



Testimony  
Before the Subcommittee on  
Transportation and Maritime Security,  
Committee on Homeland Security,  
House of Representatives

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## AVIATION SECURITY

# TSA Could Better Ensure Detection and Assess the Potential for Discrimination in Its Screening Technologies

Statement of Tina Won Sherman, Director,  
Homeland Security and Justice

# GAO Highlights

Highlights of [GAO-24-107094](#), a testimony before the Subcommittee on Transportation and Maritime Security, Committee on Homeland Security, House of Representatives

## Why GAO Did This Study

TSA employs passenger and baggage screening technologies to mitigate the threat of terrorism. TSA has faced challenges ensuring these technologies consistently meet detection requirements. The agency has also faced allegations that some of its screening practices, such as the use of advanced imaging technology, may refer certain passengers more frequently to additional screening.

This statement discusses TSA's efforts to (1) ensure passenger and baggage screening technologies continue to meet detection requirements after deployment and (2) assess the extent to which its use of advanced imaging technology refers certain passengers to additional screening more often than others.

This statement is based primarily on reports GAO issued in December 2019 and November 2022 on detection requirements for TSA screening technologies ([GAO-20-56](#)) and TSA's efforts to ensure its passenger screening practices do not result in discrimination ([GAO-23-105201](#)). To report on actions taken to address recommendations, GAO assessed implementation reports and reviewed agency documents and responses.

## What GAO Recommends

GAO made a total of nine recommendations in the December 2019 and November 2022 reports. DHS concurred with all nine recommendations. Seven remain open. However, TSA has taken steps to implement them, including the four recommendations to address the issues discussed in detail in this statement.

View [GAO-24-107094](#). For more information, contact Tina Won Sherman at (202) 512-8461 or [shermant@gao.gov](mailto:shermant@gao.gov).

October 19, 2023

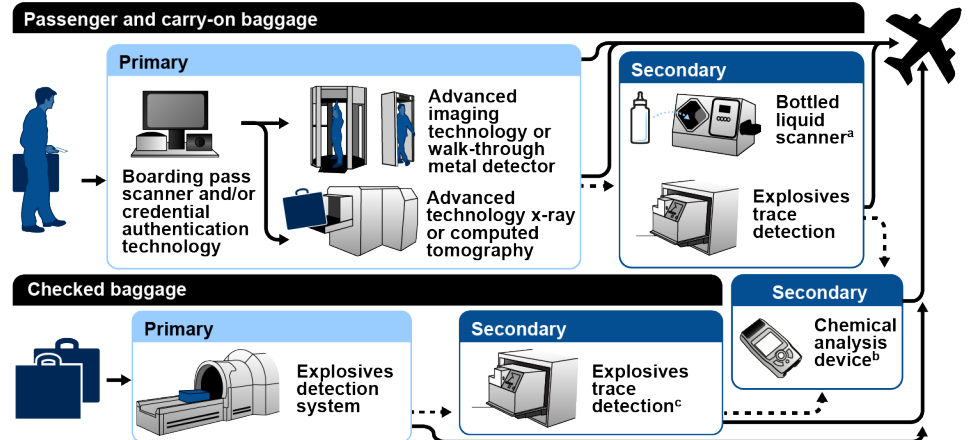
## AVIATION SECURITY

# TSA Could Better Ensure Detection and Assess the Potential for Discrimination in Its Screening Technologies

## What GAO Found

In December 2019, GAO reported that the performance of technologies the Transportation Security Administration (TSA) uses to screen passengers and baggage at airports can degrade over time. However, TSA does not ensure that such technologies continue to meet detection requirements after deployment to airports.

### Transportation Security Administration (TSA) Technologies Used for Checkpoint and Checked Baggage Screening



Source: GAO analysis of TSA information, GAO icons. | [GAO-24-107094](#)

TSA certifies technologies to ensure they meet requirements before deployment, and its officers are to regularly calibrate deployed technologies to demonstrate they are minimally operational. However, neither of these actions ensures that technologies continue to meet requirements after deployment. In 2015 and 2016, the Department of Homeland Security (DHS) tested a sample of deployed explosives trace detection and bottled liquid scanner units and found that some no longer met detection requirements. GAO recommended that TSA develop and implement a process to ensure technologies continue to meet detection requirements after deployment. TSA began requiring reviews of technologies after deployment in 2020 and is working to update its policy. TSA has also begun to conduct reviews and report on the results.

In November 2022, GAO reported that TSA officials at four selected airports and representatives from seven selected stakeholder organizations, such as the National Center for Transgender Equality and the Sikh Coalition, stated that the use of advanced imaging technology can result in certain passengers being referred for additional screening more frequently than others. These include transgender passengers and those who wear religious headwear or have disabilities. GAO recommended that TSA (1) collect data on referrals for additional screening, and (2) assess the extent to which its screening practices comply with agency non-discrimination policies. According to TSA officials, the agency has taken steps to collect data on such referrals, including the cause of additional screening, and plans to assess the data to inform the development and use of advanced imaging technology.

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Chairman Gimenez, Ranking Member Thanedar, and Members of the Subcommittee:

Thank you for the opportunity to contribute to today's discussion on aviation screening technologies. The Transportation Security Administration (TSA) is charged with the mission of protecting the nation's transportation systems, including preventing acts of terrorism on these systems and responding to ever-evolving threats. To mitigate these threats, TSA employs technologies to screen passengers and their carry-on and checked baggage for explosive materials and other prohibited items. The ongoing threat of terrorism and the projected growth in air travel highlight the importance of TSA continually assessing the effectiveness of its screening operations. However, the agency has faced challenges ensuring these technologies consistently meet detection requirements.<sup>1</sup>

TSA's *2020 Biennial National Strategy for Transportation Security* states that while striving to enhance transportation security, the government must preserve and protect the fundamental civil rights and civil liberties of the public it serves.<sup>2</sup> As such, it is important for TSA to carry out its security mission while ensuring its screening practices do not result in discrimination against passengers.<sup>3</sup> Yet the agency has received allegations that some of its screening practices, such as the use of advanced imaging technology, may refer certain passengers more frequently to additional screening.<sup>4</sup>

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<sup>1</sup>International Air Transport Association, *Global Outlook for Air Transport: Highly Resilient, Less Robust* (Montreal, Quebec, Canada.: June 2023).

<sup>2</sup>TSA, *2020 Biennial National Strategy for Transportation Security*, Report to Congress (May 29, 2020).

<sup>3</sup>TSA guidance states that prohibited discrimination occurs when TSA provides members of the public lesser, segregated, or different treatment (e.g., profiling, harassment, denial of services) based on protected class characteristics (e.g., hair style, clothing, skin color, manner of speaking, country of origin, name, religious articles or jewelry). See Transportation Security Administration, *Unlawful Profiling: What It Is and How To Avoid It* (Nov. 13, 2017).

<sup>4</sup>Advanced imaging technology machines use automated recognition software to screen passengers without physical contact and locate potential metallic and non-metallic threats, such as weapons or explosives, which may be concealed under clothing. Passengers who trigger an alarm on the machines may be required to undergo additional screening, which could include a targeted pat-down and, in some cases, explosive trace detection screening.

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My remarks today will focus on TSA's efforts to (1) ensure that passenger and baggage screening technologies meet the requirements for detection standards after deployment and (2) assess the extent to which its use of advanced imaging technology refers certain passengers to additional screening more often than others. This statement is primarily based on two reports—our December 2019 report about TSA's efforts to ensure passenger and baggage screening technologies continue to meet detection requirements after deployment and our November 2022 report about TSA's efforts to help ensure its airline passenger screening practices do not result in discrimination against passengers.<sup>5</sup> This statement also includes selected updates on actions TSA has taken to implement the recommendations from these two reports. In doing so, we assessed technology implementation reports and reviewed agency documents and responses.<sup>6</sup>

Our work examining TSA's passenger and baggage screening included analyzing documents on TSA's screening procedures, technology, and detection requirements, and interviewing TSA officials. For our work on screening technologies, we assessed operational requirements for technologies that were subject to TSA detection standards and calibration procedures. We compared TSA processes for ensuring deployed technologies meet requirements against DHS acquisition regulations and policies. Additionally, we observed screening operations and technologies at seven airports, which we selected based on airport category and geographic location.

For our work on TSA efforts to prevent discrimination, we visited four airports, selected based on size, complaints filed, and other factors. At these airports, we observed screening operations, interviewed TSA officials, and conducted 12 discussion groups with Transportation Security Officers who perform checkpoint screening. We also interviewed seven stakeholder organizations, including those representing religious groups and persons with disabilities, selected based on their work on airline security screening. Detailed information about the scope and

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<sup>5</sup>GAO, *Aviation Security: TSA Should Ensure Screening Technologies Continue to Meet Detection Requirements after Deployment*, [GAO-20-56](#) (Washington, D.C.: Dec. 5, 2019); and GAO, *Aviation Security: TSA Should Assess Potential for Discrimination and Better Inform Passengers of the Complaint Process*, [GAO-23-105201](#) (Washington, D.C.: Nov. 7, 2022).

<sup>6</sup>For the recommendations in our 2022 report, TSA provided its last response to our follow-up questions on the actions taken to implement them in July 2023.

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methodology for our prior work can be found in the products cited throughout this statement.

We conducted the work on which this statement is based in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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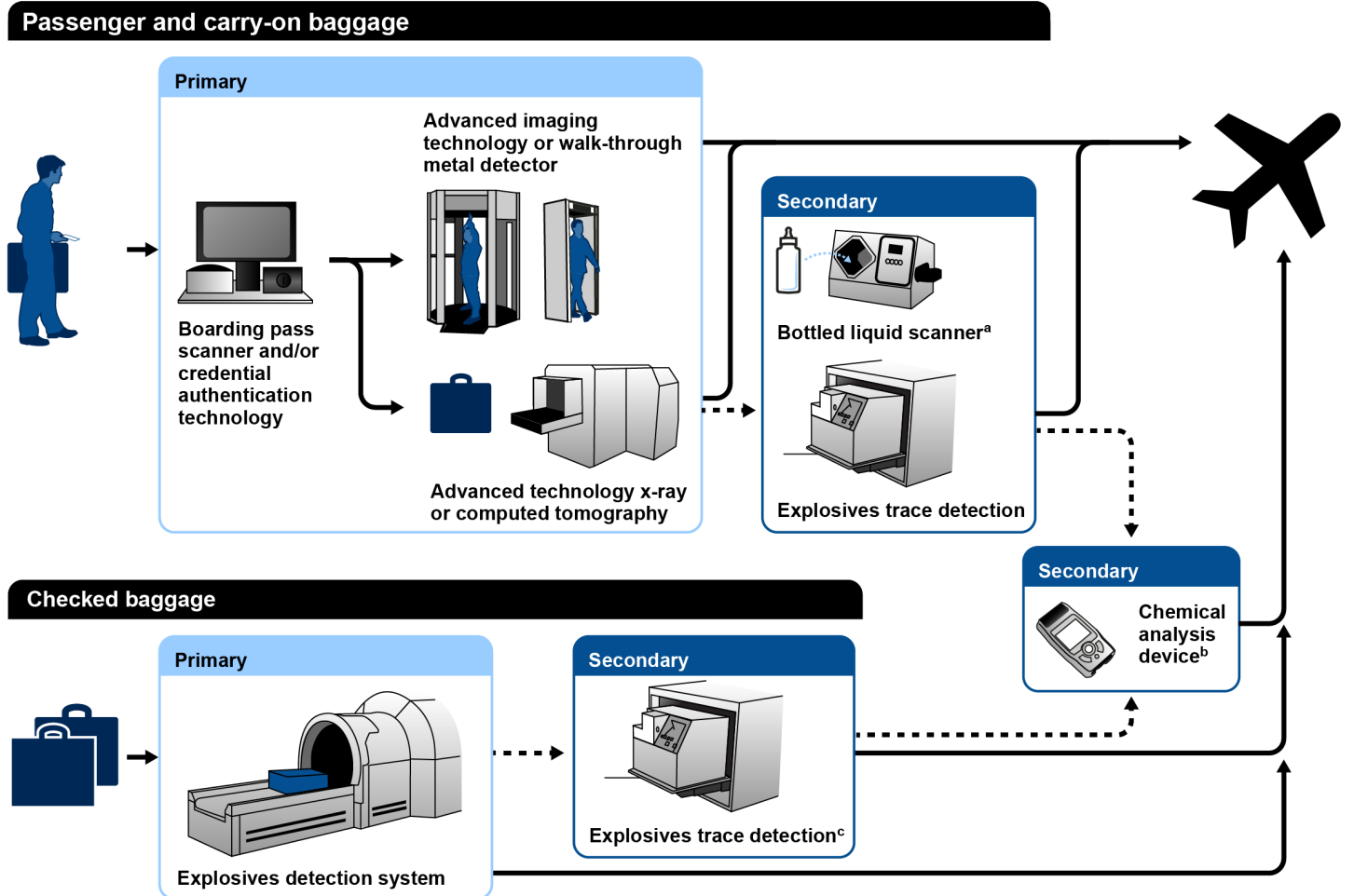
## Background

Terrorist organizations have a long history of targeting passenger aircraft using conventional and homemade explosives and other prohibited items, such as guns and knives. To mitigate this threat, TSA procedures generally provide that all passengers pass through security checkpoints where their person, identification documents, and carry-on bags are screened to detect and deter the smuggling of prohibited items into restricted airport areas and onto aircraft.<sup>7</sup> TSA uses a variety of screening technologies—a combination of hardware and software designed to detect threats—to protect the nation’s civil aviation system. Figure 1 depicts the various screening technologies TSA may use in primary and secondary passenger and checked baggage screening.

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<sup>7</sup>Passengers’ checked baggage are screened separately.

Figure 1: Transportation Security Administration (TSA) Technologies Used for Checkpoint and Checked Baggage Screening



Source: GAO analysis of TSA information, GAO icons. | GAO-24-107094

<sup>a</sup>Advanced imaging technology uses automated recognition software to screen passengers without physical contact and locate potential metallic and non-metallic threats, such as weapons or explosives, which may be concealed under clothing.

<sup>b</sup>Bottled liquid scanners are located at secondary screening, but according to TSA officials may be used for either primary or secondary screening of liquids.

<sup>c</sup>TSA explosives specialists use the chemical analysis device to resolve alarms for passenger, carry-on, and checked baggage screening.

<sup>d</sup>At certain TSA-regulated (commercial) airports, explosives trace detection is the primary technology used for screening checked baggage.

For each screening technology, TSA develops detection standards that identify and describe the prohibited items that the technology is required

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to detect during the screening process.<sup>8</sup> These standards, which are classified, also identify how often the technology should detect prohibited items and the maximum allowable rate at which the technology incorrectly identifies prohibited items. For explosive materials, the standards also identify what the screening technology is required to detect in terms of (1) the minimum amount or weight of the material and (2) the chemical and physical makeup of the material.

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## TSA Should Ensure Screening Technologies Continue to Meet Detection Requirements after Deployment

### TSA's Practices Do Not Ensure Screening Technologies Continue to Meet Detection Requirements after Deployment

In December 2019, we reported that TSA's practices do not ensure that screening technologies continue to meet detection requirements after those technologies have been deployed to airports.<sup>9</sup> According to TSA officials, the agency uses two processes—certification and calibration—to ensure screening technologies are operating as intended. The certification process is designed to ensure that new technologies meet detection requirements before they are procured and deployed to airports.<sup>10</sup> TSA officials also stated that daily calibration helps ensure that the technologies are at least minimally operational while in use at

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<sup>8</sup>As of December 2019, the screening technologies for which explosives detection standards were developed were advanced imaging technology, advanced technology x-ray, bottled liquid scanner, computed tomography, explosives detection system, and explosives trace detection. According to DHS officials, the agency also screens for "explosives precursors," which are chemical substances that, when combined with another substance, could be used to create a homemade explosive on board an aircraft. Explosives precursors can be used for legitimate purposes.

<sup>9</sup>[GAO-20-56](#).

<sup>10</sup>During the certification process, DHS's Science and Technology Directorate tests the technology under controlled conditions at its Transportation Security Laboratory to determine whether it meets TSA's detection requirements. After TSA certifies that a technology meets detection requirements (and it undergoes additional testing for other requirements), TSA may deploy the technology to selected airports for operational testing and evaluation to determine how it performs in an airport setting.

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airports.<sup>11</sup> However, while certification and calibration serve important purposes in the acquisition and operation of screening technologies, these processes do not ensure that TSA screening technologies continue to meet detection requirements after they have been deployed.

The certification process, for instance, does not account for the possibility that technology performance can degrade over time, throughout the technology's lifecycle. For example, in 2015 and 2016, DHS tested a sample of deployed explosives trace detection and bottled liquid scanner units and concluded that some deployed units for each technology no longer met detection requirements.<sup>12</sup>

Calibration, likewise, can demonstrate that the screening technology is at least minimally operational, but it is not designed to test whether the screening technology meets detection requirements. For example, to calibrate explosives detection systems, TSA officers are to run the manufacturer's operational test kit—which includes items of various densities—through the unit and verify that the item is correctly displayed on the system's monitor (see figure 2 below).<sup>13</sup> This process demonstrates a level of base functionality of the system, but it does not ensure that the system meets detection requirements. As a result, a system can pass calibration even when its detection capabilities have degraded.

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<sup>11</sup>Calibration procedures vary in terms of frequency and type for each screening technology.

<sup>12</sup>According to TSA officials, the units did not meet detection requirements because they were not adequately maintained. Officials stated that the agency has since introduced better controls to ensure that routine preventative maintenance is performed as required.

<sup>13</sup>For the purposes of this statement, references to TSA Transportation Security Officers may include both TSA-employed screening personnel and personnel employed by a qualified private-sector company contracted with TSA to perform screening services at airports participating in TSA's Screening Partnership Program. See 49 U.S.C. § 44920.



Figure 2: Images of Calibration Procedures and Operational Test Kits Used for Explosives Detection System Technology



Source: GAO. | GAO-24-107094

TSA officials stated that there are challenges in designing a process to ensure that screening technologies continue to meet detection requirements after deployment. For example, TSA officials stated that it is not feasible to conduct live explosives testing in airports. Further, while it is relatively easy to temporarily transfer smaller screening technologies, such as explosives trace detection units, to a controlled setting for live explosives testing, it would not be feasible to transfer larger installed units, such as advanced imaging technology. However, as we have previously reported, independent test measures exist to test these technologies such as a national standard for measuring image quality in explosives detection systems.<sup>14</sup>

<sup>14</sup>GAO, *Air Cargo Security: TSA Field Testing Should Ensure Screening Systems Meet Detection Standards*, [GAO-21-105192](#) (Washington, D.C.: July 29, 2021).

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## TSA Is Developing and Implementing a Process to Better Ensure Screening Technologies Continue to Meet Detection Requirements after Deployment

We made two recommendations regarding these issues in our December 2019 report.<sup>15</sup> The TSA Administrator should (1) develop a process to ensure that screening technologies continue to meet detection requirements after deployment to commercial airports and (2) implement that process. DHS concurred with both recommendations.

As of October 2023, TSA has partially addressed the first recommendation. In April 2020, TSA issued the *TSA Post Implementation Review (PIR) and Periodic Review Policy* (APM-20-031), which calls for TSA to develop and conduct a Post-Implementation Review—or roadmap for how TSA will assess technology performance—for each screening technology after initial deployment.<sup>16</sup> The policy identifies a specific timeframe for conducting this review and requires that TSA determine system performance relative to effectiveness and suitability as part of the review.

Additionally, the policy calls for TSA to conduct periodic reviews of each technology after the Post-Implementation Review, to assess system performance over time and examine whether functionality changes need to be made.<sup>17</sup> However, timeframes and other requirements for

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<sup>15</sup>GAO-20-56. We also made recommendations for TSA to (1) update its guidance for developing and approving screening technology explosives detection standards; (2) require and ensure that it documents key decisions, including testing and analysis decisions, used to support the development of new screening technology explosives detection standards; and (3) require and ensure that it documents its assessments of risk and the rationale behind decisions to deploy screening technologies. DHS concurred with the recommendations, has fully implemented two recommendations, and is taking steps to implement the third.

<sup>16</sup>Transportation Security Administration, *TSA Post Implementation Review (PIR) and Periodic Review Policy*, APM-20-031 (Springfield, VA: April 28, 2020). The Post-Implementation Review is the first assessment of performance after the technology has been deployed to airports; it is used to determine user satisfaction, system performance relative to effectiveness and suitability, financial compliance, and to identify lessons learned. The Post-Implementation Review is to be conducted within 6 to 12 months after the technology attains Initial Operating Capability or as directed by an acquisition decision memorandum. Initial Operating Capability for software occurs when the minimum capability necessary to field (deploy) the technology is achieved. In its November 2019 concurrence with our recommendation, DHS stated that TSA decided to examine the component performance of technologies' detection chain rather than perform a direct measure of detection requirements, due to the limitations of using live explosives and simulants. A separate Post-Implementation Review is required for each screening technology because each technology has unique logistics data and a unique detection chain.

<sup>17</sup>According to TSA's policy, periodic reviews can be completed through a variety of technical and non-technical means, such as a program manager review, dedicated operational analysis, contractual reviews, or a review of acquisition documentation.

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conducting periodic reviews are less clear. For example, the policy does not specify system performance requirements relative to effectiveness and suitability for periodic reviews.

To fully address our recommendation to develop a process for ensuring screening technologies continue to meet detection requirements after deployment, TSA policy and guidelines should call for the same requirements for periodic reviews as for post-implementation reviews.<sup>18</sup> In May 2023, TSA stated that it intends to adjust its policy on periodic reviews to include the same type of requirements as post-implementation reviews. According to TSA, such adjustments will include a general timeframe for conducting periodic reviews that allows for management team judgment based on specific needs and the assessment of system performance requirements relative to effectiveness and suitability. TSA estimated this update would be completed by December 31, 2023.

With respect to the second recommendation, TSA has begun to conduct and report on the results of post-implementation and periodic reviews for selected technologies. We assessed TSA's finalized and draft reports of the post-implementation and periodic reviews and found that TSA has made notable progress in implementing these policies.<sup>19</sup> In particular, TSA leveraged the national standard for image quality testing of computed tomography systems to assess detection performance of the checked baggage screening systems without the use of explosives testing. As we previously reported, this standard can be used to verify detection performance if properly employed.<sup>20</sup>

According to TSA officials, the agency is also working to develop a similar image quality test for advanced imaging technology that would evaluate degradation of detection performance without the use of live explosives.

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<sup>18</sup>For example, general timeframes for conducting reviews that allow for the individual judgement of the management team, and system performance requirements relative to technology effectiveness and suitability.

<sup>19</sup>As of May 2023, TSA had conducted and provided reports for two Post-Implementation Reviews and one periodic review, and was in the process of conducting a third Post-Implementation Review and scoping a plan for a fourth Post-Implementation Review.

<sup>20</sup>[GAO-21-105192](#). Institute of Electrical and Electronics Engineers Standards Association, *American National Standard for Evaluating the Image Quality of X-ray Computed Tomography (CT) Security-Screening Systems*. (New York, NY: May 23, 2011). To properly employ image quality tests in lieu of live explosive testing, TSA must establish clear linkage back to the laboratory tests conducted with live explosives. The agency also must use quantitative metrics of image quality to establish when detection performance would begin to degrade.

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TSA officials reported in May 2023 that they have developed and tested a kit to measure the parameters for this image quality test.<sup>21</sup> We have not previously reported on an image quality standard for advanced imaging technology and plan to continue to work with TSA officials and independent experts to understand whether this test will adequately identify degradation in detection performance.

However, we continue to have concerns regarding the sufficiency of the test data collected and reported during the periodic reviews, and the absence of specific test plans to measure the detection performance of the advanced imaging and computed tomography systems.<sup>22</sup> According to TSA officials, while the agency remains committed to implementing its periodic review process of screening technologies, officials also said that enduring resource constraints mean TSA will likely require additional time to implement a periodic review process for all screening technologies. To fully address our recommendation, TSA should address the concerns discussed above, such as the absence of specific test plans to measure the detection performance of specific technologies. We will continue to work with TSA to evaluate the agency's progress.

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<sup>21</sup>According to TSA officials, they have scoped a Post-Implementation Review for advanced imaging technology that is to be implemented once the standards and pass/fail criteria have been approved by a joint industry and government committee. The image quality test proposed by TSA is based on a draft national standard for image quality testing of millimeter wave screening devices—the core technology underlying advanced imaging technology systems.

<sup>22</sup>Because TSA deems these reports to contain sensitive information, we are not discussing the details of our assessments in this statement.

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## TSA Should Collect Data on and Assess the Potential for Discrimination in Its Screening Practices

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### TSA's Advanced Imaging Technology Can Refer Certain Passengers for Additional Screening More Frequently than Others

As discussed earlier in this statement, TSA may use advanced imaging technology as part of its primary passenger screening at airport security checkpoints (see figure 3). Passengers who trigger an alarm on the advanced imaging technology machine may be required to undergo secondary screening, which could include a targeted pat-down and, in some cases, explosive trace detection screening.

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**Figure 3: Advanced Imaging Technology Machine**



Source: GAO. | GAO-24-107094

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In November 2022, we reported that supervisory officers in all four airports we visited and Transportation Security Officers in all 12 discussion groups we conducted said that they have observed advanced imaging technology machines alarming frequently on certain passengers.<sup>23</sup> These include transgender passengers, passengers who wear religious headwear, or passengers with certain hair types and styles. For example,

- The officers stated that they push a blue or pink button on the advanced imaging technology machine to specify the gender passengers are scanned as, based on their visual assessment of the passengers' gender presentation. The officers stated that passengers may undergo additional screening if the gender button selected on the machine does not match the gender of the passenger. In addition, officers noted that transgender passengers may trigger alarms depending on the nature of their transition, because the technology may register potential threats in the groin and chest areas.
- The officers also stated that the advanced imaging technology cannot adequately screen certain hair types and styles (e.g., heavy braids), which can result in some passengers, including Black women, triggering alarms on the machines.
- Furthermore, officers stated that passengers who have medical conditions, prostheses, or disabilities that prevent them from holding the required position for advanced imaging technology screening (i.e., stand with their arms positioned over their heads) may be required to undergo additional screening.<sup>24</sup>

Some of the Transportation Security Officers we interviewed stated that these referrals for additional screening are not due to discrimination or profiling. Rather, they said that the alarms are a result of the detection of potential threats that cannot be cleared by the advanced imaging technology and need additional screening to resolve based on TSA's operating procedures. According to lead officers in one of the airports we visited, anything that differs from the technology's standard algorithm will register as a potential threat and trigger an alarm, regardless of race, religion, or other characteristics. Officers in another airport noted that passengers who are wearing baggy clothing or clothing with sequins can

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<sup>23</sup>[GAO-23-105201](#).

<sup>24</sup>According to TSA officials, individuals who cannot hold the stance for advanced imaging technology screening are considered ineligible, and the walk-through metal detector becomes the primary method of screening.

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also trigger alarms. According to the officers, they are required to perform targeted pat-downs as a means of resolving alarms to help ensure that passengers are not carrying potential threat items, such as weapons, past the screening checkpoint.

Similar to the observations of the TSA officials at the airports we visited, representatives from the seven selected stakeholder organizations we interviewed said that TSA's use of advanced imaging technology affects certain passenger groups more often than others. Some of these organizations have also raised concerns about the technology in congressional hearings. Representatives from some organizations stated that the use of the technology has contributed to negative passenger experiences with the security screening process that can be perceived as discrimination or profiling. For example,

- Representatives from the National Center for Transgender Equality and American Civil Liberties Union stated that because advanced imaging technology is based on a binary (i.e., male or female) selection by the officer, transgender passengers consistently trigger alarms and are subject to pat-downs of sensitive areas that they consider to be invasive and traumatic. These representatives noted that the prosthetic devices transgender passengers may wear could also trigger alarms on advanced imaging technology machines.
- In addition, representatives from the National Disabilities Rights Network and the Paralyzed Veterans of America stated that passengers who use wheelchairs and are not able to be screened by advanced imaging technology machines, are required to undergo a pat-down, and at times may have to wait for extended periods for an officer of the same gender to conduct the pat-down.
- Further, in testimony before this Committee in June 2019, a representative from the Sikh Coalition stated that Sikhs are virtually guaranteed to receive additional screening because of their turbans, which trigger alarms on advanced imaging technology machines. According to the representative, this perpetuates stereotypes that certain passengers, including Sikhs, Muslims, Arabs, and Hindus, are security threats because other passengers consistently see them trigger alarms on purportedly neutral technology. Moreover, a representative from the National Association for the Advancement of Colored People Legal Defense and Educational Fund stated in the same hearing that Black women wearing natural or braided hair have frequently had to undergo pat-downs of their hair by TSA officers because the advanced imaging technology is unable to distinguish contraband from natural Black hair. Representatives from both of



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these organizations alleged that the technology singles out and imposes burdens on specific passenger groups, which they said could be experienced as discrimination by these groups.

TSA officials stated that the agency has a Disability and Multicultural Coalition and holds annual conferences and quarterly meetings with its members. This coalition includes over 400 organizations such as the Sikh Coalition, the National Center for Transgender Equality, and the Paralyzed Veterans of America. According to three of the seven stakeholder organizations we interviewed, TSA's Multicultural and Disabilities Branches, which collaborate with the coalition, are aware of and receptive to hearing organizations' concerns.<sup>25</sup> However, representatives from four stakeholder organizations stated that while TSA has taken some positive steps that may help prevent discrimination, it has not made meaningful changes to address the long-standing concerns they have raised. For example, a representative from one of these organizations stated that when advanced imaging technology machines were implemented, TSA told them the technology would reduce the need for pat-downs. However, this representative believes that this has not occurred. Representatives from another organization stated that TSA's main focus is on security and reducing wait times for the general public, and not enough emphasis is placed on the civil rights and dignity of passengers with special circumstances.

We reported in November 2022 that TSA had taken some actions that agency officials said may help better facilitate screening of transgender and gender-nonconforming passengers.<sup>26</sup> For example, at the time of our review, TSA was in the process of developing an algorithm update for its advanced imaging technology machines which, according to officials, would increase detection rates and reduce false alarm rates for the traveling public. The update was also expected to remove the need for gender-identifying buttons on the machine. Specifically, officers would only be required to press a gender-neutral "scan" button which, according to TSA, is expected to facilitate screening of transgender passengers

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<sup>25</sup>The Multicultural and Disabilities Branches are responsible for (1) promoting respect for civil rights and civil liberties in policy and training creation and implementation; (2) educating TSA personnel at headquarters and in the field on TSA's civil rights and liberties responsibilities to the public; (3) collaborating with organizations and advocacy groups to identify promising practices for TSA's nondiscriminatory delivery of security, custody, and customer-service programs and activities; and (4) investigating and resolving civil rights and civil liberties complaints filed by the public alleging discrimination in TSA's security screening activities at airports.

<sup>26</sup>[GAO-23-105201](#).



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because officers will no longer need to discern a passenger's gender prior to screening.

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### TSA Has Not Collected Data on Referrals for Additional Screening or Assessed the Potential for Its Practices to Result in Discrimination

In November 2022, we reported that TSA was aware of many of the concerns that stakeholder organizations had raised regarding its screening practices, but had not collected data on the extent to which its practices refer certain passengers for additional screening more than others.<sup>27</sup> The agency also had not conducted assessments to determine whether its screening practices comply with agency non-discrimination policies. We recommended that TSA (1) collect additional data on passenger referrals for additional screening and (2) conduct assessments to determine the extent to which TSA's passenger screening practices comply with agency non-discrimination policies to identify any needed actions to improve compliance.<sup>28</sup>

DHS concurred with both recommendations. In July 2023, TSA officials told us that, in June 2023, the agency completed deployment of the algorithm update to its advanced imaging technology machines at about 340 airports.<sup>29</sup> TSA officials stated that they collected data at 20 selected airports from May 2023 through June 2023 during its annual resource planning assessment to verify that the update was working as intended. TSA reported that preliminary results show that approximately 25 to 27 percent of passengers received a pat-down when using the updated machines at the selected airports. Officials stated that the 2022 assessment found that about 52 percent of passengers received a pat-down.

TSA officials stated that the agency also plans to collect data at selected airports where the advanced imaging technology update has been deployed using a new form that captures information on the passenger's experience during checkpoint screening. According to officials, the new form captures (1) the total screening time from travel document verification through checkpoint exit; (2) the cause of any additional screening; (3) the duration of any additional screening; and (4) any

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<sup>27</sup>[GAO-23-105201](#).

<sup>28</sup>In our November 2022 report, we also made recommendations for TSA to (1) take additional actions to better inform passengers about its discrimination complaint process and (2) strengthen its ability to analyze passenger discrimination complaints. DHS concurred with the recommendations, and TSA has taken steps to implement them.

<sup>29</sup>TSA reported that it is responsible for the security of nearly 440 federalized airports, as of July 2022.

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qualifiers including risk status, use of wheelchair, and number of traveling companions. TSA estimated that its data collection efforts would be complete by September 29, 2023. As of October 16, 2023, we have not received documentation of the data collected.

Officials stated that TSA plans to analyze the data collected to identify the (1) rate at which passengers trigger advanced imaging technology alarms, (2) percentage of false alarms, and (3) causes of false alarms. They said that the results of this study will be cross referenced with complaint data and used to support further development of advanced imaging technology algorithms. In addition, officials noted that further research may be needed to identify root causes related to any outcomes found and to expand upon the number of data points.

In addition to its data collection and analysis efforts, TSA reviewed literature on passenger experiences and potential bias in on-person screening and issued a briefing on its findings in March 2023. The briefing summarizes common factors associated with additional screening and potential strategies for using technology and procedures to help mitigate or prevent unintended bias. Furthermore, TSA has conducted focus groups to assess the pat-down process, and according to officials, planned to issue a report summarizing the topics discussed in July 2023. As of October 16, 2023, we have not received the report.

To fully implement our recommendations, TSA will need to provide evidence that it has collected data on passenger referrals and used these data to assess the extent to which its screening practices align with its anti-discrimination policies to identify any needed actions to improve compliance. We will continue to monitor TSA's data collection, analysis, and other efforts to address these recommendations.

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Chairman Gimenez, Ranking Member Thanedar, and Members of the Subcommittee, this completes my prepared statement. I would be pleased to respond to any questions that you may have at this time.

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## GAO Contacts and Staff Acknowledgments

If you or your staff have any questions about this testimony, please contact Tina Won Sherman, Director, Homeland Security and Justice, at (202) 512-8461 or [shermant@gao.gov](mailto:shermant@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. GAO staff who made key contributions to this testimony included Christopher Ferencik (Assistant Director), Johanna Wong (Analyst-in-Charge), William Bauder, Russell Brown, Jr., Benjamin Crossley, Michele Fejfar, R. Scott Fletcher, Barbara Guffy, Kevin Heinz,

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Susan Hsu, Katherine Lenane, Zina Merritt, Amanda Miller, Sasan J. “Jon” Najmi, Joi Reece, and Eamon Vahidi.

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