien, and Nick J. Welle, "The DOL Has Made This New Mental Health Parity Requirement a Top Enforcement Priority," *Foley and Lardner*, June 16, 2021.

† Pub. L. 106-310, 2000; Division B, Youth Drug and Mental Health Services; Title XXXV, Waiver Authority for Physicians Who Dispense or Prescribe Certain Narcotic Drugs for Maintenance Treatment or Detoxification Treatment. (The waiver gets its name from the X at the beginning of the physician's second DEA prescriber number granted with the waiver.)

been amended during the COVID-19 pandemic to help ensure continued access to treatment, such as relaxation of rules for unsupervised methadone use²⁵ or changes made to telehealth Medicaid and Medicare reimbursements.²⁶ HHS and DEA should evaluate the effects of such rule changes with a view to determining whether to retain them permanently.

3.2.4. Promote Other Health and Well-Being Initiatives to Reduce Substance-Use Disorder and Address Associated Needs

Alongside interventions aiming to increase the uptake of OUD treatment, Congress and HHS should promote additional health and well-being initiatives addressing other needs associated with SUD. Congress should work with HHS to facilitate treatment for co-occurring mental illness and trauma and to expand services addressing adverse childhood experiences. Specifically, Congress and HHS should improve treatment interventions for co-occurring issues and polysubstance use, including identifying and addressing policy barriers to contingency management interventions for stimulant-use disorder.* Additional research directed by NIDA is needed to determine the links between prescription stimulant use in children and adolescents to treat attention-deficit disorder and SUD later in life. With respect to children's mental health and adverse childhood experiences, Congress should increase CDC funding to prevent childhood trauma and provide the funding of mental and behavioral health programs in elementary and secondary schools.²⁷ Concurrently, Congress should support increased provider instruction on SUD treatment in medical school and improve providers' understanding of SUD prevention and treatment.

Harm Reduction

3.3. *Enhance Evidence-Informed Harm-Reduction Efforts*

One of the Commission's overarching goals is to reduce the number of overdose deaths. Although harm reduction does not directly reduce synthetic opioid trafficking and use, the Commission recognizes the elevated risk of harms from using illegally supplied synthetic opioids (e.g., higher overdose risk stemming from higher potency and less predictability in the market). Therefore, people who continue to use these drugs need to be engaged to reduce the associated risks and harms. Harm-reduction services, such as syringe service programs (SSPs) and naloxone distribution programs, often serve as initial points of entry for long-term treatment by engaging with people who might not be ready for treatment and giving them lifesaving tools (e.g., take-home naloxone, fentanyl test strips [FTSs]) and information (e.g., education on safer use practices) intended to reduce the risk of an adverse outcome, such as overdose or infection. In addition, harm-reduction services offer a nonstigmatizing opportunity to interact with clients, linking them with other treatment and social services. Although some harm-reduction programs, such as SSPs, build on decades of evidence,²⁸ a suite of novel programs has emerged more recently with only a limited evidence base, much of it from international jurisdictions. Thus, additional research, particularly from within the United States, could be helpful.

* The extent to which users of such stimulants as cocaine and methamphetamine have SUD is unclear, but a growing share of cocaine overdoses also include synthetic opioids. By expanding access to evidence-based demand-reduction interventions aimed at stimulant users, policies would ideally reduce possible fentanyl exposure in these populations.

3.3.1. Increase Access to Naloxone by Providing More Funding, Especially to First Responders and Programs That Distribute to At-Risk Individuals and Their Families; Encourage Coprescribing; and Promote Making Naloxone Available in Public Spaces and Facilities

First responders and others on the scene administer naloxone with substantially increasing frequency since the dawning of the synthetic opioid age. More responding agencies now routinely carry naloxone. Concurrently, states are facilitating distribution of naloxone to people who use drugs or to their families and friends via pharmacy-based dispensing and via overdose education and naloxone distribution (OEND) programs, typically run by service organizations. These changes have dramatically increased the number of kits distributed, and emerging evidence suggests a positive effect of laws expanding naloxone access.²⁹ However, gaps persist in naloxone distribution. For example, some law enforcement agencies do not equip their officers with naloxone,³⁰ naloxone coprescribing along with long-term opioid prescriptions remains rare,³¹ and the coverage of OEND programs should be strengthened. Congress should therefore increase funding for first responders and OEND programs to help ensure that all first responders are equipped with naloxone and that free naloxone kits are easy and convenient for community members to obtain. In addition, HHS should take steps to promote greater coprescribing of naloxone or other ways to reduce barriers to accessing naloxone through existing pharmacy channels. Further, HHS should expand the availability of naloxone kits in public spaces and facilities; this will require addressing any potential regulatory barriers, such as the fact that, despite the proliferation of standing orders at the state level, naloxone formally remains a prescription-only drug. Congress and HHS should work to improve access by reducing legal barriers where possible.

3.3.2. Promote Evidence-Informed Harm-Reduction Approaches

When introduced, harm-reduction programs sometimes encounter stakeholder and community opposition and reservations; over time, those reservations often subside.³² Lack of information about harm reduction and the evidence underpinning individual interventions is a contributing factor. Congress, in concert with HHS agencies, should improve information-sharing about harm-reduction programs more widely to help inform stakeholder and policymaker decisions about those programs. Concurrently, HHS should evaluate the effectiveness of these efforts to disseminate information and evidence and the extent to which they meet local decisionmakers' needs.

3.3.3. Determine and Amplify Best Practices and Standards for Fentanyl Test Strip Services and Their Use

FTS distribution is an important harm-reduction strategy in the era of synthetic opioids. It provides information to the drug consumer about whether fentanyl is present in their drug sample. This might matter less to people who expect fentanyl to be included but is immensely valuable to people who would otherwise have no reason to suspect the presence of fentanyl (e.g., stimulant users). FTS distribution programs have started proliferating in the United States, and the federal government has signaled its recognition of their importance by allowing federal funding to be used for FTS distribution.³³ Still, compared with other harm-reduction interventions, such as SSPs and OENDs, FTS distribution programs represent a comparatively nascent field. For that reason, the development of the evidence base and learning from programs that have been implemented is still very much in progress. Congress and HHS should support the process of developing best practices and setting standards for FTS distribution programs and of encouraging their uptake.*

* Potential issues to overcome in FTS utilization include the risk of false positives and false negatives and, particularly for pill consumers, the need to prepare the drug sample for testing (Tracy-Lynn E. Lockwood, Alexandra Vervoordt, and Marya Lieberman,

3.3.4. Support Research on the Effectiveness of Emerging Harm-Reduction Practices

Apart from SSPs, which have been around for decades, novel harm-reduction practices have emerged during the opioid crisis—such as naloxone distribution programs. Further, New York City recently opened, and other jurisdictions in the United States expressed interest in opening supervised consumption sites, which have been operating in other countries. Canada, which is similarly affected by the opioid crisis, has also introduced programs intended to offer people who use drugs additional forms of opioid agonist treatment (including heroin-assisted treatment).³⁴ These novel harm-reduction practices must continue to be evaluated for effectiveness and impact. The body of literature on naloxone and FTS distribution programs in the United States is growing, and more of these programs should be added. To that end, Congress should make funding available to NIH to invite and administer research projects in this field and contribute to the development of a robust evidence base. For interventions that cannot be legally implemented in the United States, existing evidence necessarily comes from foreign jurisdictions; research will be required to determine the quality of those evaluations and how well interventions can transfer, given the context of U.S. social service provision. For that reason, Congress and HHS should ensure that newly sanctioned harm-reduction programs are complemented by a rigorous evaluation.

Recovery Support

3.4. Take Efforts to Promote Recovery from Substance-Use Disorder

Recovery from OUD is a long-term state for many people who struggle with addiction. Greater efforts to reduce barriers to social reintegration, including reducing barriers to employment and housing, and reducing the levels of stigma faced by those who use drugs can facilitate recovery and serve an important adjunct role in reducing demand by stabilizing the lives of those seeking to cease drug use.

3.4.1. Advance Recovery Readiness in Workplaces, and Support Entry of Those in Recovery into the Workforce

Workplaces are an important environment for people with OUD and those in recovery who are employed. On one hand, workplaces can encourage people to engage and remain in treatment and promote long-term recovery; on the other hand, workplaces can expose people to risk factors that can perpetuate substance use. This underscores the importance of “recovery-ready” workplaces—that is, workplaces that provide supportive environments by minimizing the exposure to various risk factors and removing barriers to engagement with supportive services.³⁵ Congress, in collaboration with the U.S. Department of Labor (DOL) and HHS, should undertake a review of existing programs and engage with relevant stakeholders involved in them (state and local governments, employers, and members of the workforce). This engagement should inform the development of a research agenda to examine existing recovery-ready workplaces and the identification of best practices. Simultaneously, Congress, DOL, and HHS should engage with relevant stakeholders to identify barriers to employment reentry for those in recovery. Taken together, these efforts should then inform the development of management guidelines on hiring and working with people recovering from SUD.

“High Concentrations of Illicit Stimulants and Cutting Agents Cause False Positives on Fentanyl Test Strips,” *Harm Reduction Journal*, Vol. 18, 2021, Art. 30; Traci C. Green, Ju Nyeong Park, Michael Gilbert, Michelle McKenzie, Eric Struth, Rachel Lucas, William Clarke, and Susan G. Sherman, “An Assessment of the Limits of Detection, Sensitivity and Specificity of Three Devices for Public Health–Based Drug Checking of Fentanyl in Street-Acquired Samples,” *International Journal on Drug Policy*, Vol. 77, March 2020, Art. 102661).

3.4.2. Expand Access to Recovery Support Services for Housing

Numerous facilitators of successful sustained recovery from OUD have been suggested in the literature, including housing, income, social support, freedom from negative influences, physical and behavioral health, and employment and education.³⁶ Congress, in cooperation with federal departments, should take action to make more and better resources available to people in recovery. With respect to housing, Congress should work with federal partners, state and local governments, and recovery housing stakeholders to ensure that there are sustainability protocols for recovery housing. Congress should pass legislation to charge SAMHSA, in collaboration with accrediting entities and providers, with developing guidelines and best practices for states for the availability of recovery housing.³⁷ SAMHSA should develop standards for recovery homes and compile a database of existing providers. Relatedly, Housing First has emerged as an alternative approach to providing housing to people in need, focusing on offering permanent housing options with few or no treatment participation or other entry requirements.³⁸ Existing evidence suggests that the approach is effective at providing stable housing,³⁹ but its effectiveness at reducing OUD remains unclear. GAO should review the existing evidence on the approach and propose ways to close existing research gaps.

3.4.3. Expand Access to Recovery Support Services for Employment and Peer Support

Congress should increase funding for recovery community organizations and recovery support services and, in conjunction with DOL, support an expansion of the peer recovery specialist workforce. Increasing the role that those in recovery have with the broader umbrella of drug addiction services and recovery support can serve two important goals: It gives those in recovery an opportunity to become employed, and it reduces the shortages in the recovery specialist workforce.

3.4.4. Promote Means of Reducing Stigma Around Seeking Treatment and Being in Recovery

Stigma and discrimination against people who use opioids hinder responses to the harms caused by the opioid crisis, and specifically synthetic opioids.⁴⁰ This manifests itself in many ways. For instance, stigmatizing attitudes might be one, though not the only, motivator of opposition to service provision for people who use drugs. Even medical professionals can have negative perceptions of people with SUD, and some clinicians are not interested in providing medication treatment for OUD.⁴¹ Further, stigma associated with drug use can affect how likely people who use drugs are to seek treatment and other services they might need. This could particularly be the case with populations of color because of their history of disproportionately being the subject of drug law enforcement, as well as historical discrimination by health and social services. To counter the effects of stigma, Congress should fund educational programs for media and decisionmakers on the topic of stigma that would include such topics as avoiding the use of stigmatizing language and enhancing support for public relation campaigns, such as a national recovery month.⁴² Training for clinicians related to OUD and medication treatment could also help address the issue.

PILLAR 4: INTERNATIONAL COOPERATION

Many of the primary inputs used in the illegal manufacture of synthetic opioids are sourced overseas, and uneven levels of control over precursor chemicals, detection capacities, export reporting requirements, and other vulnerabilities in rules and regulations facilitate the trafficking of these drugs. These dimensions of the problem offer opportunities for U.S. engagement and leadership with the international community, including various relevant multilateral bodies. The most-effective U.S. engagement should focus on the following areas: (1) pursuing a stronger partnership with Mexico that, in the near term, should focus on intelligence information-sharing to combat TCOs, and (2) working with the PRC to reduce sales of precursor compounds and synthetic opioids,

recognizing the difficulties that current relations between the United States and the PRC present. That said, engagements with other countries involved in drug trafficking are also important and should be pursued as opportunities avail themselves, even if the PRC and Mexico represent the near-term priorities.

Multilateral Institutions

4.1. Strengthen Coordination with Multilateral Institutions to Promote Enhanced Control and Reporting of Drugs and Other Chemicals

UN bodies, including INCB, make up a system whereby all countries have agreed to minimum control standards over drugs and related chemicals. However, gaps remain. Several precursors used in the manufacture of synthetic opioids have little or no other known use but remain lawful to produce and possess. Further, the production of synthetic opioids relies on chemicals with many other legitimate uses and are often supplied knowingly or unknowingly by licensed operators. In response, the Department of State should work with international organizations to strengthen drug control over the illegal supply of synthetic opioids, engaging with relevant national authorities, including those that might be less than friendly to the United States. INCB has several tools at its disposal, including the international special surveillance list (ISSL), to enhance monitoring of precursor chemicals. The use of this list, other tools, and technical assistance and capacity-building programs should be promoted to improve drug detection and control in other countries.

4.1.1. Enhance Promotion of Listing Chemicals That Have Little or No Use Other Than Manufacture of Synthetic Opioids Both to the 1988 Convention and Through the International Narcotics Control Board's International Special Surveillance List

The Department of State, at relevant international forums and bilaterally, should redouble efforts to elevate the need for international controls over precursor chemicals that have little use other than manufacturing synthetic opioids. In 2017, the department was instrumental in elevating controls over 4-anilino-N-phenethylpiperidine (4-ANPP) and N-phenethyl-4-piperidone (NPP) at the UN Commission on Narcotic Drugs and at INCB. Efforts should be made through the U.S. diplomatic corps to continue to encourage controls over 4-AP and norfentanyl at international forums and bilaterally with countries known or suspected to facilitate illegal manufacturing of synthetic opioids. The State Department can continue to engage INCB, UNODC, and other multilateral forums to use working groups to identify emerging precursors that might need to be monitored or elevated to control. Similarly, the department should strengthen efforts to encourage other parties to the UN drug control treaties to alert INCB to other emerging derivatives that might be placed on the ISSL. This step would not extend regulatory controls on newly listed substances but would be instrumental in encouraging greater monitoring and reporting on incidents involving these chemicals. The ISSL indicates whether a listed chemical has known legitimate uses.

4.1.2. Support the International Narcotics Control Board to Help Other Countries Develop and Build Partnerships Between the Private Sector and Regulatory Authorities

Enhancing public-private partnerships between chemical manufacturers and foreign regulatory authorities could close vulnerability gaps that allow the improper transfer of chemicals used in the illegal manufacture of synthetic opioids. Some regulatory authorities do not have direct relationships with private entities, and some private firms might not be aware that certain orders for chemicals are used in the illegal manufacturing of synthetic opioids. INCB works directly with state regulatory agencies and can serve as a useful source of information and tools to help national authorities build public-private partnerships with the chemical producers.⁴³ The objectives of these efforts include creating a corporate culture of transparency and good behavior and educating firms about alerting to

suspicious orders or adopting know-your-customer rules.* The State Department must support INCB to facilitate the engagement of regulatory agencies, including the development of training materials and best practices, with private chemical companies, especially in countries where precursor chemicals needed for the production of synthetic opioids are manufactured.

4.1.3. Support Efforts by the United Nations Office on Drugs and Crime, the World Health Organization, and the International Narcotics Control Board to Enhance Countries' Capacities in the Areas of Drug Detection, Identification, and Reporting to Support Scheduling Decisions and Related Controls

Limited technical capacities and no early-warning systems hinder countries' ability to respond to the problem of emerging synthetic drugs, including synthetic opioids. This impedes international scheduling decisions because the World Health Organization (WHO) might not have enough information to examine the harms from new drugs. The State Department should work bilaterally and multilaterally to improve other countries' capacity to support efforts at enhanced early-warning networks to collect information on drug harms. These efforts could take advantage of and build on existing tools, such as the UN Toolkit on Synthetic Drugs, which includes modules on forensics and early warning.⁴⁴

4.1.4. Utilize International Channels and Multilateral Forums to Encourage the People's Republic of China to Strengthen Regulatory Oversight of the Pharmaceutical and Chemical Sectors

The PRC might respond to multilateral concerns on the drug issue because it does not want to be perceived as a "narco state." The U.S. diplomatic corps should enlist other countries affected by synthetic opioids and international forums, such as UNODC and INCB, to support efforts to encourage the PRC specifically on the issue of lax controls on its large chemical and pharmaceutical sectors.

4.2. *Examine How the International Drug Control Regime Can Be Improved, Expanded on, or Otherwise Supplemented*

The current international drug control regime was designed before advancements in chemistry allowed for easy and rapid drug design. International accords are slow to extend controls, requiring many review processes. The proliferation of new compounds, including new theoretical molecules, represents a unique new challenge. In response, there are few options to expedite review mechanisms to add chemicals to lists or drugs to schedules. The United States and like-minded countries should engage in means to expedite listings.

4.2.1. Explore the Practicality and Utility of Additional Multilateral Agreements on Chemical Control Focusing Specifically on Synthetic Drugs

International drug control conventions cannot keep up with the rapid pace of development of new drugs, yet reopening them to amendment or discussion would be problematic and complicated. Given that future drug policy will increasingly involve synthetic drugs, the State Department should engage other like-minded countries (or those experiencing similar challenges involving new psychoactive substances) to explore whether new international agreements would be useful in addressing the gaps identified in current agreements on synthetic drugs and their precursors and, if so, to further explore the feasibility and risks of working toward such agreements.

* Rules that require that a chemical producer export only to licensed and legitimate importers.

4.2.2. Encourage Other Countries, Especially Those Suspected of Supplying or Known to Supply Novel Synthetic Opioids, to Extend Controls over Whole Classes of Emerging Substances by Amending Relevant National Drug Control Laws and Regulations

The PRC's regulatory change in 2019⁴⁵ coincided with a substantial decline in the numbers of new fentanyl analogues in U.S. drug seizure data. Other novel synthetic opioids have started to appear, including the benzimidazole classes of opioids, so new controls over other structural classes of drugs with similar potency will be needed. The State Department should intensify its efforts to encourage countries to extend existing or adopt new generic control measures within their national drug control laws. Aligning this action with action 1.2.1 could boost efforts by foreign counterparts if they see that the United States amends its own domestic laws in a similar fashion.

Mexico

Presently, Mexico is the largest source of illegally manufactured fentanyl entering the United States. Continued engagement at various levels will be needed to improve the capacity of counterdrug authorities and reduce corruption in that country. The United States will need to continue to define its strategic partnership with Mexico as the counterdrug focus shifts to illegally manufactured synthetic opioids.

4.3. *Enhance Efforts to Ensure a Collaborative U.S.–Mexico Security and Drug Partnership by Enhancing Mexican Counternarcotic Capabilities, Strengthening Institutions Against Corruption, and Focusing Greater Resources on the Illegal Firearm Trade*

Mexico-based TCOs dominate the production and distribution of fentanyl into the United States. Numerous experts highlighted the importance of continuous work toward the strengthening of a collaborative U.S.–Mexico counterdrug partnership. The United States and Mexico have recently agreed to a future security partnership under the Bicentennial Framework for Security, Public Health, and Safe Communities. Challenges remain, but the United States should work to find areas of common ground and support trusted individuals and institutions in Mexico. Key partners, such as SEDENA and SEMAR, should be supported by U.S. Northern Command to strengthen a collaborative relationship. Operationally, the Mexican military should be supported to target synthesis labs and counterfeit pill operations and direct attention away from counterdrug efforts aimed at heroin, such as poppy eradication. The United States needs to support efforts to strengthen institutions, combat corruption, and improve judicial systems to reduce impunity. This remains a notable challenge, and more could be done, because violent, well-funded TCOs are able to influence and coerce many of Mexico's governing institutions. Additional efforts are needed to facilitate extradition procedures to bring high-level traffickers to justice. The United States could assist Mexico with efforts to reduce drug-related violence by doing more to stop the illegal flow of firearms into that country. Addressing the illegal trafficking in firearms should help weaken violent TCOs.

4.3.1. Encourage Mexican Counternarcotic Authorities to Prioritize Targeting Counterfeit Pill Operations, Including the Illegal Importation of Machinery and Equipment That Can Be Used to Manufacture Tablets

Mexican TCOs are the primary manufacturers and suppliers of fake fentanyl pills into the United States. Seizures of counterfeit tablets containing fentanyl but made to look like other medications have increased in recent years. These drugs are riskier for some segments of the user base and require some technical capacity and machinery to produce. These operations should be targeted, while greater efforts should be made to enforce the laws on the books. This includes enhancing import controls at POEs, investing more resources to target and investigate tableting operations, and requiring that authorities follow up with licensees and operators that use such machinery. The Department of State, DHS, and DOJ will need to work with their Mexican counterparts to ensure that greater efforts are made to prioritize addressing these illegal operations.

Continued efforts aimed at heroin processing labs and poppy eradication take resources and attention away from targeting synthetic opioid trafficking and processing. Further, eradication is politically complicated and sometimes results in disruptive and violent confrontations between security forces and criminals. The continued price drops for opium sold by farmers make poppy cultivation increasingly unappealing. Strategically, some drug supply–reduction efforts in Mexico will need to reorient, and this entails identifying the most-important threats given resource constraints. From a strategic standpoint, that means directing counterdrug operations in Mexico toward port security and targeting fentanyl processing labs and counterfeit tablet manufacturing instead of poppy fields or heroin labs. State Department and other U.S. authorities should work to aid Mexican counterparts in this reorientation.

4.3.2. Offer Technical and Financial Assistance to Support Mexico’s Judicial System Reform

Mexico continues to undergo a change from an inquisitorial judicial system to an adversarial model.⁴⁶ Although the transition appears to have resulted in improvements, such as due process and transparency, many challenges associated with adjustments to the new system remain.⁴⁷ These include a backlog of cases, gaps in training, and greater demands on the police and prosecutors to investigate complex cases in a more transparent system.* To the extent possible, the U.S. government should offer support to Mexican criminal justice authorities to build their capacities under the new system to prosecute drug production and trafficking.

4.3.3. Reduce the Illegal Exportation of Firearms from the United States to Mexico

The illegal flow of guns from the United States to Mexico represents a major contributor to drug-related violence in the country. As multiple interviewees explained, tackling the southbound trafficking in firearms represents one of the principal requests that Mexico makes of the United States. The U.S. government should make a concerted effort to respond proactively to these requests because it offers an opportunity to facilitate a joint strategic relationship with Mexico on matters related to organized crime. One possible solution is to put forward the resources necessary to allow the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) to investigate and prosecute illegal firearm purchases and exportations, including intensifying data collection and information exchange with Mexico on flows of firearms. These resources should also include greater ATF support in Mexico to track and trace guns and more technical support to Mexican law enforcement in reporting information on illegal firearms. Such efforts would help Mexico to better target criminals and build stronger criminal cases against firearm traffickers and encourage Mexico to improve border screening efforts, especially those using materiel purchased from the United States.

4.3.4. Assess Existing Capacities of the Mexican Military, and Remove Barriers to Providing Technical Support

Presently, the Mexican military is charged with supporting an expanding counterdrug mission for which it was not designed. The Commission believes that available material and human resources might not be enough to successfully complete more missions, such as port screening. Because Mexico is increasingly using the military for port and border security, there could be regulatory barriers to using U.S. funds and assistance when it comes to POE and cargo screening. The Department of State and DHS should assess the needs of the Mexican military’s

* According to one interviewee, the use of oral hearings might also make witnesses more reluctant to come forward, further complicating the prosecution’s position (interview 30, August 23, 2021). Also see Gina Hinojosa and Maureen Meyer, *Mexico’s Rule of Law Efforts: 11 Years After Criminal Justice Reforms—Challenges and Opportunities for the López Obrador Administration*, Washington, D.C.: Washington Office on Latin America, November 13, 2019, and World Justice Project, 2019.

mission in border and port security and revise existing rules as necessary to ensure that U.S. assistance improves the capacity of key partners in Mexico.

4.3.5. Support Targeting of Illegal Finances and Criminal Networks Across North America

The increasingly complex nature of how criminal networks operate in many illegal markets makes targeting illegal financial proceeds an attractive ancillary goal. People with knowledge of the situation highlighted Mexico's efforts to freeze assets of known criminals as a useful tool. Mexican authorities face challenges when it comes to seizing assets of frozen accounts, but increased cooperation across law enforcement and regulatory bodies in Canada, Mexico, and the United States will be needed to strengthen financial criminal investigations aimed at TCOs that illegally import chemicals from Asia using front or shell companies or other groups that financially gain from the trade in drugs.

4.3.6. Support the Strengthening of Pharmaceutical Regulatory Capacity in Mexico and Efforts to Root Out Corruption to Prevent Domestic Diversion and Promote Robust Public–Private Partnerships

The relevant Mexican authority, the Federal Commission for the Protection Against Sanitary Risks or (Comisión Federal para la Protección contra Riesgos Sanitarios, or Cofepris), lacks resources and enforcement powers to undertake meaningful inspections of licensed operators, conduct investigations, and penalize regulatory violations. More recently, allegations of corruption of Cofepris⁴⁸ suggest that there could be additional concerns beyond lack of capacity. The U.S. government should support the Mexican government's efforts to strengthen the agency and root out corruption to enhance its ability to exert effective regulatory control over the pharmaceutical industry in Mexico. The U.S. government, through the State Department, should promote and assist efforts to fight corruption and build robust civilian institutions. Greater vetting of critical positions within civilian regulatory authorities in Mexico is required.

At this time, there is no evidence to indicate that domestic diversion of chemicals in Mexico is a major contributor to the issue of synthetic drug production there. That said, recent allegations of corruption at Cofepris of issuing importation licenses for fentanyl that was to be diverted to TCOs suggest that some amount of diversion could occur.⁴⁹ The Mexican chemical industry represents one of the possible or potential sources of precursors for TCOs should they experience a disruption of their current sources in the PRC. In addition to helping strengthen the regulatory environment, the U.S. government should expand support to its Mexican counterparts in implementing a public–private partnership model with the chemical industry. Under this model, the industry would be entrusted with self-regulation and participation in solutions to mitigate chemical diversion risks.

4.3.7. Support Mexican Authorities' Ability to Detect Fentanyl Precursors at Ports of Entry, Fentanyl in Outbound Post, and Inbound Bulk Cash and Firearms

Mexico is not only the primary producer of illegally manufactured fentanyl; it is also an important destination for firearms and cash that support TCO activities. Efforts are needed to support the Mexican government's screening and interdiction capacities aimed at multiple threats. The U.S. Department of State has been operating a canine program in collaboration with Mexican law enforcement authorities.⁵⁰ The program has been successful and well received, but it is currently limited in scope, and extending the capability to additional locations would be beneficial. Whether dogs can be trained to detect the base structure of many precursor chemicals used to manufacture fentanyl is not known, but CBP should investigate this. Such a capability would likely help detect certain precursor chemicals shipped to Mexico by maritime or air cargo (especially air cargo from the PRC) and enhance cargo screening at POEs.

Additional programs can support Mexico's efforts, including the UNODC–World Customs Organization (WCO) Container Control Programme (CCP), which is an international program run by UNODC and the WCO to help countries build their POE capacity to detect and interdict shipping containers used for illegal activities, including drug trafficking.⁵¹ The CCP is operational in some Latin American countries,⁵² and Mexico is in negotiations to possibly participate.⁵³ Mexico's participation in the program and commitment to international cooperation within its framework should receive support from the U.S. government. Mexico's recent efforts to put the military in charge of import screening at POEs (both land and maritime) have been put in place because of corruption allegations against civilian institutions.

U.S. federal law enforcement does not perceive TCOs' use of Mexico's postal service, Correos de México, for shipments within Mexico or across the southwestern U.S. border as a concern today. However, in case trafficking strategies shift in the future, the U.S. government should help build Mexico's capacity to monitor its postal system, which remains underdeveloped. The U.S. government should extend technical and financial assistance to scale up Correos de México's detection capabilities in the event that it becomes an important drug-trafficking pathway.

Last, the flow of arms and bulk cash that TCOs use to undermine the state require attention. However, Mexico's customs authority, Servicio de Administración Tributaria (SAT, or Tax Administrative Services), could be better equipped to target or interdict contraband. Rather, its mission is one of tax and duty collection. Mexican authorities need more and better law enforcement training and an expanded focus to successfully disrupt the southbound flow of firearms and cash into the country. The State Department should encourage Mexico to build out the necessary capacities through a joint security framework. The Commission identified several successful efforts of joint investigations and operations that should be used as a model for developing such a framework.

4.3.8. Intensify Work with Mexican Counterparts to Improve Their Drug and Chemical Identification Reporting for Seizures and Transmission of Physical Samples of Seizures to the United States

Mexican authorities have a limited ability to correctly identify the substances they seize, particularly with respect to emerging novel psychoactive substances or their precursors. U.S. authorities should increase their assistance and financial support to their Mexican counterparts to build the necessary drug identification capabilities and, by extension, to strengthen the reporting of seized drugs that should be made available to U.S. and international authorities. As part of intensified collaboration on drug identification, the U.S. government should work with its Mexican counterparts to facilitate the legal transmission of samples they have seized to be shared with DEA's Special Testing and Research Laboratory.

The People's Republic of China

Central authorities in the PRC should be commended for their 2019 generic scheduling, but they need to take industry oversight and enforcement of rules more seriously. Authorities will need to penalize those who break rules or continue to engage in illegal activity. Further, additional technical assistance and coordination with U.S. and foreign inspectors in the PRC are needed to strengthen regulatory compliance and reduce opportunities for criminals to operate in the open. But the PRC must be encouraged to commit sufficient resources to monitor businesses and ensure adequate controls and restrictions on exports. Greater diplomatic efforts directly with the PRC and through other multilateral bodies will be needed to encourage the PRC to improve oversight and compliance of large sectors.

4.4. Establish a U.S. Policy Framework to Engage with the People's Republic of China to Improve Oversight and Enforcement of Its Chemical and Pharmaceutical Industries

The Commission has determined that one fundamental part of the problem is the weakness in industry oversight and investigations in the PRC—a view consistent with the earlier discussion on existing supply chains and the views of numerous consulted experts. PRC efforts to improve regulatory oversight and investigate bad actors have been documented, but enforcement devolution and lack of investigatory and regulatory capacity present persistent problems.

4.4.1. Dialogue with the People's Republic of China to Commit to Improve Oversight and Investigation of Chemical and Pharmaceutical Sectors

A lack of oversight capacity and effective regulations over large profitable industries in the PRC contributes to the supply of synthetic opioids and precursor chemicals. Better industry compliance and adherence to rules will require continued engagement with the national government* to build in proper incentive structures and regulatory alignment—including central authorities' efforts to prosecute local authorities who turn a blind eye to violators. Other rules need to be adopted to strengthen these efforts (described in detail with other actions), but authorities in the PRC should continue to pursue efforts to enhance oversight by central authorities in NMPA, the National Narcotics Control Commission, and relevant officials in the Ministry of Ecology and Environment who oversee chemical manufacturers. The United States should work with the PRC's central government at the political level to ensure that the PRC signals its willingness to expend more resources and make a serious effort at improving regulatory enforcement. Efforts should include identifiable measures over time (e.g., increases in budgets of central authorities, hiring and retention of inspectors within key national agencies and regulatory bodies, numbers of inspections by central authorities, increases in unannounced inspections) to ensure that progress is being made.

4.5. Press the People's Republic of China to Adopt Clear Rules to Improve Regulatory Oversight and Enforcement over Industries, Control over Movements of Chemicals and Related Equipment, and Other Restrictions on Exports

Several clear rules that are enforced could improve industry compliance and deter some firms from exporting synthetic opioids and related chemicals from the PRC. Possible actions include increasing levels of inspections, especially unannounced inspections, which continue to be few compared with the country's share of violations, which is higher than those of other countries.

4.5.1. Encourage the People's Republic of China to Improve Inspections and Investigations of Its Chemical and Pharmaceutical Sectors, and Promulgate and Publicize Additional Reporting Rules and Requirements

Large sectors with little regulatory oversight contribute to the continued export of chemicals used in the illegal manufacture of synthetic opioids. Additional rules, reporting requirements, and enforcement mechanisms will be needed to improve regulatory compliance by firms in the PRC. U.S. bodies should encourage PRC authorities to commit to more-frequent inspections of chemical and pharmaceutical firms, including unannounced inspections with international observers, and require that regulators in the PRC make and enforce rules governing the movement of chemicals, review company logs of employee use of laboratories, and regularly analyze records on

* Several interviewees discussed the limitations of engaging directly with subnational or local authorities. The PRC would likely require engagement with central authorities.

stocks and inventory of chemicals, among other best regulatory practices. Greater efforts need to be made to improve transparency of industry violations, including naming, shaming, and sanctioning firms that continue to violate best practices. The U.S. Department of State should work directly and alongside other partner nations and multilateral institutions (e.g., the European Union [EU], WHO) to encourage the PRC's central government to take a greater role with inspections. FDA and DEA should offer additional technical support to help improve regulatory structures, as well as enhance and participate in inspections or investigations of those violating rules, especially as they pertain to exports of chemicals used in the manufacture of synthetic opioids.

4.5.2. Request That the People's Republic of China Extend Controls over Chemicals That Have Been Controlled in North America and Have Little Use Other Than Manufacture of Synthetic Opioids

Historical experience with the production of synthetic drugs in the PRC until the class-based scheduling of fentanyl in 2019 suggests that, when PRC authorities announce a control over a new chemical or drug, producers in the PRC cease production. In effect, chemical and pharmaceutical producers do comply with these rules but easily circumvent them by developing new chemicals that are sometimes structurally similar or can be easily modified to then be transformed into the necessary precursor or finished drug. Extending controls over chemicals with little use other than synthetic opioid manufacture can affect producers' decisions and complicate some synthesis routes for unskilled or novice chemists who have relied on more-straightforward synthesis routes. The U.S. Department of State should redouble efforts to engage the PRC on this matter. That said, producers' likely move to common precursors could limit the effectiveness of precursor control efforts, which will, in turn, put a greater emphasis on industrywide regulatory compliance and best practices, as well as other reporting requirements to identify and investigate chemical producers and exporters.

4.5.3. Encourage the People's Republic of China to Mandate Adoption of Better Business Practices Within the Chemical and Pharmaceutical Sectors, Such as Know-Your-Customer Rules and Export Restrictions for Chemical and Pharmaceutical Producers and Vendors, and to Investigate Those That Violate Rules

The PRC has no requirement for chemical or pharmaceutical manufacturers to conduct even minimum due diligence to ensure that exported chemicals are not being used for illegal manufacture of synthetic opioids. In addition, there are no export restrictions on chemicals or other drugs that are illegal or controlled in destination countries. Some firms in the PRC are actively seeking buyers, while others manufacture chemicals upon request. The U.S. Department of State should intensify efforts to encourage PRC authorities directly and through other multilateral forums and institutions to adopt rules to ensure good business practices, such as know-your-customer rules and other bans on exportation of drugs that are controlled in the destination countries.

4.5.4. Lobby the People's Republic of China to Adopt Export Controls on Machinery and Other Equipment Used for the Manufacture of Counterfeit Tablets, in Line with Article 13 of the 1988 UN Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances

Unlike the United States, the PRC has no specific legislation to control access or export of tableting machines or related equipment or inputs, such as dyes or stamps. The U.S. Department of State should work directly with the PRC on this matter to effectuate the appropriate controls over the manufacture, transfer, and export of equipment that can be used for tableting. The Commission found many online vendors that would sell varying types of tableting equipment with few questions asked. Promulgating a rule that limits exportation and directing more resources to investigating online sales could help deter some manufacturers or exporters of these items.

4.5.5. Improve Information Reporting and Exchange Within the People's Republic of China on Chemical Exports

Encouraging the PRC to adopt broad export reporting requirements for all chemical shipments could help create the necessary paper trail for rule violations (e.g., mislabeling) that could allow regulators and law enforcement to improve targeting of violators. Currently, exports are recorded using the Harmonized Commodity Description and Coding System, which the WCO maintains. Extending the reporting requirement and information-sharing on the export of any chemical to appropriate authorities in the PRC (such as the Department of Solid Waste and Chemicals within the Ministry of Ecology and Environment) adds checks that allow for follow-up investigations should a suspected fentanyl precursor be seized overseas. The U.S. Department of State should enhance efforts to encourage PRC officials directly and through other multilateral forums and institutions to adopt additional export reporting rules for all chemical exports and to initiate investigations for those exporting chemicals without the proper paperwork or mislabeled shipments.

4.5.6. Enhance and Expand the Food and Drug Administration's Cooperation with People's Republic of China Counterparts and Increase the Number of Food and Drug Administration Personnel Stationed in the People's Republic of China

In recent years, FDA has increased its efforts to engage PRC counterparts. Since 2018, FDA's Office of Criminal Investigations has worked to identify areas of potential cooperation. FDA believes that greater cooperation through that office can improve joint criminal investigations, greater information-sharing, enhanced technical assistance, and more-direct and regular communication with local law enforcement and regulatory authorities.⁵⁴ FDA, with support from the U.S. Department of State, should enhance efforts to engage with its counterparts in the PRC to further these efforts while prioritizing its understanding of opioid production in that country to aid in further regulatory efforts aimed at possible rule breakers. Additional personnel, including special agents from the Office of Criminal Investigations, and resources should be directed to the PRC to aid in inspections and cybercrime training and investigations to target online vendors and chemical manufacturers.

4.5.7. Support the People's Republic of China with Improvements to Screening at Ports of Exit

Personnel at PRC ports need better detection tools and training.⁵⁵ CBP has been working with partners abroad to equip and train customs officials to use canine units trained to detect fentanyl. Efforts should be made to extend this to PRC authorities monitoring key maritime and air ports of exit identified by U.S. authorities, helping them to detect and seize fentanyl precursors. Currently, exporters are using legitimate commercial shipping systems to export fentanyl precursors but appear to conceal shipments by mismanifesting or mislabeling. Canine units might target chemical exports to destinations in North America to detect those that might include precursor chemicals. Some have documented that the PRC's drug detection capabilities are limited in coding unification and lack of sufficient hardware solutions.⁵⁶ Other detection solutions should be offered to aid the PRC to this end, such as the latest referent libraries to improve and enhance targeting efforts. DEA, in exchange for samples of synthetic opioids detected in the PRC, should find ways to share information gleaned from its FSPP to enhance export screening and detection.

Other Countries

Although the PRC is presently an important source of precursor chemicals used in the illegal manufacture of fentanyl in Mexico, India also has large chemical and pharmaceutical sectors that are known to export synthetic drug precursors to trafficking organizations in Mexico. It could be only a matter of time before illegal production migrates to India or elsewhere or if emerging use of illegally manufactured synthetic opioids expands outside North

America. The United States will need to continue to work with other countries to enhance regulatory oversight and monitoring of chemicals.

4.6. Expand Engagement with Other Countries to Facilitate Information-Sharing and Promotion of Best Practices to Reduce Supply and Demand of Illegally Manufactured Synthetic Opioids, Especially in Countries Most Likely to Experience Such Problems in the Near Future

The illegal production and use of synthetic opioids is a growing public health and security concern for the United States, Canada, and Mexico. Other countries, especially those with large illegal heroin markets or that lack the institutional capacity to deter illegal production, are at risk because traffickers could relocate operations or begin to distribute cheaper and more-potent alternatives to meet demand for opioids. The United States should take a leadership role in engaging with other countries that are likely to experience worsening problems associated with illegal production or use of synthetic opioids. This action can better inform an understanding of the problem by sharing information to support investigations of TCO operations or legitimate sectors that face minimal scrutiny.

4.6.1. Enhance Information-Sharing Partnerships with Other Partner Nations Focused on Law Enforcement Intelligence Sharing and Support for Investigations

Canada and the United States have been working closely on identifying new synthetic opioids, sharing seizure samples and other relevant information to enhance transnational investigations. According to information presented to the Commission, customs agencies in Europe aid in facilitating seizures of synthetic opioids as drugs transit through the legal commercial systems. U.S. Department of State and federal law enforcement agencies should enhance additional information-sharing partnerships with partner nations, including sharing information on the identification of new synthetic opioids, precursors, or other related material and extending some of this information to PRC and Mexican authorities to effectuate arrests or prosecution where appropriate.

4.6.2. Expand Engagement with Other Countries to Avoid Expansion of Illegal Manufacturing of Synthetic Opioids, and Encourage Other Potential Sources of Precursors to Adopt Similar Controls over Chemicals

India is another likely source of fentanyl precursors used in illegal manufacture, particularly should there be an effective reduction in the trade of precursors from the PRC. Several precursor chemicals that are not controlled in India have been intercepted at POEs in Mexico. Drawing on existing partnership mechanisms, such as the U.S.–India Counternarcotics Working Group, the State Department should work with India to bring other precursors under control to harmonize those with countries in North America. Myanmar, once known as Burma, is a country with known illegal production of synthetic drugs that, according to recent drug seizure information, includes precursors that are used in the synthesis of fentanyl. The Department of State, in conjunction with relevant agencies, such as FDA and DEA, should continue to engage with countries to prioritize monitoring ongoing developments and offer technical assistance to deter the exportation of fentanyl, synthetic opioids, and other precursor chemicals. To illustrate, FDA’s Office of Regulatory Affairs and Office of Criminal Investigations have engaged bilaterally with India and worked joint investigations since 2018, but this relationship is new and can be strengthened to prevent the export of chemicals and pharmaceuticals used in the illegal supply of synthetic opioids. With regard to Myanmar, the U.S. Department of State and DEA will need to continue to monitor ongoing political developments in that country because they could affect U.S.–Myanmar policy. DEA should also attempt to ascertain risks of fentanyl production in other countries that have large chemical industries and lack enforcement capacity.

4.6.3. Promote and Fund Evidence-Based Demand-Reduction Best Practices and Interventions Abroad Aimed at Synthetic Opioids

Demand for illegally sourced synthetic opioids in other countries, such as Canada and Mexico, contributes to global supply of these drugs. Likewise, greater efforts to measure the population at risk of exposure to fentanyl (i.e., existing populations with OUD or others who might regularly consume prescription medications in tablet form) can help policymakers abroad anticipate and better respond to burgeoning overdose crises. The Commission was told of the growing demand for synthetic opioids in Mexico, the lack of available treatments, and the limited capacity to estimate the size of the user base. The U.S. government should share best practices with partners that might be experiencing the emergence of illegally supplied synthetic opioids. Needed actions include expanding the Department of State's efforts, through the Bureau of International Narcotics and Law Enforcement Affairs, to provide additional technologies and tools to develop epidemiological networks to facilitate data collection, medication therapies, overdose-reversal drugs and appropriate training in their use, and other resources.

PILLAR 5: RESEARCH AND MONITORING

Limited ability to amass and share information about emerging threats and market trends in a timely manner impedes development of relevant mitigation policies. Current systems and approaches to data collection and analysis are inadequate and do little to contribute to developing and maintaining a holistic understanding of evolving threats, market trends, and policy impact in a timely manner. Further, many data systems are not well positioned to provide useful and essential information about the synthetic opioid problem. For example, overdose death records lack sufficient granularity about drug type and report data with substantial time lags of sometimes a year or more. Overall, the U.S. federal government will need to strengthen its ability to understand the trends in illegal supply of synthetic opioids to address the problem more effectively. Policymakers, administrators, and operational leaders need more-insightful information derived from reliable, relevant, and integrated data sets.

5.1. Direct Federal Efforts to Improve Understanding of the Illegal Supply of Synthetic Opioids

Limited understanding of emerging threats and market trends at various levels and lags in data reporting impedes development of relevant mitigating policies. State and local drug forensic laboratories sometimes employ different analytical standards and reporting protocols, confounding a proper regional analysis of supply. Greater consolidation of drug seizure data reported by federal law enforcement and a universal use of a centralized system would facilitate more-accurate reporting in trends and improve understanding of the problem. Current data-collection and analysis systems involving drug seizures in DEA databases are not being utilized to their fullest extent. Additionally, DEA's Special Testing and Research Laboratory faces resource constraints impeding its ability to analyze synthetic opioid samples to better understand emerging synthesis routes or inputs used. Overall, U.S. drug policy data-collection and analysis systems must be enhanced to eliminate information gaps and present real-time information for analysis. The U.S. Intelligence Community (IC) continues to improve its understanding of the illegal supply of synthetic opioids but has emphasized such efforts relatively recently. Generally, the IC provides support to foreign partners, U.S. law enforcement, and other U.S. agencies involved in understanding and disrupting synthetic opioid trafficking. Some of those intelligence-informed insights can be used to strengthen disruptive efforts.

5.1.1. Adopt a Scientific, Timely, and Methodological Approach to Analyzing the Illegal Supply of Synthetic Opioids and Related Chemicals

Existing drug policy agencies that have traditionally focused on the supply of drugs lack either the critical data needed to understand emerging trends or the appropriate research-driven approach to analyzing them. Further,

relevant seizure and public health data are scattered across several agencies that do not regularly communicate, and data lags remain a persistent challenge. For example, DEA's seizure data in STRIDE/STARLIMS and its Heroin Domestic Monitor Program are not being leveraged to understand changes in purity-adjusted prices, nor is the information always shared with the appropriate policymakers or analysts at ONDCP in a timely and actionable manner. DEA must improve its data-collection approaches (discussed in greater detail in the section on action 5.1.5) and analyze these data with greater rigor. Similarly, ONDCP should maintain a research unit to analyze ongoing drug market trends made available from DEA and other relevant law enforcement and public health data sources. Congress might need to allocate additional resources to these ends.

5.1.2. Increase Resources for National-Level Collection and Analysis of Intelligence on Foreign Illegal Manufacturing of Synthetic Opioids and the Production of Strategic Insights to Policymakers and Other Partners

The nature of the illegal supply of synthetic opioids presents unique challenges that require better intelligence collection and analysis on legal companies or individuals who illegally manufacture chemicals or the electronic means with which they communicate to facilitate transactions. This analysis is needed not only to support actionable efforts but also to provide strategic insights about dimensions related to supply. Here, the IC can offer enhanced strategic or analytical insights into operations or modus operandi of chemical producers overseas (e.g., production throughput) to policymakers and law enforcement agencies to better inform the overall picture of supply of synthetic opioids or related chemicals, as well as support broader law enforcement and judicial efforts. Intelligence can also support an enhanced understanding of corruption in other countries that challenges the rule of law and efforts by authorities in those countries to properly restrict access to synthetic opioids and related precursor chemicals for legitimate purposes.

5.1.3. Incentivize State and Local Laboratories to Report to the National Forensic Laboratory Information System and Strengthen Reporting Standards

Reporting to NFLIS is voluntary, and standards and protocols, although they have improved in recent years, can be further enhanced with federal assistance and resources. The use of grants, through DOJ, should be used to attract additional labs that do not report to NFLIS and help currently participating labs by strengthening their analysis protocols and data management systems or otherwise improve the means and measures they use to report to NFLIS. Efforts should be made to strengthen reporting of synthetic opioid observations, including reporting on purity, formulation, and weight in standardized ways to allow better comparison across jurisdictions.

5.1.4. Expand the Use of Retail Drug Market Monitoring, and Increase the Focus on Illegal Transactions of Synthetic Opioids

The DEA's Heroin Domestic Monitor Program used to collect many retail-level sales of heroin in domestic markets and was crucial for assessing purity-adjusted prices of heroin. The program has not issued a report since 2018 and has since ended.* Reviving this program with local law enforcement participation and expand its scope to include fentanyl and fentanyl-related compounds or other synthetic opioids sold in retail markets, especially counterfeit tablets, could help improve the overall understanding of how drug markets are evolving (e.g., in terms of prices, formulations, chemicals) and responding to supply-side interventions or disruptions, closing some law enforcement intelligence gaps. Additional support from Congress and further efforts should be made

* The end of DEA's Heroin Domestic Monitor Program appears to have created a gap in law enforcement information; see Gulf Coast High Intensity Drug Trafficking Area, *2021 Drug Threat Assessment*, June 1, 2020.

to report on the different purities of multiple drugs in seizures. Although it can be expensive to maintain, this type of monitoring is necessary to better understand how the arrival of fentanyl and other synthetic opioids affects heroin markets.

5.1.5. Increase Support for the U.S. Drug Enforcement Administration's Special Testing and Research Laboratory, and Expand the Capacity of Its Fentanyl Signature Profiling Program

The laboratory lacks sufficient resources, resulting in delays in analysis of specimens and issuing of analytical reports. With additional support from Congress, DEA should direct more funding to the laboratory and expand the FSPP to increase the number of seizures analyzed and the level of details reported. Reports should be disseminated to the appropriate law enforcement channels on a regular schedule. The FSPP is an important tool to help understand trends in synthetic opioid production and the techniques used in products seized in the United States. The program's ability to undertake analyses should be bolstered in two ways:

- First, with the exception of Canada, the program typically does not have access to actual samples seized in key foreign countries, such as the PRC and Mexico, and must rely on documentation provided by foreign counterparts. Enabling access to samples from abroad would represent an important boost to the scope of the program's analyses.
- Second, the program's capacity should be increased so that, in addition to routine analyses of samples, the program can dedicate more resources to actively investigating emerging phenomena, such as novel synthesis routes, to help ensure their timely incorporation in the program's analyses. Capacity expansion should include hiring more full-time chemists or other employees with science degrees and making them available to analysts and investigators who can consult on specific cases involving new drugs.

5.1.6. Consolidate Reporting of Seizure Data Involving Synthetic Opioids Specifically, but New Psychoactive Substances More Generally, Across Governmental Agencies

To reduce double or triple counting and to improve the detection and awareness of the incidence of new drugs, ONDCP and federal law enforcement agencies should consolidate seizure events across reporting agencies. Each event record should include weight of seizure, location, date, and other circumstances surrounding these seizures of synthetic opioids. An effectively consolidated database of synthetic opioid-involved seizures into which all federal law enforcement entities report could illuminate how markets are trending. These data should also be shared with the appropriate policy-focused entities within the U.S. federal government, including ONDCP. Additional efforts should be made to increase reporting on the purity levels of drugs reported in seizures and to encourage all federal, state, local, tribal, and territorial law enforcement agencies to report to a centralized seizure database.

5.2. Analyze Emergent Trends in Drug Markets and Related Behaviors Using a Systematic and Standardized Approach

Current U.S. public health and drug-use data systems are not well suited for collecting information on emerging trends and will need to be expanded or adapted to new problems. Many U.S. states and other local authorities report necessary data on overdose deaths to monitor drug market trends differently, sometimes using different analytical standards or protocols, and this variation limits the ability to achieve a robust understanding of trends. Further, CDC codes synthetic opioid overdose deaths using a single poisoning code, which limits the ability to identify the type of synthetic opioid involved (e.g., tramadol, carfentanil, or some other novel synthetic opioid). Access to drug market data is restricted, limiting localities and states to infer from what federal authorities provide. Improving transparency in measures can offer more-direct involvement and insights for localities to respond to emerging drug threats.

5.2.1. Develop and Promote the Adoption of National Forensic Standards

There is currently no national system of forensic analysis standards. If adopted, and required by relevant state licensing bodies, such standards would greatly contribute to ensuring data quality and comparability across states and across practitioners.* Federal funding, grants, oversight, and collaboration with state, local, tribal, and territorial agencies can help overcome the issues resulting from the patchwork system of coroners and medical examiners.⁵⁷ CDC has been working to improve these efforts, but additional funding and other federal requirements will be needed to reach more reporting sources, such as local coroners and medical examiners.

5.2.2. Provide Greater Granularity and Timeliness in Overdose Death Reporting

Currently, the National Vital Statistics System data maintained by CDC follow International Classification of Diseases, tenth edition (ICD-10) multiple-cause-of-death codes without any additional disaggregation presented publicly or to researchers. As a result, all synthetic opioids other than methadone are placed in the same T-40.4 code, which, in addition to fentanyl and its analogues, covers such drugs as tramadol⁵⁸ and even semisynthetic buprenorphine.⁵⁹ Greater granularity would enable better differentiation across individual substances involved in drug overdose deaths and thus a better understanding of ongoing trends in drug-related harms as they pertain to shifting markets.[†] Further, final overdose death data become available only with a substantial time lag. Greater timeliness in the reporting of these data is needed to help policymakers and practitioners obtain a more actionable understanding of the nature of the challenge.

5.2.3. Expand Access to Existing Data by Researchers, State and Local Government, and Other Interested Stakeholders

Steps should be taken to help ensure that data collected on the opioid crisis and related topics are easily accessible to various consumers of information with the aim of improving research efforts, policy, and practice.[‡] ONDCP and HHS should improve access to deidentified and nonsensitive data to facilitate local efforts and research, including (1) improving data user-friendliness and compatibility via common formats, (2) reducing delays and streamlining access procedures for data not made routinely publicly available (e.g., access to mortality microdata or data on lab sample-level data on seizures and testing), and (3) consolidating data from various sources into single data sets (e.g., all-payer claim databases bringing together data across various payers).

* Such agencies as SAMHSA and the National Institute of Standards and Technology have developed recommendations for guidelines and standards in this area, which should serve as the basis of future efforts (Bruce A. Goldberger, Jane Carlisle Maxwell, Anthony Campbell, and Bonnie B. Wilford, “Uniform Standards and Case Definitions for Classifying Opioid-Related Deaths: Recommendations by a SAMHSA Consensus Panel,” *Journal of Addictive Diseases*, Vol. 32, No. 3, 2013; Medicolegal Death Investigation Subcommittee, Organization of Scientific Area Committees for Forensic Science, “Recommendations for Medical Examiner/Coroner Drug-Related Death Investigations,” February 14, 2018).

[†] Svetla Slavova, Chris Delcher, Jeannine M. Buchanich, Terry L. Bunn, Bruce A. Goldberger, and Julia F. Costich, “Methodological Complexities in Quantifying Rates of Fatal Opioid-Related Overdose,” *Current Epidemiology Reports*, Vol. 6, No. 2, 2019. Relevant subcategories exist in the ICD-10 classification hierarchy, with T.40.41 for fentanyl and fentanyl analogues, T.40.42 for tramadol, and T.40.49 for all other substances under the T.40.4 code. However, this information is not available in the CDC death data.

[‡] For an overview and assessment of selected data sets pertaining to the opioid crisis, including access considerations, see Rosanna Smart, Courtney Ann Kase, Amanda Meyer, and Bradley D. Stein, *Data Sources and Data-Linking Strategies to Support Research to Address the Opioid Crisis: Final Report*, submitted to Office of Health Policy, Assistant Secretary for Planning and Evaluation, HHS, Washington, D.C., September 2018.

5.3. Utilize Novel, High-Frequency, and Real-Time Systems to Enhance Market Surveillance

New drug threats will require new data-collection and analysis systems. Currently, the United States does not have a robust and systematic early-warning system found in other advanced countries. The National Drug Early Warning System (NDEWS) relies on existing NIDA grants to universities that operate sentinel sites. NDEWS is helpful to drug policymakers and practitioners, but a more permanent, multidisciplinary system is more likely to succeed over time, whereas the current model relies on renewing grants.

Other countries, including the PRC and Mexico, have either piloted or expanded the use of novel near-real-time drug-use data-collection systems, such as wastewater testing. Currently, the United States has no systematic wastewater testing or analysis program for drugs. For decades, wastewater analysis has shown to offer near-real-time measures of drug use in Europe and, more recently, in Australia. Absent such a system, officials must rely on other outcome data, such as ED events or overdose deaths, that lag considerably.

The United States used to rely on the Arrestee Drug Abuse Monitoring (ADAM) program and the Drug Abuse Warning Network (DAWN) to assess market trends and the emergence of new drugs. In the past ten years, both tools have been discontinued. The lack of additional measures of the population of a subset of people who use drugs or those who might consume new drugs, limits more-robust understanding of emerging trends. Last, given how quickly markets can become exposed to synthetic opioids, gaps in knowledge about novel sourcing, supply decisions, and other drug use-related behaviors should be closed through enhanced qualitative research with drug market participants and collection of measures at point of use.

5.3.1. Establish a National Early-Warning System

NIDA has worked to professionalize an early-warning system through grant mechanisms to universities across the United States.⁶⁰ However, U.S. drug policy needs a routinized national early-warning system, with appropriate funding levels, that directly involves ONDCP for the exchange of timely information on new substances, trends, and other features with public health and public safety implications observed in drug markets. The EU Early Warning System on New Psychoactive Substances can serve as a model for such an endeavor.* Continued federal efforts could help improve early-warning indicators (see discussions of additional actions, in this section), but this would require improved decisionmaking analysis from ONDCP officials who are well placed to cross-reference epidemiological data from sentinel sites with drug law enforcement data on seizures.

5.3.2. Introduce a Network of Sites with Regular Wastewater Analysis

Wastewater analysis is a drug market surveillance tool that tests for the presence of metabolites that the body excretes after consumption of various drugs in wastewater samples collected at water treatment plants or at various places in the public sewage system. Some jurisdictions use wastewater to test for COVID-19, so one possibility is to add detection of drug metabolites in effluent at wastewater treatment plants to take advantage of existing analytical work.⁶¹ Monitoring changes in the levels of various metabolites in analyzed samples can offer timely insights into trends in consumption of various drugs at the community level; serve as an early-warning system to detect unusual patterns of drug consumption emerging or previously unseen metabolites appearing, indicating the emergence of synthetic opioids in local markets; provide data that can be used to evaluate demand- or supply-reduction interventions; and be used to produce consumption estimates for a given area.

* The EU system consists of a multiagency, multidisciplinary network across the EU member states and works in conjunction with the EMCDDA and European Union Agency for Law Enforcement Cooperation (Europol). For more information, see EMCDDA, “Early Warning System on NPS,” webpage, undated a.

Wastewater analysis poses few confidentiality issues, produces results in near real time, can be conducted at a geographically granular level, and is less expensive than population surveys. Federal authorities, including ONDCP, CDC, and the U.S. Environmental Protection Agency should work to develop a systematic protocol for sampling and analyzing wastewater that adds screening requirements for drugs, such as fentanyl metabolites, and then implement this protocol in pilot program in selected water districts or public water systems. This program should be evaluated to determine whether it can or should be scaled to include additional sites across the United States through grants to public wastewater treatment systems. Wastewater analysis could even play a role outside the United States to detect the use or possibly the production of synthetic drugs.*

5.3.3. Resuscitate and Expand the Arrestee Drug Abuse Monitoring Program

ADAM was a monitoring program discontinued in 2013 because of budget constraints in which people who had been arrested and booked for any offense were offered the option of sitting for an interview and voluntarily submitting a urine sample for later analysis. Resuscitating ADAM would provide another surveillance and early-warning tool about the changing supply of illegal drugs and proliferation of novel psychoactive substances. This data collection can also yield important insights into market participants' behavior. DOJ and ONDCP should bring back and expand ADAM to improve estimates of the population of people who use illegally sourced opioids. Several years ago, the Bureau of Justice Assistance developed a plan for sampling American jails for a revised version of ADAM; however, DOJ failed to receive the funding needed to implement it. It is imperative that a renewed version of ADAM be incorporated into newer, more innovative systems that collect real-time data and be accessible to policymakers and researchers at lead agencies, such as ONDCP.

5.3.4. Establish a Nationwide Emergency-Department Urinalysis Network and Expand the Drug Abuse Warning Network

The collection of urine samples in EDs from people who have overdosed can be a valuable surveillance and early-warning tool. Such a system is being piloted by the Center for Substance Abuse Research at the University of Maryland as the Emergency Department Drug Surveillance program, with funding support from ONDCP. Pending its successful implementation, the pilot would be replicated in more locations nationwide. In addition, until its hiatus from 2011 until 2018, DAWN was an ED-based surveillance system that provided data at the national scale and for selected metropolitan areas on counts and trends in drug-related ED visits. SAMHSA is working on launching a new iteration of DAWN, in which 50 hospitals (about a tenth of the original revival plans) are being recruited to participate on a voluntary basis. Once it is fully operational, ensuring hospital participation and possibly expanding the reporting sample will be of utmost importance. It will also be important to assess and help ensure that the system is positioned to detect and monitor an increasingly complex supply of illicitly manufactured synthetic opioids. Relatedly, hospitals need to have the right protocols to test and detect the presence of synthetic opioid metabolites in tissue and fluid analyses. Data should be reported in a timely fashion. Similar to ADAM, the new version of DAWN should be made an integral part of an innovative real-time data-collection system.

5.3.5. Enhance Qualitative Work with Market Participants

Ethnographic research has generated important insights about market trends and related behaviors.⁶² Despite the contribution of such studies, many important questions remain. Examples of areas that merit further exploration

* The Commission was told that wastewater testing could be useful in detecting illegal drug production by monitoring effluent for certain chemical reagents or by-products of the production of fentanyl. It is unclear whether such detection is proven, but it might warrant additional investigation for its application in Mexico to aid in the detection of synthesis labs.

include the preferences and decisionmaking of buyers and sellers, the experiences of people who use drugs and their perspectives on existing and potential interventions, and the evolution and changes in the market and drug supply. In addition to informing strategies to tackle illegal drug supply and services for people who use drugs, qualitative work with market participants can also be a source of parameters for population estimates and longitudinal studies. NIDA and the National Institute of Justice should fund additional studies to enhance qualitative research about market participants and their related decisionmaking behaviors.

5.3.6. Have the National Institute on Drug Abuse Research Drug-Checking Services and Other Harm-Reduction Surveillance Tools

Drug-checking services are typically low-threshold services to check the composition of a consumer's street-acquired drugs. Although the Commission did not have sufficient information to take a position on drug-checking services, additional research is needed to determine whether such interventions can serve as important surveillance tools via either of two mechanisms (or both): (1) providing data on the composition of samples and associated properties, which offer a snapshot of what is being consumed (information not always available from law enforcement seizures), and (2) providing insights on how drugs are marketed at the retail level in near-real time. NIDA should investigate whether such research is warranted and what regulatory or legal barriers exist to funding such research.

SUMMARY OF ACTION ITEMS

The list of recommendations is robust and expansive, and it is understandably difficult to know where to start. To provide context for such decisions, the Commission assessed each recommendations across several dimensions:

- information on the level of the supply chain or market that the action affects (production, processing, export, import, wholesale, retail, or user)
- anticipated fiscal impact (low, medium, or high)
- the time frame for implementation (short [within six months], medium [within six to 24 months], or long [beyond 24 months])
- prioritization of the expected impact on reducing the harms caused by illegal synthetic opioid trafficking (low, medium, or high)
- the gaps and vulnerabilities addressed
- remaining challenges.

The grading of anticipated fiscal impact suggests in broad terms how much such an action is expected to cost (although costs can change over time):

- Simple rule changes that do not require additional reporting or programs are believed to be of low fiscal impact.
- Actions that require sustained programs or greater technical assistance are believed to be of medium fiscal impact.
- Those requiring substantial programmatic and long-term investments are likely to be of high fiscal impact.

At this time, it is not possible to assign dollar ranges. The relevant agencies will need to work with Congress to determine suitable amounts to implement actions.

In terms of the anticipated time frame,

- several of the actions can be undertaken in the short term, estimated to be less than six months. Some of those require filling key positions or redirecting federal efforts within existing programs or policies.
- medium-term actions are likely to take up to a few years to implement before generating measurable results or feedback.
- long-term actions could require more than a few years to implement or require substantial long-term or permanent engagement before results are realized.

A few actions need to be sequenced in a logical manner (i.e., improving interagency coordination and policy design prior to implementation). Given how quickly the problem can shift, some of these decisions will need greater coordination and review from an executive body.

Additionally, the Commission categorized actions according to their expected impact (e.g., high, medium, and low) in terms of reducing overdose deaths involving synthetic opioids or disrupting the flow of illegally manufactured synthetic opioids:

- High-impact priorities are those that are likely to have a greatest effect, based on evidentiary knowledge or experience, or might be required for implementation of U.S. policy related to this problem.
- Low-impact priorities are those that are likely to have a little direct or more-distal impacts on overdoses or disruption of illegal supply.
- Medium-impact priorities fall somewhere in the middle.

Actions can be examined across several dimensions—how long it will take to execute actions, their anticipated fiscal cost, and what impact they will likely have on illegal supply of synthetic opioids or their relation to overdoses. For example, closing gaps in rules related to AED for inbound packages is expected to be of low to medium fiscal cost and require short-term action but is likely to have a medium/low impact on the flow of illegally manufactured synthetic opioids. That said, the expansiveness of this problem and the many dimensions it touches will require a multipronged and simultaneous effort across several areas. Prioritization of impact and effort focuses on triaging a problem that will still require more medium- and long-term responses and continued engagement.

Table 6.1 reports these results.

Table 6.1

Summary of Recommended Actions

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
Pillar 1: Policy coordination and implementation						
1.1. Increase coordination of U.S. authorities, fill critical appointments, and ensure proper levels of staffing.						
1.1.1. Return ONDCP to the Cabinet, and enhance the structure of the U.S. drug policy apparatus to improve information-sharing and coordination.	All	Low	Short	High	Interagency coordination and information-sharing are lacking, and executive functioning in U.S. drug policy is limited.	Effectiveness requires continued support to ONDCP from the President and other agencies.
1.1.2. Improve coordination of tools across federal agencies to address trafficking.	All	Low	Short	High	Interagency coordination and information-sharing are lacking.	Effectiveness requires buy-in from participating agencies and strong coordinating mechanisms.
1.1.3. Ensure that key ambassadorships, the Foreign Service, U.S. law enforcement detachments abroad, and related staff positions are fully staffed and informed on matters relevant to a coordinated U.S. strategy on illegally supplied synthetic opioids.	All	Low	Short	Medium/high	The fact that key posts at various levels of the domestic and foreign policy apparatuses are vacant limits coordination and policy implementation.	The approval process can be lengthy if suitable candidates are not identified or nominations are held up, and finding and filling other key posts could be difficult.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
1.2. Assess and update the U.S. legislative and regulatory drug control frameworks.						
1.2.1. Consider extending appropriate structural controls over whole classes of emerging drugs.	Producer, exporter, importer, retailer	Low	Long	Medium/low	Listing drugs individually is complicated and time-consuming. Most new drugs are added to Schedule I, which might not be appropriate.	Statutory language needs to allow appropriate research and avoid causing unnecessary criminal justice consequences for low-level drug offenders. Building a new schedule for classes of drugs is one potential but difficult option to achieve this goal.
1.2.2. Monitor chemicals that are used in the illegal manufacture of synthetic opioids and control them when appropriate.	Producer	Medium	Long	Low	The changing nature of inputs used to manufacture synthetic opioids complicates the monitoring of existing chemicals.	Successful implementation of this action could depend on ensuring sufficient DEA capacity and will probably require long-term engagement.
Pillar 2: Supply Reduction						
Interdiction and Law Enforcement						
2.1. Enhance interdiction capabilities, especially in the mail and express consignment systems that facilitate trafficking of synthetic opioids.						
2.1.1. Close specific loopholes and address limitations to the interim final rule on AED requirements for inbound international mail.	Exporter, importer	Low/medium	Short	Medium	Mail-based trafficking of synthetic opioids from abroad has declined, but gaps in information requirements remain.	Limited resources overseas impede universal use of AED. CBP can help close the regulatory requirement, but compliance by foreign counterparts could remain limited.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
2.1.2. Mandate that private ECCs cooperate with domestic drug law enforcement, and require couriers to participate in building industry standards to improve screening algorithms for packages.	Importer, wholesaler, retailer	Low	Short/medium	Medium/high	No law requires private couriers to screen parcels in their systems. There are no industrywide automated predictive screening standards.	Private interests might push back on additional regulatory requirements and associated costs and might be reluctant to work closely with law enforcement.
2.1.3. Strengthen capacities for the U.S. Postal Inspection Service to identify, track, and disrupt mail-based distribution of illegally manufactured synthetic opioids that utilize the domestic mail system.	Importer, wholesaler, retailer	Medium	Medium	Medium/high	Domestic mail-based trafficking is a growing concern, and there are limits to existing resources within the postal system; there is limited understanding of how Mexican TCOs are using the domestic mail system.	There is limited capacity and unclear buy-in from other law enforcement agencies. The task-force officer program has not been formally evaluated; closing this vulnerability could be difficult because of constitutional protections; investigating and building cases takes time and requires additional federal law enforcement coordination.
2.1.4. Increase interdiction capabilities for air cargo shipments from the PRC to Mexico that land in the United States.	Exporter, importer	Medium	Short/medium	Medium/high	Vendors use air cargo flights from the PRC to Mexico to send precursors. These might not always be detected. Limited information-sharing or lack of appropriate funding could impede interdiction efforts.	Traffickers can adapt by moving to maritime or sourcing from other suppliers.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
2.1.5. Promote additional technological solutions to enhance border screening.	Exporter, importer	Medium	Medium	Low/medium	Detection of illegal drugs or input chemicals at ports of entry remains a challenge; novel noninvasive technologies could help address this gap.	Limited throughput or traffickers' countermeasures could continue to impede interdiction; there is a risk of people switching to more-harmful smuggling practices, such as body packing.
2.2. Bolster the capabilities and capacity of domestic law enforcement efforts to investigate illegal distribution of synthetic opioids.						
2.2.1. Strengthen referent libraries to facilitate the detection of emerging synthetic opioids.	Exporter, importer, wholesaler, retailer	Low/medium	Medium	Low	Some levels of law enforcement might not have the latest referent materials and field detection technologies.	Materials can become out of date with emergence of new synthetic opioids. Challenges of resources and training and use of equipment remain, and expected effects are unknown.
2.2.2. Fund and evaluate pilot efforts for local law enforcement to investigate overdose deaths.	Retailer	Medium	Medium/long	Medium/high	Overdose deaths are sometimes not investigated with the sense of urgency required to map patterns to identify the most-dangerous retailers; additional information can be obtained at overdose scenes to better determine the source or types of synthetic opioids consumed (e.g., fake pill versus powder).	Whether overdose investigations work in practice remains to be seen. There is a risk that increasing targeting will result in aggressive use of sanctions, generating additional harms.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
Restricting distribution of chemical inputs						
2.3. Work with private-sector stakeholders to implement systems to prevent drug traffickers from acquiring chemicals used illegally to manufacture synthetic opioids.						
2.3.1. Enhance oversight of reporting of chemicals leaving the United States or produced abroad by U.S.-held companies or foreign-based operations, and encourage proactive company reporting.	Producer	Low	Medium	Low/Medium	Gaps in oversight of foreign-produced chemicals limits insights into diversion outside the United States. In anticipating future threats, reporting requirements might need to be enhanced; industry might not be fully aware of the potential for diversion or sourcing of fentanyl chemicals.	The action could meet resistance from private industry as a new regulatory burden, particularly because it does not appear to target the main current source of input chemicals; absent credible enforcement alternatives, private industry might be reluctant to report suspicious activity, particularly if companies do not perceive the issue of synthetic opioids as concerning them.
2.4. Target distribution of synthetic opioids and related chemicals advertised online.						
2.4.1. Improve local law enforcement capabilities to support federal authorities with information on darknet sales.	Wholesaler, retailer	Medium	Medium	Medium	Federal authorities have the capacity to investigate darknet sales of synthetic opioids, and that capacity can be improved with information from local law enforcement. Currently, there are capacity limits to supporting federal efforts.	Training and education could be challenged by lack of buy-in from local law enforcement.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
2.4.2. Enhance efforts to screen online advertisements, and use sting operations to target traffickers sourcing precursor chemicals online and other vendors on the darknet.	Producer, exporter	Low/medium	Medium/long	Medium/high	Social media platforms facilitate online access to synthetic opioid advertising.	Law enforcement might need to be better informed on ways to analyze online platforms. producer countermeasures could challenge law enforcement.
Disrupting online sourcing of synthetic opioids						
2.5. With the help of private entities, reduce online advertising and sales.						
2.5.1. Expand social media self-monitoring to target and remove posts by unlawful drug or precursor suppliers and ask social media platforms to work with law enforcement to identify online vendors of precursor chemicals and finished synthetic opioid products.	Producer, importer	Low	Short	Medium	Social media do not appear to self-monitor drug-related content. Little information might be shared with law enforcement.	This relies on voluntary compliance by online platforms, which might not be forthcoming absent credible enforcement alternatives.
2.5.2. Encourage greater use of search engine indexing to remove or deprioritize ads for synthetic opioids and related materials.	Producer, Importer, wholesaler	Low	Medium	Medium/high	Foreign-based communication companies facilitate online access to synthetic opioid advertising.	This relies on online platforms' voluntary compliance, which might not be forthcoming absent credible enforcement alternatives; it is unclear how big an impact can be reasonably expected.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
2.5.3. Collaborate with foreign countries from which accounts operate that violate terms of service.	Producer, importer	Low	Medium	Medium	Foreign-based communication companies facilitate online access to synthetic opioid advertising.	This relies on voluntary compliance and cooperation with online platforms not based in the United States, which might be reluctant. It is unclear how big of an impact can be reasonably expected.
Tackling other functions and services used by TCOs						
2.6. Intensify efforts to counter TCOs' money laundering.						
2.6.1. Encourage the PRC to fully implement its AML framework and address other AML deficiencies.	Producer, exporter, importer, wholesaler	Low	Medium	Low	TCOs increasingly take advantage of services provided by Chinese money-laundering organizations; although it is relatively strong, the PRC's AML framework has deficiencies.	This requires that the PRC be willing to tackle the issue; the impact on disrupting drug-trafficking operations is indirect and could be very limited.
2.6.2. Provide support to enhance the effectiveness of Mexican AML efforts.	Producer, exporter, importer, wholesaler	Medium	Medium	Low	Mexican TCOs need to launder the proceeds from their operations; although Mexico is among international leaders on AML, deficiencies persist in its domestic AML efforts.	This requires that Mexico be willing to tackle the issue; its impact on drug-trafficking operations is indirect and might be very limited; it is subject to sensitivities similar to those of anticorruption and judicial assistance efforts.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
2.6.3. Enhance U.S. laws, regulations, and resources pertaining to financial tools aimed at drug trafficking and other crimes, and determine what regulatory and policy gaps remain for the cryptocurrency and payment processing industries.	Producer, exporter, importer, wholesaler, retailer	Low/medium	Medium	Low	Drug traffickers increasingly take advantage of novel tools to facilitate financial flows and money laundering. The existing U.S. legal framework needs to respond to this development.	The impact on drug-trafficking operations will be indirect and could be limited; synthetic opioids specifically do not present unique AML challenges that can be explicitly targeted.
Pillar 3: Demand reduction and public health						
Prevention						
3.1. Support evidence-informed efforts to reduce substance misuse and progression to SUD.						
3.1.1. Fund evidence-based prevention, and provide resources to evaluate new approaches aimed at different populations.	User	Medium	Long	Low	The current evidence base on prevention interventions is weak. Correspondingly, the availability of evidence-based practices is limited.	The time frame for any impact of prevention interventions on drug-related harms is very long. Prevention interventions do not address the issue of current harms stemming from synthetic opioids, although they can facilitate long-term benefits in reducing drug initiation and thus shrink the market.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
3.1.2. Expand and target health and social services to help reduce substance use and progression to SUD.	User	Medium	Long	Low	Many people initiate drug use every year. Reductions in drug initiation can be expected to translate into future reductions in drug-related harms.	Reducing unnecessary opioid prescribing is a valid goal, but it contributes to a long-term response to the problem by reducing iatrogenic addiction.
3.1.3. Encourage medical officials and regulatory agencies to reduce opioid misuse while avoiding unnecessary barriers to medical use.	User	Medium	Medium	Low	Prescription and dispensation of opioid analgesics introduces the possibility that the drugs will not be used as medically recommended. Opioid prescribing also introduces risks of the development of OUD, even though most people who use opioids as prescribed do not go on to develop any issues.	Changes to opioid prescribing policies and practices need to navigate a difficult balance between reducing the risks of opioid misuse and ensuring that access to medically necessary opioid analgesics is not impeded. Reducing access to opioid medications in some patients could result in illegal sourcing.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
3.1.4. Increase the availability of alternatives to opioid pain relievers.	User	Medium	Medium	Low	Prescription and dispensation of opioid analgesics introduces the possibility that the drugs will not be used as medically recommended. Opioid prescribing also introduces risks of the development of OUD, even though most people who use opioids as prescribed do not go on to develop any issues.	The evidence base for alternatives to opioid analgesics and nonopioid treatments in addressing pain is uneven across various types of interventions and needs to be developed further to ensure that evidence-based practices are utilized. Administrative barriers, such as medical reimbursement rules, hamper the uptake of nonpharmacological interventions.
3.1.5. Promote overdose-prevention messaging, especially that aimed at the risks of counterfeit tablets.	User	Medium	Short	High	The arrival of synthetic opioids, in combination with concomitant uncertainty and lack of information stemming from the proliferation of new molecules and emergence of counterfeit tablets, increases risks of drug overdose for people who use drugs.	People who could benefit most from this intervention are a very hard-to-reach group, although there are organizations working with these populations whose input and outreach assistance should be solicited.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
Treatment						
3.2. Expand access to evidence-based treatment.						
3.2.1. Extend the opioid public health emergency declaration.	User	Low	Short	Low/medium	The overdose crisis and harms caused by synthetic opioids continue to pose a direct and escalating threat to public health, public safety, and national security.	The extension of the public emergency declaration provides no immediate challenges, but it alone will likely have a limited impact on reducing overdoses.
3.2.2. Identify actions that can expand access to care by evaluating barriers, regulatory and otherwise, to accessing mental health and SUD treatment.	User	Medium	Medium/short	High	Regulatory and financial impediments to access to treatment and funding deter people from obtaining medications to treat OUD.	Many complex administrative and regulatory barriers to treatment will remain even if funding is addressed; some of these barriers relate to the delivery of health care and social services in the United States more broadly.
3.2.3. Expand funding and add interventions to increase availability of and access to OUD treatment.	User	High	Medium/long	High	The limited access to treatment and other resources aimed at those with OUD is insufficient to ensure long-term recovery.	This requires an expansion of access to quality health care coverage. Concerns about diversion of medication and stigma associated with medication therapy for OUD remain a challenge.
3.2.4. Promote other health and well-being initiatives to reduce SUD and address associated needs.	User	High	Long	Low	Research shows clear connections with adverse childhood experiences and use of drugs and alcohol.	Outcomes are distal from intervention and can take years for interventions to generate measurable effects.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
Harm reduction						
3.3. Enhance evidence-informed harm-reduction efforts.						
3.3.1. Increase access to naloxone by providing more funding, especially to first responders and programs that distribute to at-risk individuals and their families; encourage coprescribing; and promote making naloxone available in public spaces and facilities.	User	Medium	Short	High	People who use drugs are at greater risk of drug overdose because synthetic opioids are so potent and because the markets these opioids have penetrated are increasingly complex but not transparent. Availability of naloxone helps reduce the risks of a fatal overdose.	Naloxone carry and use continues to face opposition among some law enforcement agencies; distribution of naloxone to hard-to-reach people who use drugs can be logistically difficult; target populations might not be aware that they would benefit or are eligible to receive free naloxone.
3.3.2. Promote evidence-informed harm-reduction approaches.	User	Medium	Medium	High	Evidence-based harm-reduction interventions continue to face opposition from various stakeholders that might stem from stigmatizing attitudes or lack of familiarity with harm-reduction programs and their potential benefits.	Although it might be possible to study the effects that educational materials have on attitudes and beliefs, establishing any impact on acceptance, implementation, and uptake of harm-reduction services can be substantially more difficult; other interventions require research.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
3.3.3. Determine and amplify best practices and standards for FTS services and their use.	User	Medium	Medium	Medium/high	Drug content checking that can determine the presence of fentanyl opioids in a drug sample can reduce uncertainty and the associated risk of adverse outcomes, particularly among people not tolerant to synthetic opioids. Test-strip programs can also serve as a point of engagement with people who use drugs.	FTSs can provide only a binary yes/no indication of the presence of fentanyl in a drug sample, which is less useful than more-advanced technologies in opioid markets fully penetrated by synthetic opioids. Evidence on their effectiveness for counterfeit tablets is unclear because tableting lacks homogeneity. Like other harm-reduction interventions, FTS distribution could face some opposition from key stakeholders. Risks of false negatives and concerns about liability can limit their reach.
3.3.4. Support research on the effectiveness of emerging harm-reduction practices.	User	Medium	Long	Low	The evidence base underpinning novel harm-reduction interventions, such as drug-checking services, continues to rely primarily on studies of varying quality from international contexts that might not be fully transferable to the United States.	The attribution of population-level effects to relatively small-scale harm-reduction programs is difficult.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
Recovery support						
3.4. Take efforts to promote recovery from SUD.						
3.4.1. Advance recovery readiness in workplaces and support entry of those in recovery into the workforce.	User	Low/medium	Medium	Medium	Many in recovery face stigma or other barriers to reentry into the workforce.	Stigma and state laws that require or allow punitive actions against those who test positive could hinder recovery in some.
3.4.2. Expand access to recovery support services for housing.	User	Medium	Medium/long	Medium	Barriers to recovery and reentry impede people with OUD, which can result in relapse.	Stigma will need to be addressed and reduced. This could take time to implement because attitudes toward addiction can be slow to change.
3.4.3. Expand access to recovery support services for employment and peer support.	User	Medium	Medium/long	Medium	Barriers to recovery and reentry impede people with OUD, which can result in relapse.	Stigma will need to be addressed and reduced. This could take time to implement because attitudes toward addiction can be slow to change.
3.4.4. Promote means of reducing stigma around seeking treatment and being in recovery.	User	Low	Medium/long	Medium/high	Stigma remains a major barrier to supporting the recovery and needs of those who use drugs.	Reducing stigma and changing social attitudes could take time and are very difficult. Continued engagement on this will be needed.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
Pillar 4: International cooperation						
Multilateral institutions						
4.1. Strengthen coordination with multilateral institutions to promote enhanced control and reporting of drugs and other chemicals.						
4.1.1. Enhance the promotion of listing chemicals that have little or no use other than the manufacture of synthetic opioids both to the 1988 Convention and through INCB's ISSL.	Producer	Low	Long	Medium	The changing nature of inputs used to manufacture synthetic opioids complicates control over new chemicals. Several fentanyl precursors are not controlled internationally.	It is not possible to put every chemical used in the manufacture of synthetic opioids under international control, so this action would necessarily have limited impact. It would probably require long-term engagement.
4.1.2. Support INCB to help other countries develop and build partnerships between the private sector and regulatory authorities.	Producer	Low/medium	Long	Medium	For monitoring chemical producers, other countries have limited capacity and the private sector might be slow to buy in.	Effectiveness depends on the buy-in of other countries and their private sectors that might not view chemical diversion as their issue.
4.1.3. Support efforts by UNODC, WHO, and INCB to enhance countries' capacities in the areas of drug detection, identification, and reporting to support scheduling decisions and related controls.	Producer, exporter	Low/medium	Long	Medium/high	Other countries have limited capacity to control and monitor chemical producers.	This requires buy-in from other countries to participate in capacity-building activities and use the newly developed capacities.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
4.1.4. Utilize international channels and multilateral forums to encourage the PRC to strengthen regulatory oversight of the pharmaceutical and chemical sectors.	Producer	Low	Medium/long	High	The PRC might not be eager to engage with the United States directly on this matter, which could require additional support from international bodies.	This action represents, at best, an option supplemental to engaging with the PRC directly on the issue; the number of countries affected by chemicals coming out of the PRC continues to be limited.
4.2. Examine how the international drug control regime can be improved, expanded on, or otherwise supplemented.						
4.2.1. Explore the practicality and utility of additional multilateral agreements on chemical control, focusing specifically on synthetic drugs.	All	Low	Long	Low	Existing international conventions could be limited given challenges today. Chemical generation outpaces regulatory action.	Given reluctance to renegotiate existing treaties, the likelihood of success is not very high. Payouts could be far into the future.
4.2.2. Encourage other countries, especially those suspected of supplying or known to supply novel synthetic opioids, to extend controls over whole classes of emerging substances by amending relevant national drug control laws and regulations.	All	Low	Medium/long	Medium	Existing national laws and regulations could be limited when it comes to new chemicals that can be easily modified to fall outside of control.	Countries could be reluctant to change national laws. Legal solutions can take a long time, are complicated, and are not a priority. Additionally, laws will still need to be enforced.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
Mexico						
4.3. Enhance efforts to ensure a collaborative U.S.–Mexico security and drug partnership by enhancing Mexican counternarcotic capabilities, strengthening institutions against corruption, and focusing greater resources on the illegal firearm trade.						
4.3.1. Encourage Mexican counternarcotic authorities to prioritize targeting counterfeit pill operations, including the illegal importation of machinery and equipment that can be used to manufacture tablets.	Producer, processor, exporter	Low/medium	Medium/long	Medium	Mexico has limitations in enforcement of drug equipment laws and does not prioritize policing clandestine tableting operations.	This step might not be in line with Mexican law enforcement priorities.
4.3.2. Offer technical and financial assistance to support Mexico's judicial system reform.	Producer, exporter	Low/medium	Long	Medium/high	Mexico's prosecution rates remain extremely low.	U.S. assistance programming supports capacity-building efforts by Mexico's state and federal entities, and programming must be negotiated to achieve shared bilateral objectives.
4.3.3. Reduce the illegal exportation of firearms from the United States to Mexico.	Producer, exporter	Low/medium	Medium/long	Medium	More can be done to target arms and bulk cash smugglers to help reduce violence.	Addressing the issue in the United States would be extremely difficult, both politically and legally; however, even good-faith efforts with limited effectiveness could generate positive impacts for the bilateral relationship.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
4.3.4. Assess existing capacities of the Mexican military, and remove barriers to providing technical support.	Producer, exporter	Medium	Short	High	The Mexican military is charged with an expanding counterdrug mission for which it was not designed.	Existing rules for assistance to foreign militaries represent an obstacle; in the long run, the military might not be well equipped or trained to undertake domestic law enforcement operations.
4.3.5. Support the targeting of illegal finances and criminal networks across North America.	Producer, exporter	Low	Medium	Medium	The laundering of proceeds from the illegal drug trade and other criminal activities is a key enabling function of TCOs.	AML efforts have been rendered more difficult by increasing use of complex tools, such as trade-based money-laundering schemes, professional laundering services, and cryptocurrencies; substantial volumes of assets would have to be seized to make a meaningful impact.
4.3.6. Support the strengthening of pharmaceutical regulatory capacity in Mexico and efforts to root out corruption to prevent domestic diversion and promote robust public-private partnerships.	Producer	Low/medium	Medium/long	Low	Limited capacity and concerns about potential corruption limit the effectiveness of regulatory bodies; some are concerned that Mexico's chemical and pharmaceutical sectors will become sources of diverted inputs needed to manufacture fentanyl.	Voluntary self-regulation would be a more attractive proposition to Mexican industry if there were a credible alternative of strong regulatory enforcement; the U.S. government should continue to support Mexico's efforts to combat corruption and build capacity.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
4.3.7. Support Mexican authorities' ability to detect fentanyl precursors at POEs, fentanyl in outbound post, and inbound bulk cash and firearms.	Producer, exporter	Low	Medium	High	Cash and firearm smuggling from the United States to Mexico is a key enabling function of Mexico-based TCOs; participation by Mexican authorities to improve import screening is currently limited.	Authorities in Mexico are not well positioned to interdict contraband flowing to the country. Long-term joint efforts will be needed; on its own, this action is likely to have a very limited impact without concurrent progress on such topics as the fight against corruption and detection and identification capabilities.
4.3.8. Intensify work with Mexican counterparts to improve their drug and chemical identification reporting for seizures and transmission of physical samples of seizures to the United States.	Producer, processor, exporter	Low	Medium	High	Mexico's technical capacity to analyze seizures is limited. Officials are reluctant to share information, leaving few direct samples that DEA can analyze.	Mexico has not expressed receptiveness toward similar efforts in the past.
The PRC						
4.4. Establish a U.S. policy framework to engage with the PRC to improve oversight and enforcement of its chemical and pharmaceutical industries.						
4.4.1. Dialogue with the PRC to commit to improve oversight and investigation of the chemical and pharmaceutical sectors.	Producer	Low	Medium	High	The PRC's actions do something in the short term but are not sufficient. Lack of clear asks and agreement to improve industry oversight and adherence to rules allows production to continue.	The PRC might be reluctant to undertake robust oversight over large and profitable industries.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
4.5. Press the PRC to adopt clear rules to improve regulatory oversight and enforcement of industries, control over movements of chemicals and related equipment, and other restrictions on exports.						
4.5.1. Encourage the PRC to improve inspections and investigations of its chemical and pharmaceutical sectors, and promulgate and publicize additional reporting rules and requirements.	Producer	Low	Medium/long	Medium/high	Limited inspection capacity and regulatory devolution allow production to continue.	The PRC might be reluctant to undertake robust oversight over large and profitable industries.
4.5.2. Request that the PRC extend controls over chemicals that have been controlled in North America and have little use other than the manufacture of synthetic opioids.	Producer	Low	Medium	Medium	Several fentanyl precursors controlled in North America remain uncontrolled in the PRC.	This represents a less onerous and intrusive request than other enabling actions in this group. However, the PRC might still be reluctant to take this action absent concessions or reciprocal action by the United States.
4.5.3. Encourage the PRC to mandate adoption of better business practices within the chemical and pharmaceutical sectors, such as know-your-customer rules and export restrictions for chemical and pharmaceutical producers and vendors, and to investigate those that violate rules.	Producer	Low	Medium/long	Medium/high	Lacking paper trails, best practices, and rules that limit unlawful exportation allow continued production.	The PRC might be reluctant to undertake robust oversight over large and profitable industries.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
4.5.4. Lobby the PRC to adopt export controls on machinery and other equipment used for the manufacture of counterfeit tablets, in line with Article 13 of the 1988 UN Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances.	Producer, processor	Low	Medium/long	Medium/low	The PRC does not regulate equipment or machinery used in the manufacture of tablets.	The PRC might be reluctant to undertake robust oversight over large and profitable industries. Controls over machinery might be easy to circumvent.
4.5.5. Improve information reporting and exchange within the PRC on chemical exports.	Producer	Low	Medium	Medium	Chemical export reporting is limited, as is information-sharing with North American partners.	The PRC might be reluctant to undertake robust oversight over large and profitable industries.
4.5.6. Enhance and expand FDA's cooperation with PRC counterparts and increase the number of FDA personnel stationed in the PRC.	Producer	Medium	Medium/long	Medium	U.S. regulatory officials have little insight into industries in the PRC, and technical assistance and other tools need to be enhanced through additional support from the United States.	Effectiveness of this action is constrained by the extent to which the PRC is willing to cooperate.
4.5.7. Support the PRC with improvements to screening at ports of exit.	Producer, exporter	Low/medium	Medium/long	Medium	Constrained capacity to screen at ports of exit limits the deterrent effect of new rules.	In addition to reliance on the PRC's willingness to cooperate, the effectiveness of this action also relies on progress in strengthening the regulatory oversight in the PRC.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
Other countries						
4.6. Expand engagement with other countries to facilitate information-sharing and promotion of best practices to reduce supply and demand of illegally manufactured synthetic opioids, especially in countries most likely to experience such problems in the near future.						
4.6.1. Enhance information-sharing partnerships with other partner nations focused on law enforcement intelligence sharing and support for investigations.	Producer	Low	Medium/long	Medium	Other countries might present opportunities for the illegal manufacture of synthetic opioids and other precursor chemicals. Identifying and closing vulnerabilities remain.	Information-sharing among law enforcement officials is hampered by long-standing administrative, regulatory, and cultural factors (this applies domestically as well as internationally).
4.6.2. Expand engagement with other countries to avoid expansion of illegal manufacturing of synthetic opioids and encourage other potential sources of precursors to adopt similar controls over chemicals.	Producer	Low/medium	Medium/long	Medium/high	India and Myanmar are potential emerging sources of fentanyl and related precursors. Identifying and closing vulnerabilities remain.	Effectiveness depends on partner nations' openness to cooperation and recognition of the potential problem. The United States will need to monitor this factor into the future.
4.6.3. Promote and fund evidence-based demand-reduction best practices and interventions abroad aimed at synthetic opioids.	User	Medium	Medium	Low	The insufficiency of demand-reduction strategies and funds in partner nations, including Mexico, increases the risk of this problem getting worse. Further, demand elsewhere facilitates supply.	Overseas demand-reduction programs need to be culturally sensitive and could face barriers to implementation.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
Pillar 5: Research and monitoring						
5.1. Direct federal efforts to improve understanding of the illegal supply of synthetic opioids.						
5.1.1. Adopt a scientific, timely, and methodological approach to analyzing the illegal supply of synthetic opioids and related chemicals.	All	Low	Medium	Low/medium	Understanding of illegal drug markets in the United States and the nature of the synthetic opioid challenge is limited.	This requires coordination across multiple agencies and implementation of several other enabling actions.
5.1.2. Increase resources for national-level collection and analysis of intelligence on foreign illegal manufacturing of synthetic opioids and the production of strategic insights to policymakers and other partners.	Producer	Medium	Medium	Medium	Intelligence collection is more recently directed to this problem.	Intelligence collection is difficult and can take time to produce results. Challenges to information-sharing need to be overcome.
5.1.3. Incentivize state and local laboratories to report to NFLIS and strengthen reporting standards.	Producer, wholesaler, retailer	Low/medium	Medium	Medium/high	Variations in reporting requirements and protocols can bias measures.	Successful implementation requires cooperation by participating laboratories, which could be difficult to elicit and require additional grant funding.
5.1.4. Expand the use of retail drug market monitoring and increase the focus on illegal transactions of synthetic opioids.	Producer, wholesaler, retailer	Low/medium	Short	Medium/high	Limited collection of acquisitions that involve fentanyl or other synthetic opioids prevents a more robust understanding of the market.	This requires investment in data-collection efforts that are essential for understanding drug markets but not strictly necessary for case investigations.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
5.1.5. Increase support for DEA's Special Testing and Research Laboratory and expand the capacity of its FSPP.	Producer, processor, wholesaler, retailer	Low/medium	Medium	High	DEA labs face resource challenges.	This requires investment in data-collection efforts that are essential for understanding drug markets but not strictly necessary for case investigations. DEA needs to hire qualified personnel.
5.1.6. Consolidate reporting of seizure data involving synthetic opioids specifically, but new psychoactive substances more generally, across governmental agencies.	Importer, wholesaler, retailer	Low/medium	Medium	Medium/high	Seizure data are scattered across agencies, and events are sometimes double counted, making it difficult to assess the problem from a more complete perspective.	This requires coordination across a multitude of agencies; it risks degradation and disuse without sustained support.
5.2. Analyze emergent trends in drug markets and other related behaviors using a systematic and standardized approach.						
5.2.1. Develop and promote the adoption of national forensic standards.	User	Medium	Medium	Medium	Different reporting requirements and standards across jurisdictions prevent getting a more complete picture of the problem.	Implementation of developed standards could require financial and technical assistance efforts to increase uptake.
5.2.2. Provide greater granularity and timeliness in overdose death reporting.	User	Low/medium	Short	Medium/high	ICD-10 codes are not reported with sufficient granularity to understand the specific synthetic opioid involved.	This could require financial and technical assistance efforts to encourage compliance.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
5.2.3. Expand access to existing data by researchers, state and local government, and other interested stakeholders.	Importer, wholesaler, retailer, user	Low/medium	Long	Medium/low	Limited availability of data impedes research into the problem.	This requires coordination across a multitude of agencies and organizations. It might require additional data protection and privacy rules.
5.3. Utilize novel, high-frequency, and real-time systems to enhance market surveillance.						
5.3.1. Establish a national early-warning system.	Producer, wholesaler, retailer, user	Medium	Medium	High	Grant-based early-warning systems could face challenges in renewal and long-term commitments of partners.	This requires effective coordination across agencies and continued ownership to promote uptake and prevent degradation.
5.3.2. Introduce a network of sites with regular wastewater analysis.	User	Low/medium	Medium	High	The United States does not utilize wastewater testing to alert to early trends.	Scaling monitoring nationwide could take time to implement.
5.3.3. Resuscitate and expand ADAM.	User	Low/medium	Medium	Medium/high	Discontinuance of ADAM limited insights into emerging drug trends.	The program has historically struggled to secure sustained funding.
5.3.4. Establish a nationwide ED urinalysis network and expand DAWN.	User	Medium	Medium	Medium/high	Discontinuance of DAWN limited insights into emerging drug trends.	Hospital participation is difficult to obtain and maintain.

Action	Market-Level Focus	Anticipated Fiscal Impact	Time Frame for Implementation	Prioritization of Expected Impact	Gap or Vulnerability Addressed	Challenge
5.3.5. Enhance qualitative work with market participants.	User	Medium	Medium	Medium	Research into market participants to gauge behavioral changes or decisionmaking is limited.	It might be very difficult to generate insights from people involved in drug distribution at echelons above the street level. Obtaining funding for research on criminal behaviors is difficult.
5.3.6. Have NIDA research drug-checking services and other harm-reduction surveillance tools.	Retailer, user	Low/medium	Medium	Medium/low	The United States does not have research efforts to examine novel harm-reduction tools and how they can be leveraged to understand developments in markets.	Drug-checking services and other harm-reduction services can run into legal opposition, preventing or delaying implementation; this action's success requires the support of local law enforcement.

ABBREVIATIONS

ADAM	Arrestee Drug Abuse Monitoring
AED	advance electronic data
AML	anti-money laundering
4-AP	4-anilinopiperidine
B2B	business to business
CBP	U.S. Customs and Border Protection
CDC	Centers for Disease Control and Prevention
Cofepris	Comisión Federal para la Protección contra Riesgos Sanitarios, or Federal Commission for the Protection Against Sanitary Risks
COVID-19	coronavirus disease 2019
DAWN	Drug Abuse Warning Network
DEA	U.S. Drug Enforcement Administration
DHS	U.S. Department of Homeland Security
DOJ	U.S. Department of Justice
DOL	U.S. Department of Labor
ECC	express consignment carrier
ED	emergency department
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
EU	European Union
FDA	Food and Drug Administration
FIU	financial intelligence unit
FSPP	Fentanyl Signature Profiling Program
FTS	fentanyl test strip
FY	fiscal year
GAO	U.S. Government Accountability Office
HHS	U.S. Department of Health and Human Services
IC	Intelligence Community
ICD-10	International Classification of Diseases, tenth edition
INCB	International Narcotics Control Board
ISSL	international special surveillance list
MT	metric ton

ABBREVIATIONS

NFLIS	National Forensic Laboratory Information System
NIDA	National Institute on Drug Abuse
NIH	National Institutes of Health
NMPA	National Medical Products Administration
OEND	overdose education and naloxone distribution
ONDCP	Office of National Drug Control Policy
OD	opioid-use disorder
POE	port of entry
PRC	People's Republic of China
SAMHSA	Substance Abuse and Mental Health Services Administration
SEDENA	Secretaría de la Defensa Nacional, or Secretariat of National Defense
SEMAR	Secretaría de Marina, or Secretariat of the Navy
SSP	syringe service program
SUD	substance-use disorder
TCO	transnational criminal organization
UN	United Nations
UNODC	United Nations Office on Drugs and Crime
USPS	U.S. Postal Service
WCO	World Customs Organization
WHO	World Health Organization

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