United States Government Accountability Office

Report to Congressional Committees

June 2021

COVID-19

TSA Could Better Monitor Its Efforts to Reduce Infectious Disease Spread at Checkpoints

Accessible Version

GAO@100

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GAO-21-364

GAO@100 Highlights

Highlights of GAO-21-364, a report to congressional committees

June 2021

COVID-19

TSA Could Better Monitor Its Efforts to Reduce Infectious Disease Spread at Checkpoints

Why GAO Did This Study

Within TSA, approximately 46,000 TSOs stationed across the nation's commercial airports perform screening and other activities that often require close interaction with passengers. As a result, both passengers and TSOs may be at an increased risk of infection during pandemics such as COVID-19.

The CARES Act included a provision for GAO to conduct monitoring and oversight of the federal government's response to the COVID-19 pandemic. This report identifies 1) what steps TSA has taken to reduce the spread of COVID-19 at passenger screening checkpoints; and 2) how TSA is monitoring TSOs' implementation of amended safety and screening procedures, among other objectives.

GAO analyzed TSA data on TSOs' use of paid leave, reviewed documentation on policies and procedures, and interviewed TSA officials at headquarters and eight U.S. airports. We selected these airports to reflect diversity in the number of COVID-19 cases among TSOs, airport size, and geographic region. In addition, for six of these airports, GAO reviewed closed circuit television footage to observe how TSOs were implementing COVID-19 procedural changes.

What GAO Recommends

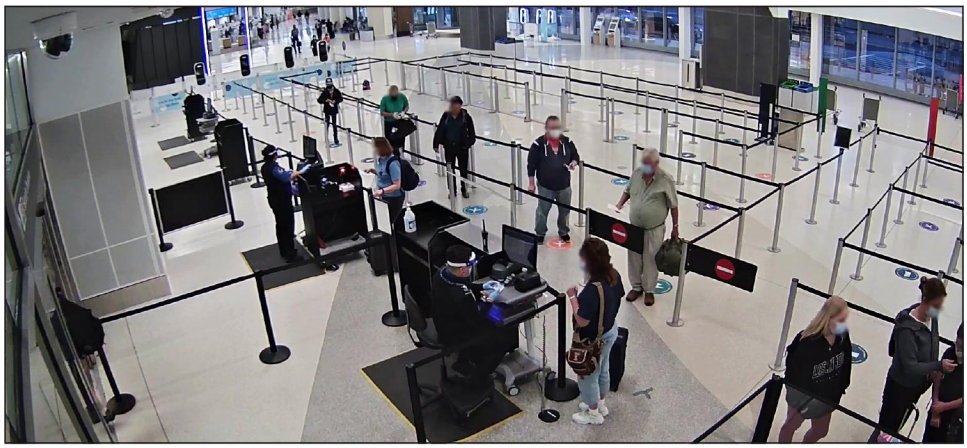
GAO is recommending that TSA 1) take steps to strengthen monitoring of measures to reduce the spread of infectious diseases at passenger screening checkpoints and 2) analyze available data to identify patterns of success and failure in implementing COVID-19 measures across airports nationwide. TSA concurred with our recommendations.

View GAO-21-364 For more information, contact Triana McNeil at (202) 512-8777 or mcneilt@gao.gov.

What GAO Found

To reduce the spread of COVID-19 at passenger checkpoints, Transportation Security Administration (TSA) officials issued amended safety measures to require that Transportation Security Officers (TSOs) use surgical masks and face shields, change gloves after pat-downs, and physically distance themselves from coworkers and passengers as practicable. TSA also adjusted some screening procedures, such as asking passengers to remove more items from carry-on baggage to reduce the potential for alarms that require bag searches. In addition, TSA modified the use of certain checkpoint screening technologies, and granted TSOs additional paid leave. In January 2021, TSA began an employee vaccination program, and is in the process of vaccinating TSA employees, including TSOs.

Transportation Security Officers (TSO) and Passengers at an Airport Screening Checkpoint during the COVID-19 Pandemic



Source: Closed-circuit television footage from a commercial airport. | GAO-21-364

TSA's monitoring and analysis of its measures to reduce the spread of COVID-19 is limited. For example, supervisors' operational checklists do not specifically include the revised COVID-19 procedures, and the data that TSO monitors collect (e.g., on whether TSOs are properly wearing masks or changing gloves) reflect implementation at a point in time rather than throughout a shift. Conducting more complete monitoring would help TSA ensure that its TSOs are properly implementing COVID-19 procedures. In addition, TSA field leadership analyzes available monitoring data for different subsets of airports to understand how COVID-19 procedures are being implemented. However, TSA headquarters officials said they had no plans at the time of our review to analyze this data across all airports nationwide to identify common implementation problems, such as incorrectly wearing face shields and challenges with maintaining physical distance. Analyzing monitoring data across all airports would help TSA identify and address any system-wide deficiencies in implementing COVID-19 procedures, so that it may better protect its workforce and the traveling public.

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Abbreviations

CCTV	closed circuit television
CDC	Centers for Disease Control and Prevention
COVID-19	Coronavirus Disease 2019
DHS	Department of Homeland Security
FSD	Federal Security Director
ICM	infection control monitor
OSHA	Occupational Safety and Health Administration
PPE	personal protective equipment
R&D	research and development
S&T	DHS Science and Technology Directorate
TSA	Transportation Security Administration
TSO	Transportation Security Officer

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Congressional Committees

Since the outbreak of the Coronavirus Disease 2019 (COVID-19), approximately 46,000 Transportation Security Officers (TSO) employed by the Transportation Security Administration (TSA) have continued to perform tasks such as screening passengers at checkpoints, which may put them and the traveling public at increased risk of infection.[1] COVID-19 has had catastrophic impacts in the U.S. As of April 24, 2021, there were more than 31.8 million cumulative reported U.S. cases, and about 556,000 reported deaths, according to the Centers for Disease Control and Prevention (CDC).[2]

TSA—the primary federal agency responsible for securing passenger air travel—also seeks to ensure the health and safety of TSOs stationed across the nation's commercial airports.[3] Early in the pandemic, the federal government, in conjunction with state and local leaders, put in place interventions aimed at slowing the rate of infections. These interventions included travel restrictions, stay-at-home orders, and physical-distancing guidelines recommending that people remain 6 feet apart in public spaces. However, U.S. workers in certain sectors with

[1]The number of TSOs in March 2020 was more than 50,000. That number fell over the course of the pandemic, and by January 31, 2021, there were approximately 46,000 TSOs.

[2]Data on COVID-19 cases in the U.S. are based on aggregate case reporting to the CDC and include probable and confirmed cases as reported by states and jurisdictions. CDC's National Center for Health Statistics COVID-19 death counts in the U.S. are based on provisional counts from death certificate data, which do not distinguish between laboratory-confirmed and probable COVID-19 deaths. Provisional counts are incomplete due to an average delay of 2 weeks (a range of 1–8 weeks or longer) for death certificate processing. The data were accessed on April 27, 2021. Data include deaths occurring from January 2020 through the week ending April 24, 2021.

[3]While TSA exercises more direct operational control over certain aspects of security, such as the screening of passengers and property, it generally has no operational role in securing other areas of airports, such as public areas, and works collaboratively with airport operators and other stakeholders to respond to any security incidents. Subject to TSA oversight, regulated entities—such as airport and aircraft operators—implement access control measures and, in conjunction with state or local law enforcement agencies, must be capable of responding to an incident at their airport—whether in an airport public area or within an area for which access is controlled (i.e., a security-restricted area).

mission-critical roles—such as TSOs—could not be fully protected by these interventions because their job duties must be performed in person. Therefore, throughout the pandemic, TSA has had responsibility for identifying and implementing strategies to prevent TSOs from contracting or spreading COVID-19 while they continue to screen passengers.

The CARES Act—signed in March 2020—includes a provision for us to conduct monitoring and oversight of the federal government's efforts to prepare for, respond to, and recover from the COVID-19 pandemic.[4] In addition, we were asked to examine TSA's efforts to reduce human-to-human contact at airport passenger screening checkpoints in response to COVID-19. This report assesses the following objectives:

1. How many TSOs have been diagnosed with COVID-19?
2. To what extent has TSA taken steps to reduce the spread of COVID-19 at passenger screening checkpoints?
3. How is TSA monitoring TSOs' implementation of the amended safety and screening procedures intended to reduce the spread of COVID-19 at passenger screening checkpoints?
4. How has TSA coordinated with other stakeholders to share and obtain information on steps taken to reduce the spread of COVID-19 at passenger screening checkpoints, and what have been the results?

Our review focused on those changes that were relevant to TSA's TSO employees, processes, and procedures in use at passenger screening checkpoints for the roughly 440 commercial airports in the United States from January 2020 through January 2021.[5]

To address our first objective, we analyzed data received from TSA for the period March 1, 2020 through January 31, 2021 showing the

[4]Pub. L. No. 116-136, § 19010, 134 Stat. 281, 579. We regularly issue government-wide reports on the federal response to COVID-19. For the latest report, see GAO, COVID-19: Sustained Federal Action Is Crucial as Pandemic Enters Its Second Year, GAO-21-387 (Washington, D.C.: Mar. 31, 2021). Our next government-wide report will be issued in July 2021 and will be available on GAO's website at https://www.gao.gov/coronavirus.

[5]For purposes of this report, a commercial airport is any airport in the United States that operates pursuant to a TSA-approved security program in accordance with 49 C.F.R. pt. 1542 and at which TSA performs or oversees the performance of screening services. Additionally, for the purposes of this report, the term TSO includes private sector screeners employed by companies contracted with TSA to provide screening services at airports participating in TSA's Screening Partnership Program. See 49 U.S.C. § 44920.

percentage of confirmed positive COVID-19 cases among TSOs. We used this data to examine COVID-19 cases over time, as well as the distribution of cases across airports by security risk category and geographic region.[6] To assess the reliability of these data, we reviewed TSA documentation and electronically tested the data for missing information and obvious errors, among other steps. We found these data to be sufficiently reliable for describing the distribution of COVID-19 cases among TSOs at the nation's commercial airports.

To address our second objective, we reviewed key policies and procedures TSA enacted to reduce the spread of COVID-19. We reviewed Department of Homeland Security (DHS) and TSA documentation of 1) procedural changes enacted and any new tools and technologies employed at passenger screening checkpoints; 2) guidance on the use of personal protective equipment (PPE), such as surgical masks and face shields; and 3) human capital policies and flexibilities, such as amended leave policies. We evaluated the extent to which these were consistent with federal guidance from DHS, TSA, the CDC, and the Occupational Safety and Health Administration (OSHA). We also reviewed TSA time and attendance data for its TSOs to understand the use of expanded leave and telework options. To assess the reliability of these data, we reviewed TSA documentation and electronically tested the data for missing information and obvious errors, among other steps. We found these data to be sufficiently reliable for describing TSO use of different leave and time flexibilities during the pandemic.

Also to address our second objective, we conducted 21 interviews with aviation stakeholders about their experience with TSA's guidance and other tools to reduce the spread of COVID-19. These stakeholders included TSA Federal Security Directors (FSDs) who are responsible for ensuring TSA policies and procedures are carried out locally at airports; airport operator officials; and TSO union representatives at a non-generalizable sample of eight out of approximately 440 commercial

[6]TSA oversees security checkpoints at approximately 440 TSA-regulated airports nationwide. TSA classifies airports into one of five security risk categories (X, I, II, III, IV) based on various factors, such as the total number of takeoffs and landings annually, and other special security considerations. In general, category X airports have the highest number of passenger boardings and category IV airports have the fewest.

airports.[7] We chose airports to reflect variations in 1) number of confirmed cases of COVID-19 among TSOs (including two airports with very few COVID-19 cases); 2) airport category; and 3) geographic region.[8] In addition, we interviewed officials from two private companies that perform screening at airports within our sample as part of TSA's Screening Partnership Program, a TSA program that uses private sector screeners to perform screening activities at airports.[9] We also reviewed closed-circuit television (CCTV) footage from six of the sample airports to observe TSOs implementing the amended safety and screening procedures.[10] While our interview results and footage from selected airports are not representative, they do provide important context and illustrative examples. For example, interviews provided important insight into field employees' views of how TSA leadership communicated policy and procedural changes and the challenges that TSA field employees and airport operators faced as they implemented these changes.

To address our third objective, we reviewed TSA internal and published plans to assess the implementation of checkpoint screening procedures to reduce the spread of COVID-19. For example, we reviewed the monitoring checklist provided to field employees, as well as associated training materials regarding its use. We also interviewed TSA headquarters officials about any challenges associated with monitoring

[7]We did not interview officials from each group at all eight airports. Specifically, we interviewed eight FSDs, six airport operators, and TSO union officials representing TSOs at five of the airports.

[8]TSA organizes airports into a hub and spoke system. Hubs are generally the larger category X or I airports, and many hubs are associated with one or more spokes that are generally smaller category II, III, and IV airports. We chose some airports that had smaller spoke airports that had experienced cases of COVID-19 to obtain FSD perspectives about how smaller airports implemented procedural changes to reduce the spread of the disease. For example, one of our sample airports was Orlando International Airport (category X), and its FSD also discussed experiences from its spoke, Orlando Sanford (category II).

[9]Specifically, one of the private companies conducted screening at one of our sample airports, and the other conducted screening at a smaller spoke airport associated with one of our sample airports. In 2001, the Screening Partnership Program was established in federal law, originally as a pilot program and then on a permanent basis, to allow commercial airports to use TSA-approved qualified private-screening contractors to screen passengers and property. 49 U.S.C. § 44920. As of April 2021, contractors performed passenger and baggage screening services at 22 airports across the country.

[10]We requested and reviewed CCTV footage from the initial set of six airports we interviewed. These were the airports in our sample with the most TSO cases of COVID-19.

the implementation and effectiveness of these procedures. As discussed above, we spoke with FSDs, airport operator officials, and union representatives from a non-generalizable sample of airports to understand any local airport monitoring efforts, among other topics. Also, we reviewed CCTV footage from six of our sample airports to observe how field staff were implementing the TSA-instituted changes to policies and procedures and any associated challenges. We assessed the extent to which TSA's monitoring efforts are consistent with TSA guidance and the Project Management Institute's *The Standard for Program Management.*[11] In addition, the information and communication component of internal controls was significant to this objective, along with its related principle that management should use quality information to achieve its objectives.[12] Specifically, we assessed the extent to which TSA's monitoring efforts reflected this principle. Although the results from our review of airport footage are not representative, they do provide important context and illustrative examples, such as allowing us to understand the utility of CCTV footage as a monitoring tool that TSA leadership could leverage.

To address our fourth objective, we reviewed TSA's efforts to share and obtain information with aviation stakeholders on any new policies, procedures, tools, and technologies to reduce the spread of COVID-19 that could be implemented at U.S. airports' passenger screening checkpoints. Specifically, we spoke to 1) aviation industry groups, such as Airlines for America and Airports Council International; 2) TSA's federal partners, such as DHS's Science and Technology Directorate (S&T); 3) the non-generalizable sample of FSDs, airport operators, and union officials described previously; and 4) officials representing organizations that engage with TSA's international partners, such as the International Civil Aviation Organization, and a non-generalizable sample of four TSA Representatives who engage with foreign governments within

[11]Project Management Institute, Inc., *The Standard for Program Management*, Fourth Edition, 2017.

[12]GAO, *Standards for Internal Control in the Federal Government*, GAO-14-704G (Washington, D.C.: Sept. 2014).

their areas of responsibility.[13] See appendix I for more information about our objectives, scope, and methodology.

We conducted this performance audit from May 2020 to June 2021 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.

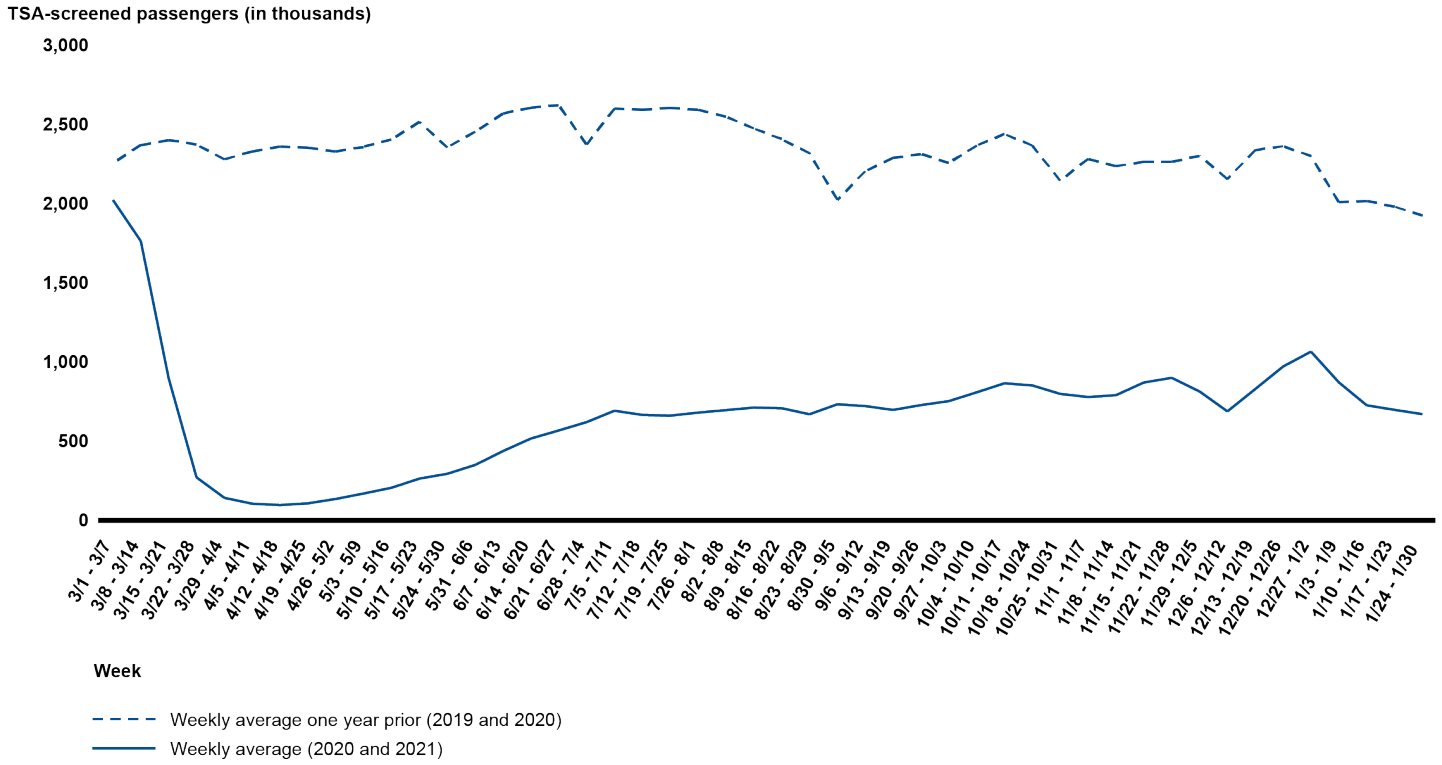
Background

Impact of COVID-19 on Passenger Domestic Air Travel

Domestic passenger air travel decreased significantly in response to COVID-19, with a nearly 96 percent drop at its lowest point. Since April 2020, passenger volumes have been generally increasing, but remain about 65 percent below the volume one year ago, as of January 2021 (see fig. 1).

[13]Airlines for America is a trade association that works with member airlines, labor, Congress, and other groups to improve the aviation industry. Airports Council International advocates for policies and provides services for more than 300 local, regional, and state commercial airport owners and operators in the United States and Canada. The International Civil Aviation Organization is an organization that is funded and directed by 193 national governments to support their diplomacy and cooperation in air transport. Transportation Security Administration Representatives are TSA officials who are posted at US embassies and consulates abroad. They serve as TSA's interlocutors to foreign governments and advisors to Ambassadors and Chiefs of Mission on aviation security issues. They engage with counterparts, including foreign airports, and facilitate information exchange and dialogue.

Figure 1: Transportation Security Administration (TSA) Weekly Average Airport Passenger Screening Checkpoint Throughput, March 2019 through January 2020 and March 2020 through January 2021



Source: GAO analysis of TSA data. | GAO-21-364

Note: These data show the 7-day weekly average number of passengers screened by TSA. Data show passenger throughput in the current year (2020 and 2021) versus the year prior (2019 and 2020). Data for previous year (dotted line) were adjusted to match data for current year (solid line), so that all data shown reflect weekly data groupings of Sundays through Saturdays.

Dates	Weekly Average 2020 / 2021	Weekly average 2019/2020
3/1 - 3/7	2022.47	2255.03
3/8 - 3/14	1762.5	2369.59
3/15 - 3/21	896.075	2401.43
3/22 - 3/28	270.247	2371.6
3/29 - 4/4	141.22	2278.33
4/5 - 4/11	104.159	2329.2
4/12 - 4/18	95.674	2359.85
4/19 - 4/25	106.586	2353.14
4/26 - 5/2	134.256	2327.41
5/3 - 5/9	168.692	2357.82

Dates	Weekly Average 2020 / 2021	Weekly average 2019/2020
5/10 - 5/16	205.01	2404.78
5/17 - 5/23	262.734	2515.99
5/24 - 5/30	293.144	2354.17
5/31 - 6/6	348.994	2453.12
6/7 - 6/13	436.522	2568.51
6/14 - 6/20	515.697	2605.84
6/21 - 6/27	566.737	2621.12
6/28 - 7/4	619.433	2371.73
7/5 - 7/11	691.285	2600.58
7/12 - 7/18	665.04	2592.12
7/19 - 7/25	660.391	2603.88
7/26 - 8/1	679.41	2591.03
8/2 - 8/8	695.113	2549.8
8/9 - 8/15	711.326	2473.8
8/16 - 8/22	707.372	2406.76
8/23 - 8/29	669.07	2318.5
8/30 - 9/5	732.012	2022.43
9/6 - 9/12	720.863	2203.63
9/13 - 9/19	696.453	2288.09
9/20 - 9/26	726.909	2313.67
9/27 - 10/3	752.032	2256.9
10/4 - 10/10	807.48	2365.88
10/11 - 10/17	864.76	2438.86
10/18 - 10/24	851.04	2365.81
10/25 - 10/31	797.54	2143.85
11/1 - 11/7	778.106	2282.33
11/8 - 11/14	789.478	2236.19
11/15 - 11/21	869.66	2262.99
11/22 - 11/28	899.182	2263.25
11/29 - 12/5	813.153	2300.86
12/6 - 12/12	687.249	2154.3
12/13 - 12/19	828.386	2337.37
12/20 - 12/26	970.636	2362.02
12/27 - 1/2	1064.67	2300.32
1/3 - 1/9	870.533	2007.05
1/10 - 1/16	725.628	2016.54

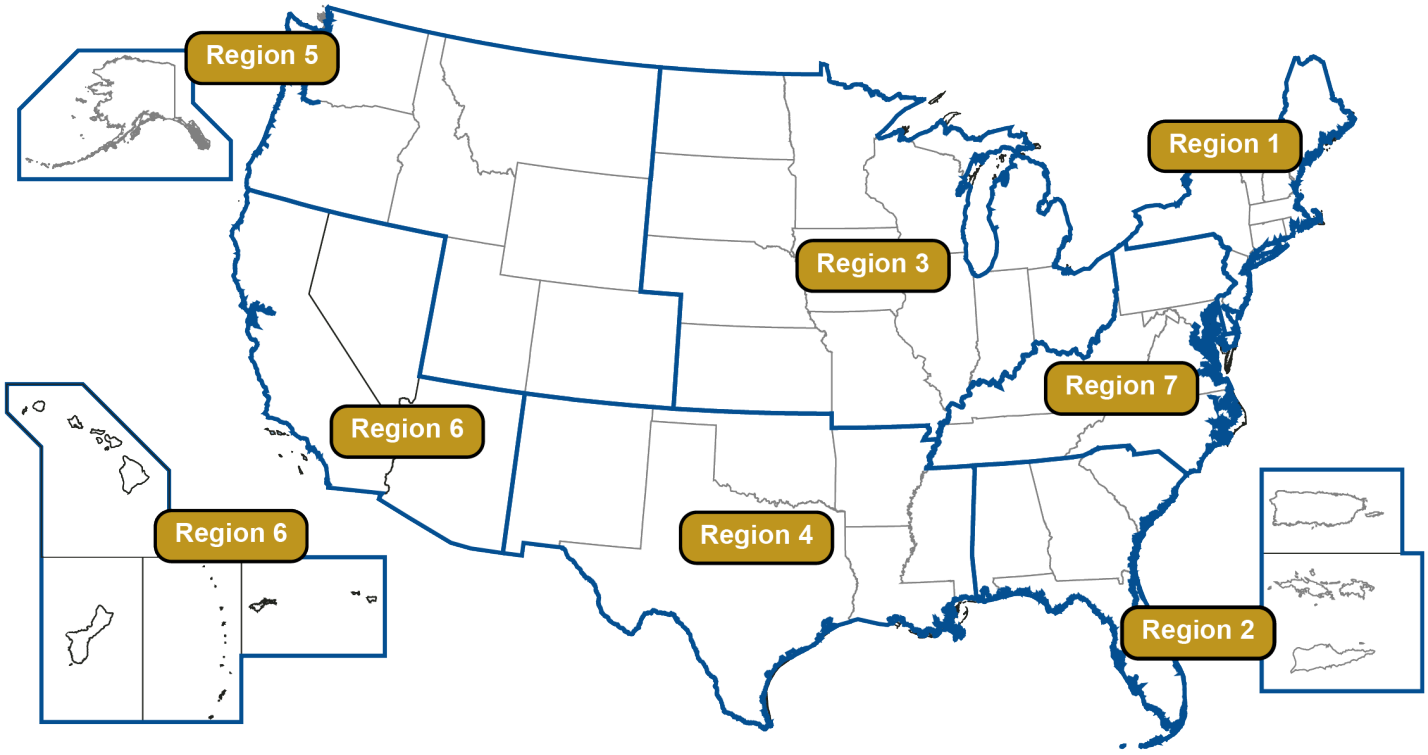
Dates	Weekly Average 2020 / 2021	Weekly average 2019/2020
1/17 - 1/23	696.966	1980.21
1/24 - 1/30	669.775	1923.6

TSA Roles and Responsibilities for Passenger Screening at Checkpoints

TSA management of checkpoints. TSA oversees security checkpoints at approximately 440 commercial airports nationwide, with its national operations divided into seven geographic regions across the country (see fig. 2).[14] TSA classifies airports into one of five security risk categories (X, I, II, III, IV) based on various factors, such as the total number of takeoffs and landings annually, and other special security considerations. In general, category X airports have the highest number of passenger boardings and category IV airports have the fewest. To ensure its policies and procedures are implemented locally at airports, TSA employs FSDs. Typically, TSA locates FSDs at larger (category X or I) airports, some of which also serve as hubs for smaller airports (categories II through IV) within a geographic area. These smaller airports are considered spokes of the larger hub airport. In such cases, FSDs are responsible for ensuring that TSA policies and procedures are carried out at both the larger hub and smaller spoke airports.

[14]In March 2021, TSA officials told us that TSA had recently revised its field structure by reducing its geographic regions from seven to five. For the purposes of this report, we use the previous seven-region structure since that is how TSA provided data to us.

Figure 2: Transportation Security Administration (TSA) Geographic Regions



Source: GAO presentation of TSA information. | GAO-21-364

Note: In March 2021, TSA officials told us that TSA had recently revised its field structure by reducing its geographic regions from seven to five. In the new structure, TSA combined regions 2 and 7. It also divided some states from region 5 and 3 across other regions, moving Washington, Oregon, and Idaho to region 6, and Montana, Wyoming, Colorado, Utah, and the Dakotas to region 4. For the purposes of this report, we use the previous seven-region structure since that is how TSA provided data to us.

Checkpoint screening operations. The checkpoint screening process, as set forth in TSA's procedures, is intended to deter and prevent passengers from carrying any unauthorized or prohibited items into the airport's sterile area and on board an aircraft.[15] The screening process, as performed by TSOs, involves a variety of duties, including checking travel documentation for authenticity, as well as screening and (in some cases) searching passengers and their carry-on baggage for items prohibited on aircraft.

[15]Sterile areas are security-restricted areas that, in general, provide passengers access to boarding an aircraft and to which TSA controls access through the screening of persons and property.

The checkpoint screening process begins when passengers enter the airport terminal security checkpoint and provide TSOs working as travel document checkers their boarding passes and identification for review. TSOs are to examine and scan boarding passes and identification documents to determine they are authentic and represent the passenger who is in front of them. To assist travel document checkers, TSA is in the process of deploying credential authentication technology at checkpoint entrances nationwide. The technology allows TSOs to scan passenger identification documents (such as a driver's license or passport) to confirm the authenticity of these documents and to help verify a passenger's identity.

After scanning and reviewing a passenger's boarding pass, TSOs serving as travel document checkers are to direct passengers to designated areas for standard, enhanced, or expedited screening. Before this screening takes place, TSOs serving as divestiture officers assist passengers with removing items from their persons (such as shoes) and within carry-on luggage and placing these items into bins. Most passengers receive standard screening. This typically includes being screened by advanced imaging technology, which identifies objects concealed on the person, and using X-ray equipment to screen the passenger's accessible property.[16] In the event that any of these screening devices identify a potential item of concern, TSOs are to take additional security measures as part of the alarm resolution process. These measures may include pat-downs or explosives trace detection searches, which involve using a device to detect explosive particles.[17] Prior to the pandemic, TSOs were required to wear gloves for some activities, such as passenger pat-downs or searches of personal property.

[16]When advanced imaging technology is not available, TSA uses walk-through metal detectors. Advanced imaging technology provides additional capability compared to walk-through metal detectors to identify prohibited items on a passenger.

[17]*Enhanced screening* is generally required for passengers TSA identifies as high risk, such as those that have been matched to federal government lists of known or suspected terrorists. Enhanced screening involves the same procedures applied during a typical standard screening experience, as well as a pat-down and an explosives trace detection search or physical search of the interior of the passenger's accessible property, electronics, and footwear. *Expedited screening* is allowed for passengers TSA believes to be low risk. One group of passengers who routinely receive expedited screening are those enrolled in TSA's Pre✓®—a program through which individuals vetted and approved by TSA are eligible for this level of screening. Expedited screening includes walk-through metal detector screening and X-ray screening of the passenger's accessible property, and passengers do not have to remove their belts, shoes, or light outerwear.

Pandemic Guidance

TSA's ongoing response to the COVID-19 pandemic has been informed by internal and external pandemic-related guidance, including guidance from TSA, DHS, CDC, and OSHA.

TSA pandemic-related base plan. TSA has a plan to identify required management activities in the event of a pandemic. In 2017, as part of its Incident Management Framework, TSA issued its *Chemical/Biological and Pandemic Base Plan* (base plan).[18] The document includes requirements to conduct risk assessments, guidance on possible policy and procedure changes (such as leave flexibilities and changes to passenger processing) in response to a pandemic, provision for supplies and equipment (such as PPE), and other activities TSA should implement to limit the spread of a virus during a pandemic.[19]

CDC guidance. The CDC, within the Department of Health and Human Services, has a mission to protect Americans from health, safety, and security threats, both foreign and in the U.S. In response to the COVID-19 pandemic, the CDC created a website for airports and their workers that contains links to guidance on limiting the spread of COVID-19.[20]

OSHA guidance. OSHA, within the Department of Labor, helps ensure safe and healthful working conditions for working men and women by setting and enforcing standards and providing training, outreach, education and assistance. OSHA has provided general guidance (Preparing the Workplace for COVID-19) and more specific COVID-19 guidance (Border Security and Transportation Security Workers and

[18]Transportation Security Administration Incident Management Framework, *Chemical/Biological and Pandemic Base Plan*, July 2017.

[19]TSA developed its plan in response to requirements in the DHS *2016 Pandemic and Emerging Infectious Diseases Workforce Protection Plan*. Specifically, among other things, the DHS plan required that component agencies develop a pandemic response plan that contained specific elements to assist the component in protecting its workforce during a pandemic.

[20]For example, the website includes links to *Interim Guidance for Businesses and Employers Responding to Coronavirus Disease 2019 (COVID-19).* See https://www.cdc.gov/coronavirus/2019-ncov/community/worker-safety-support/airports.html.

Employers).[21] These publications provide recommendations for cleaning and disinfecting the workplace and the need for PPE for different occupations based on the risk to the employee.

TSA Reported 5,456 COVID-19 Cases among TSOs from March 2020 through January 2021

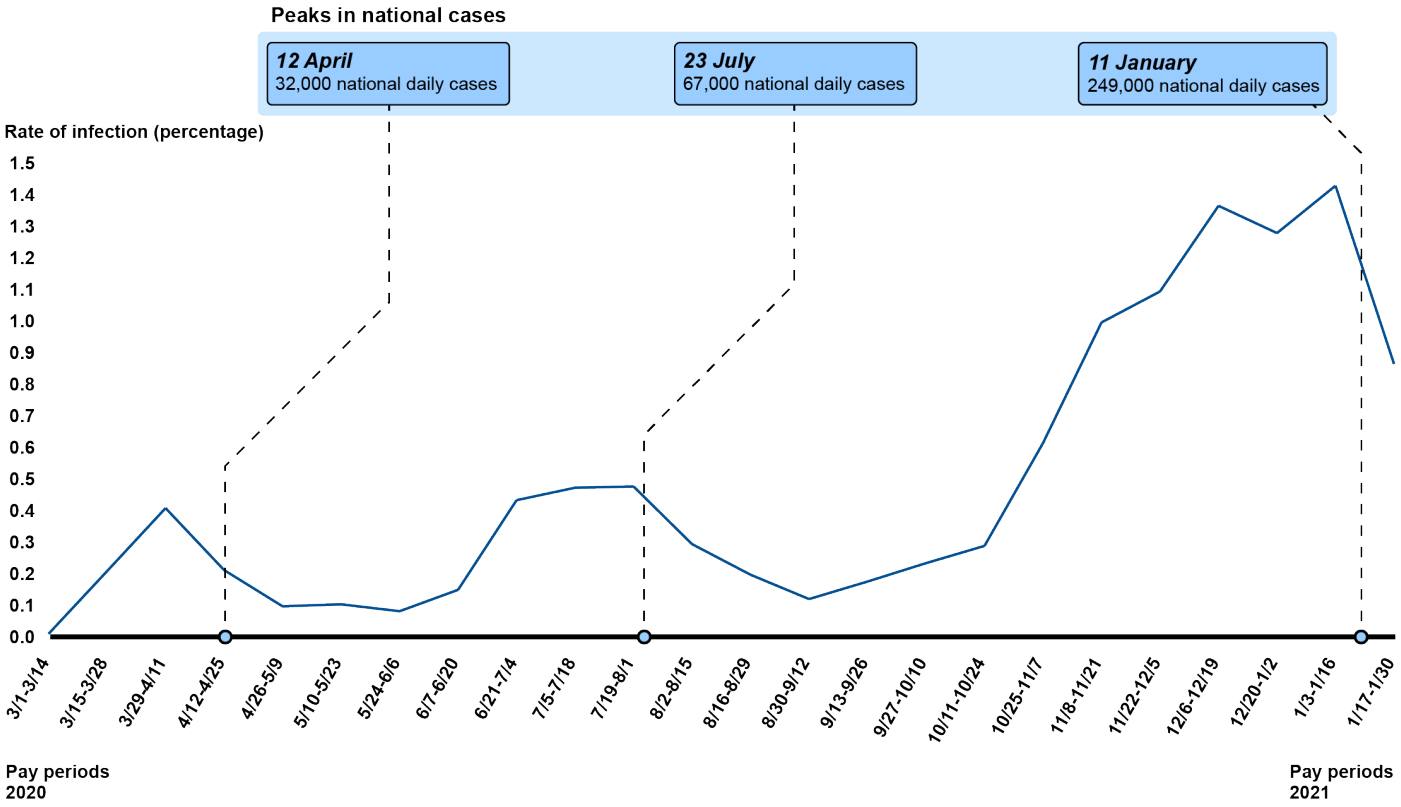
Between March 1, 2020 and January 31, 2021, TSA reported that 5,456 out of approximately 48,000 TSOs (more than 11 percent) were diagnosed with COVID-19. TSA cannot confirm whether TSOs contracted COVID-19 while at work, because TSA's contact tracing process does not consider TSO activities and contacts outside of work.[22] Moreover, TSA does not provide access to testing for its employees. However, TSA does require local TSA management to report confirmed cases of COVID-19 in their workforce.[23] TSO infections increased as nationwide cases increased, and generally, the peaks in newly reported COVID-19 cases among TSOs are consistent with nationwide peaks in new cases on April 12, 2020, July 23, 2020, and January 11, 2021 (see fig. 3).

[21]See *Guidance on Preparing Workplaces for COVID-19*, OSHA 3990-03 2020, and https://www.osha.gov/coronavirus/control-prevention/border-protection-transportation-security, respectively.

[22]Upon receiving notification from an employee that their healthcare provider believes they have COVID-19, or the employee has received a positive test result, TSA staff are to alert local public health authorities, who may then conduct additional contact tracing.

[23]Specifically, local TSA management is required to report confirmed cases of COVID-19 in their workforce by entering incident information into the electronic WebEOC system. The system allows for two types of confirmation: 1) that the employee has signs and symptoms clinically compatible as identified by a healthcare provider, but the employee was not tested; or was tested and the result is pending; 2) that the employee received a laboratory-confirmed positive result. The system does not require management to indicate what type of testing was performed to determine the diagnosis. According to TSA guidance, employees must submit medical documentation within 14 days of COVID-19 diagnosis. Acceptable documentation must be from a local public health official or a healthcare provider who works in coordination with a public health official, and it must indicate when the employee was diagnosed as having COVID-19.

Figure 3: Percentage of Transportation Security Administration (TSA) Transportation Security Officers Diagnosed with COVID-19 by Pay Period, March 1, 2020 through January 31, 2021, Compared to Peaks in Newly Reported Cases Nationwide



Source: GAO analysis of data from TSA and the Centers for Disease Control and Prevention (CDC). | GAO-21-364

Note: This figure shows newly reported cases of COVID-19 reported to TSA by Transportation Security Officers (TSOs). It includes both (a) employees who have signs and symptoms clinically compatible as identified by a healthcare provider, but the employee was not tested, or was tested and the result is pending and (b) employees who received a laboratory-confirmed positive result. TSA cannot confirm whether TSOs contracted COVID-19 on the job. This graphic does not present data for January 31, 2021, as that was the first day of a new pay period. According to TSA data, there were 16 newly reported cases of COVID-19 on that day.

National case lines represent the highest 7-day moving average of cases in the United States from March through May 2020, June through August 2020, and December 2020 through February 2021. CDC COVID-19 counts are subject to change due to delays or updates in reported data from states and territories. We calculated the relative difference between the average of new cases in the 14-day windows around the peaks in the spring of 2020, summer of 2020, and the winter of 2020-21, as of data available from the CDC Data Tracker on February 25, 2021.

Pay Period	Rate of Infection (percentage)
3/1-3/14	0.009956
3/15-3/28	0.208358
3/29-4/11	0.407893
4/12-4/25	0.211753
4/26-5/9	0.09707
5/10-5/23	0.103387
5/24-6/6	0.08146
6/7-6/20	0.149129
6/21-7/4	0.433007
7/5-7/18	0.472399
7/19-8/1	0.476338
8/2-8/15	0.293897
8/16-8/29	0.196982
8/30-9/12	0.11997
9/13-9/26	0.175424
9/27-10/10	0.23367
10/11-10/24	0.28832
10/25-11/7	0.613932
11/8-11/21	0.995754
11/22-12/5	1.0937
12/6-12/19	1.36485
12/20-1/2	1.27859
1/3-1/16	1.42851
1/17-1/30	0.864352

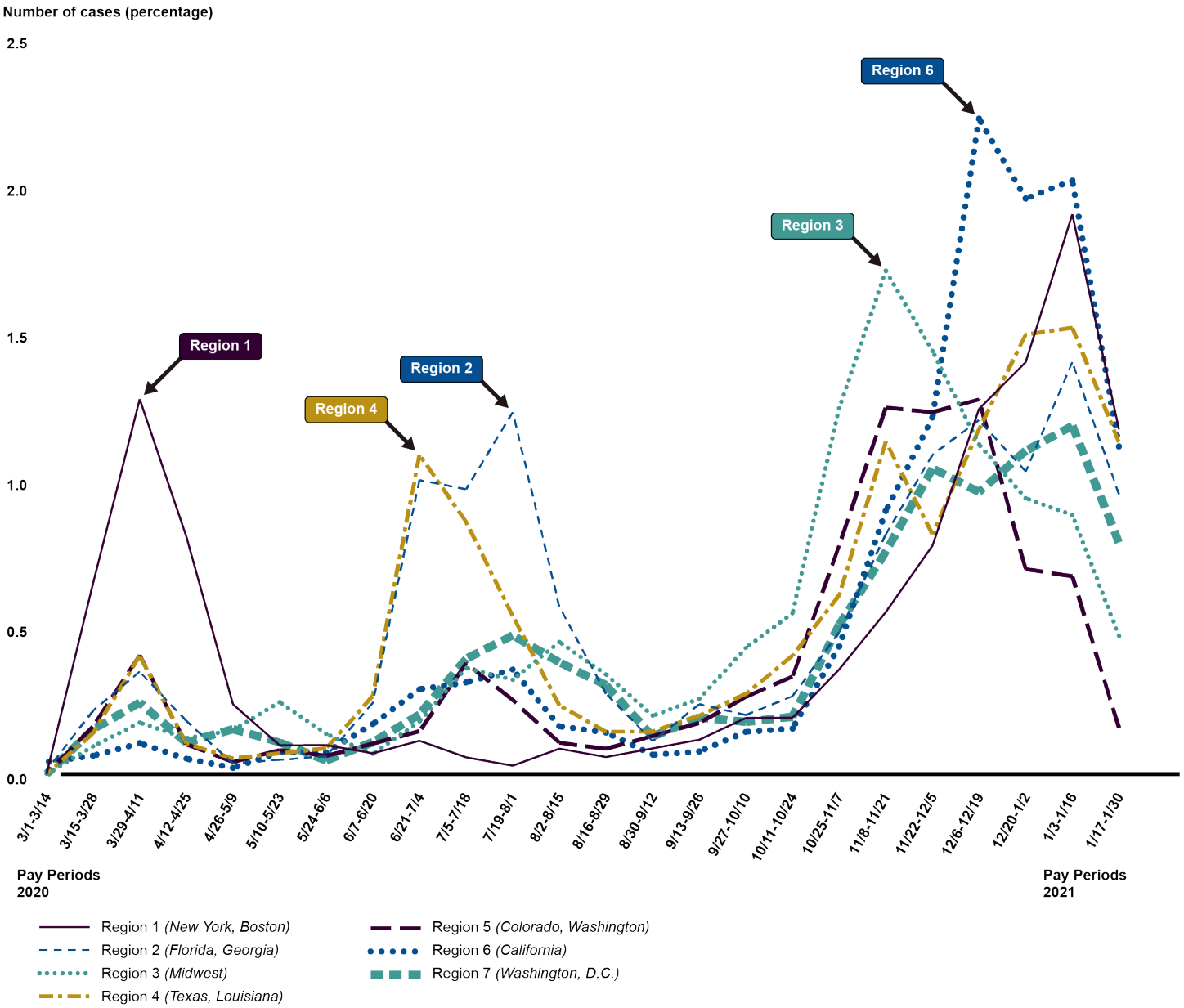
A slightly higher percentage of TSOs stationed at category X airports were diagnosed with COVID-19 from March 2020 through January 2021, compared to TSOs at smaller airports. Specifically, 13.1 percent of TSOs working at category X airports were diagnosed with COVID-19. In comparison, between 8 and 10 percent of TSOs working at each of the other airport categories were diagnosed with COVID-19.[24] TSA officials stated that category X airports are typically located in dense urban areas,

[24]Specifically, category I airports had 9.8 percent of TSOs report cases of COVID-19, while category II had 8.9 percent, category III had 8.0 percent, and category IV had 9.6 percent.

and this may contribute to the higher proportion of infections among workers at these airports.

According to our analysis, the region with the highest percentage of cases varied throughout the pandemic. Generally, the region that had the highest cases among TSOs in each time period was the same as the U.S. region that had the highest cases among adults overall. In the early weeks of the pandemic, the highest percentage of cases among TSOs occurred in the northeast region, where Boston and New York City area airports are located. In July and part of August, the highest number of cases occurred in the southeast region, where Atlanta and Florida airports are located. In December and part of January, the highest number of cases occurred in the west region, where California airports are located (see fig. 4).

Figure 4: Percentage of Transportation Security Officers Newly Diagnosed with COVID-19 by Transportation Security Administration (TSA) Geographic Region and Pay Period, March 1, 2020 through January 31, 2021



Source: GAO analysis of TSA data. | GAO-21-364

Note: This figure shows newly reported cases of COVID-19. It includes both (a) employees who have signs and symptoms clinically compatible as identified by a healthcare provider, but the employee was not tested, or was tested and the result is pending and (b) employees who received a laboratory-confirmed positive result. TSA cannot confirm whether Transportation Security Officers contracted COVID-19 on the job. This graphic does not present data for January 31, 2021, as that was the first

day of a new pay period. According to TSA data, there were a total of 16 newly reported cases of COVID-19 on that day.

PAY PERIOD	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7
5	0	0.0118793	0	0	0	0.0413565	0
6	0.648634	0.215517	0.0941493	0.139665	0.161878	0.062422	0.151538
7	1.27424	0.34839	0.175391	0.401747	0.404613	0.104592	0.24305
8	0.807237	0.180549	0.121786	0.105042	0.101543	0.0525431	0.106854
9	0.237364	0.0361838	0.149072	0.0526408	0.0407083	0.0210859	0.153374
10	0.0979432	0.0483092	0.244765	0.0702617	0.0817996	0.073988	0.107626
11	0.0984114	0.060584	0.136705	0.0882145	0.0617792	0.0742548	0.0463535
12	0.0705418	0.243043	0.0685401	0.265534	0.10337	0.170213	0.108477
13	0.113363	0.999634	0.179162	1.08502	0.145742	0.288308	0.202398
14	0.0569638	0.968256	0.36031	0.85699	0.376648	0.311259	0.391727
15	0.0286082	1.22956	0.320781	0.537442	0.252207	0.35545	0.47118
16	0.0864429	0.569236	0.448934	0.233771	0.106022	0.162496	0.379867
17	0.0579458	0.273156	0.338887	0.144118	0.0858922	0.141504	0.302259
18	0.0873362	0.112094	0.198638	0.144456	0.129618	0.065624	0.127898
19	0.116857	0.237857	0.256155	0.19942	0.173837	0.0768302	0.192802
20	0.19098	0.20103	0.429	0.273075	0.262927	0.143314	0.177763
21	0.191684	0.265085	0.546605	0.403078	0.331492	0.154987	0.19509
22	0.355766	0.481867	1.24277	0.607959	0.776915	0.434057	0.50695
23	0.550759	0.814664	1.71114	1.12942	1.24527	0.894254	0.756206
24	0.776119	1.08515	1.43791	0.81557	1.2296	1.21185	1.0384
25	1.24121	1.20343	1.12033	1.17209	1.27346	2.22747	0.958995
26	1.39997	1.02815	0.937592	1.49421	0.696316	1.95547	1.09872
1	1.90246	1.40013	0.880282	1.51657	0.672495	2.017	1.18314
2	1.17199	0.951157	0.470104	1.12867	0.157374	1.11326	0.786611

TSA Has Taken Various Steps to Reduce the Spread of COVID-19

TSA's Initial Actions Included Conducting COVID-19 Risk Assessments and Implementing Its Pandemic Response Base Plan

Starting in January 2020, TSA began providing COVID-19-related guidance to TSOs and other TSA staff at airports and initiated its agency-wide response upon the declaration of a global pandemic 2 months later. For example, TSA began issuing employee bulletins, responses to frequently asked questions, and other COVID-19-related guidance to educate TSOs about prevention strategies throughout January, February, and early March 2020. According to TSA, this information was consistent with CDC guidance. TSA has continued to provide information and guidance to staff into 2021. In addition, according to TSA's base plan, TSA is to initiate formal management response activities (such as the formation of a management group to coordinate response activities) upon the declaration of a pandemic. Therefore, about a week before the World Health Organization declared COVID-19 a pandemic in March 2020, TSA began to implement the activities delineated within its base plan to oversee the development of workplace and administrative controls to reduce workforce illness and absenteeism due to COVID-19.

TSA implemented two key base plan activities early in the pandemic—assessing TSOs' risk of contracting COVID-19, and developing recommendations (based on OSHA and CDC guidance) to address it. Specifically, TSA's Office of Occupational Safety, Health, and Environment performed risk assessments (first in March 2020 and again in July 2020) to gauge the risk COVID-19 posed to TSA employees, including TSOs. According to TSA, the DHS Office of Human Capital determined these assessments were consistent with the DHS Workforce Protection Plan. According to DHS, the TSA plan is evaluated for consistency with CDC and OSHA guidance. The TSA risk assessments resulted in, among other things, recommendations for PPE. For example, TSA's March 2020 risk assessment recommended that TSOs wear nitrile gloves, but surgical mask and N95 respirator use were voluntary at the checkpoint. We discuss these and other PPE changes later in this report.

Other key activities TSA implemented from its base plan included reviewing existing policies and procedures to identify opportunities to reduce virus transmission. Specifically, these involved reviews of

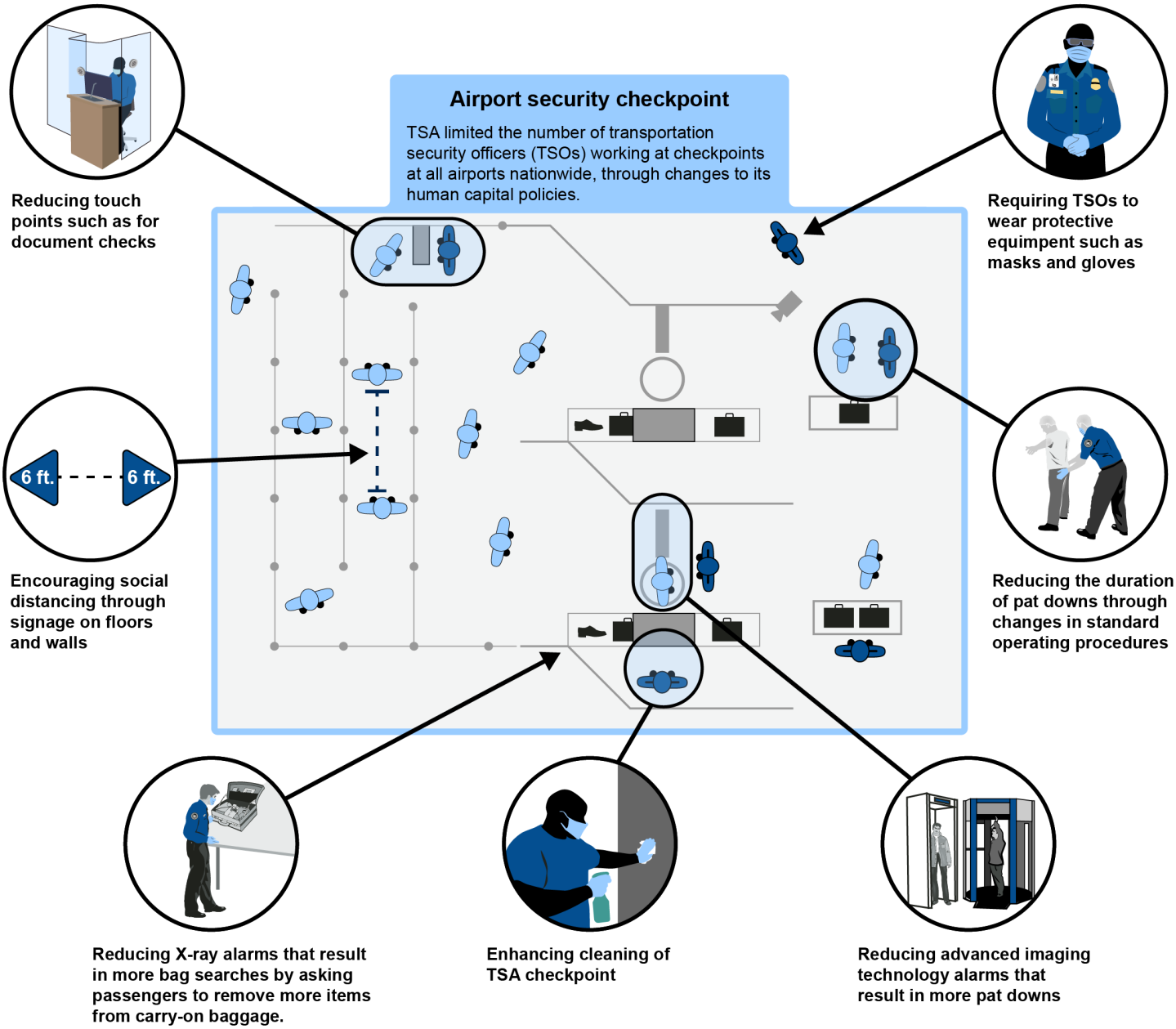
- TSA's checkpoint procedures to identify opportunities to reduce transmission of COVID-19 at checkpoints, consistent with CDC and OSHA guidelines;
- TSA's human capital leave policies to determine how they might be used to reduce the spread of COVID-19 at the checkpoint; and
- TSA's acquisition and procurement policies. According to TSA, it streamlined opportunities to acquire necessary consumables, such as PPE, acrylic shield barriers (commonly known as plexiglass), and other tools TSA determined that passenger checkpoints needed to reduce the spread of COVID-19.

See appendix II for more information on TSA's management actions and procedural changes in response to the COVID-19 pandemic.

Throughout the Pandemic, TSA Revised its PPE Requirements, Screening Procedures, Use of Technologies, and Human Capital Policies

TSA made numerous changes to reduce the spread of COVID-19 at airport checkpoints. These included increasing its PPE requirements, revising screening procedures, modifying existing screening technology, and amending its human capital policies. FSDs, airport operators, union officials, and screening contractors we spoke with were generally pleased with the changes TSA had made. Some groups identified areas for improvement, such as the supply and quality of PPE, physical distancing requirements, and contact tracing, which TSA headquarters officials have been working to address. Figure 5 provides an overview of the key measures TSA has implemented at airport checkpoints in response to COVID-19.

Figure 5: Transportation Security Administration (TSA) Key Changes to Checkpoint Screening to Reduce the Spread of COVID-19



Source: GAO analysis of TSA information; Art Explosion (clip art). | GAO-21-364

Note: TSA made changes to its screening process to limit the spread of COVID-19. That screening process begins when passengers enter the airport terminal security checkpoint and provide TSOs their boarding passes and identification for review. Screening typically includes passing through either a walk-through metal detector or advanced imaging technology machine (the latter of which identifies

objects concealed on the person) and using X-ray equipment to screen the passenger's accessible property. In the event that any of these screening devices identify a potential item of concern, TSA conducts additional security measures, which may include pat-downs and bag searches.

Changes in PPE Requirements and Stakeholder Views

Since the beginning of the pandemic, TSA increased its TSO PPE allowances and requirements to ensure consistency with OSHA and CDC guidance. These ranged from allowing TSOs to use surgical masks and N95 respirators voluntarily in January and March 2020, respectively, to requiring that TSOs wear surgical masks and eye protection or face shields in May and July 2020, respectively.[25] Figure 6 shows the changes TSA implemented for TSO use of PPE in 2020.

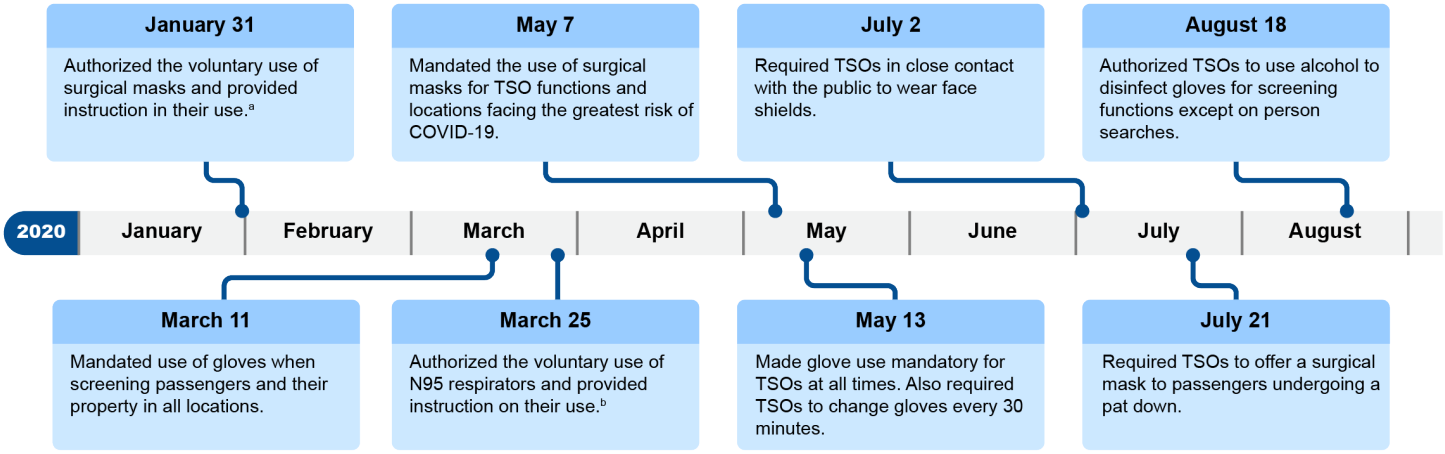
In February 2021, TSA also began enforcing requirements for the use of masks among travelers related to an executive order to promote COVID-19 safety at domestic airport passenger screening checkpoints.[26] The order, and subsequent Emergency Amendment by TSA, requires travelers aged 2 years or above to wear masks when they are in airports and while on passenger aircraft. According to TSA officials, TSOs who work as travel document checkers are to enforce this requirement at the entrance to the checkpoint.[27]

[25]By letter dated June 18, 2020, the U.S. Office of Special Counsel referred for investigation a whistleblower disclosure alleging that TSA did not take appropriate measures to protect its frontline workforce against the spread of the novel coronavirus (COVID-19), among other things. TSA's Investigations Division conducted an investigation into the allegations, and issued a report. As of March 2021, the U.S. Office of Special Counsel is reviewing the report.

[26]Executive Order, 13998, *Promoting COVID-19 Safety in Domestic and International Travel*, 86 Fed. Reg. 7205, (Jan. 26, 2021). The mask order, which was due to expire May 11, 2021, was extended by TSA Emergency Amendment until September 13, 2021. TSA Emergency Amendment 1546-21-01A (April 30, 2021).

[27]According to TSA, passengers who refuse to wear a mask will not be permitted to enter the screening process and will be denied entry to the secure area of the airport, which includes the terminal and gate area. Depending on the circumstances, those who refuse to wear a mask may be subject to a civil penalty for attempting to circumvent screening requirements, interfering with screening personnel, or a combination of those offenses. See Transportation Security Administration Mask Mandate Security Notice (Part Nine), February 1, 2021.

Figure 6: Transportation Security Administration (TSA) Changes to Personal Protective Equipment Requirements for Transportation Security Officers (TSOs) in 2020



Source: GAO analysis of TSA information. | GAO-21-364

[a]Surgical masks are loosely fitting masks that help block large particle droplets and splatter from reaching the wearer's nose and mouth and that reduce the exposure of others to the wearer's saliva and secretions.

[b]N95 respirators are tight fitting face pieces that require a proper seal, which forces inhaled air to be pulled through the respirator's filter material. They are used to filter smaller airborne contaminants.

Stakeholder views on changes to PPE requirements. FSDs, union officials, and screening contractors we spoke with were generally satisfied with PPE changes, but expressed concerns with the availability and quality of some PPE early in the pandemic. Specifically, FSDs from six of eight of our sample airports expressed concerns about the quality and availability of PPE, such as gloves, masks, and face shields, in the early months of the pandemic—a period when PPE availability throughout the U.S. was lacking. All FSDs who indicated there were problems with PPE early in the pandemic said the situation generally improved throughout 2020. We interviewed union officials representing screening staff at five of our sample airports. All five of them expressed concerns about PPE availability, and four said the situation with PPE had not improved at the time of our interviews in fall 2020.[28] Officials from one of the two Screening Partnership Program contractors we spoke to said they prevented PPE shortages at their airport by proactively procuring PPE beginning in January—well before the pandemic was declared.

[28]Our sixth airport is part of TSA's Screening Partnership Program, and therefore does not have a TSO union representative.

TSA headquarters officials acknowledged that obtaining the needed supplies of PPE was challenging for TSA early in the pandemic, and said the agency has taken steps to address shortages. For example, starting in August 2020, to address potential glove shortages, TSA allowed TSOs to sanitize rather than change gloves in certain circumstances, such as when duties do not involve passenger pat-downs. Also in August 2020, according to TSA officials, TSA began to acquire a 60-day stockpile of PPE. Consequently, TSA officials explained that since mid-fall 2020, the agency typically has had a 2 to 3-month stockpile of PPE, in addition to a 60-day inventory of PPE sufficient to meet requirements for 100 percent of security screening operations.

Changes to Screening Processes and Stakeholder Views

In addition to PPE changes, TSA revised its checkpoint screening standard operating procedures and introduced new processes, such as contact tracing, and other best practices to address COVID-19.[29] To implement these changes, TSA issued new standard operating procedures for screening at checkpoints, new procedures for contact tracing when FSDs learn of confirmed or possible cases of COVID-19 among TSA staff or contract staff at airports, and other guidance on cleaning and best practices for protecting TSOs and passengers at the checkpoint. Figure 7 lists new procedures and guidance TSA issued in response to COVID-19.

[29]TSA assessed all proposed changes to TSA's standard operating procedures to ensure none would have a negative impact on security. As a result of its assessment, it did not implement two of the proposed changes because it determined they would pose a significant risk to security. One of these changes involved TSOs' handling of passenger identification and another involved performing pat-downs.

Figure 7: Transportation Security Administration (TSA) Guidance Issued in Response to COVID-19 in 2020

Title and date of TSA guidance	Description of guidance
Guidance for Cleaning and Disinfection of TSA Workspaces *(March 2020)*	TSA's guidance provided guidelines for cleaning and disinfection of the checkpoint area and screening equipment. Among other things, the guidelines call for routine cleaning of frequently touched surfaces using 70 percent isopropyl alcohol and recommend cleaning products for both high-touch surfaces and all screening equipment.
Contact Tracing Guidance *(March 2020)*	TSA issued contact tracing guidance to be performed by TSA management for all cases of laboratory confirmed or suspected COVID-19 among Transportation Security Officers (TSO) and other TSA airport staff. The guidance requires that FSDs identify any staff who were in close contact with infected individuals, and to send these staff home on excused paid leave for 14 days.[a]
Coronavirus Disease Standard Operating Procedures *(May 2020)*	TSA'S COVID-19 standard operating procedures made changes to limit person-to-person contact during the screening procedures that TSOs must carry out at passenger checkpoints. Key changes include • requiring that TSO attempt to distance throughout the checkpoint from passengers and one another; • minimizing the number of screening activities that require TSOs to touch objects or passengers (touch points) by, for example, asking passengers to remove more items from carry-on baggage to reduce the potential for alarms that require bag searches; • reducing the duration of pat-downs through changes in standard operating procedure; • mandating TSOs use gloves at all times and change gloves after every pat-down; and • requiring the single use of explosives trace detection swabs.[b]
TSA Communicable Disease Response Playbook. ***(COVID-19 Playbook)*** *(June 2020)*	TSA officials developed the *COVID-19 Playbook* to identify and communicate to the field best practices for decreasing touch points and increasing physical distancing. Suggested practices include, among others • floor decals and signage to encourage physical distancing throughout the checkpoint; • the use of acrylic shield barriers at points throughout the checkpoint to protect TSOs who must interact closely with passengers (e.g., the travel document checker or the TSO assisting with divestment of personal belongings prior to the X-ray scan); and • designating a TSO to act as an Infection Control Monitor, to ensure that required procedures and suggested practices are being implemented. In addition, the *COVID-19 Playbook* aggregates all TSA COVID-19 policies, to effectively communicate requirements and suggested best practices to the field. For example, it includes a copy of the COVID-19 standard operating procedures.

Source: GAO analysis of TSA information. | GAO-21-364

[a]The guidance when issued defined close contact as being within 6 feet for 10 minutes or more (cumulative) with the employee while the employee had any symptoms. The Centers for Disease Control and Prevention has since updated its close contact definition. According to this guidance as of March 2021, a close contact is someone who was within 2 meters of an infected person for at least 15 minutes within a 24-hour period starting from 2 days before illness onset (or, for asymptomatic cases 2 days prior to positive specimen collection) until the time the patient is isolated.

[b]Explosives trace detection technology uses a swab to test for the presence of explosive residue or vapors. TSA uses the technology on passengers and their belongings.

Stakeholder views on changes to screening procedures. Most FSDs that we spoke with reflected positively on TSA's COVID-19-related procedures. Specifically, FSDs representing seven of the eight airports we contacted made positive comments about TSA's new COVID-19 procedures or TSA's efforts to support their implementation. For example,

one FSD said TSA's procedures were timely and adequate. Another FSD said that TSA was in constant communication about the measures it was taking, which was reassuring.

FSDs and airport operators were less positive about implementing guidance and procedural changes as passenger volumes begin increasing from the lowest pandemic levels. Specifically, all eight FSDs and five of the six airport operators we spoke with said that physical distancing will be a challenge going forward once passenger volumes increase due to limited space at airports and the need to distance passengers throughout checkpoints. For example, the FSD and operator at one airport commented that physical distancing requirements at pre-pandemic passenger levels would result in lines that would stretch from the checkpoint into the airport parking lot.

In addition, FSDs expressed concerns about the potential for COVID-19 screening procedures to increase passenger wait times at checkpoints as passenger volumes increase, and TSA headquarters officials agreed. According to TSA, at the start of the pandemic, TSA headquarters officials encouraged FSDs in conference calls to ensure that checkpoint wait times should not exceed 10 minutes to limit passenger and TSO exposure to one another at the checkpoints. However, five of eight FSDs told us that if physical distancing requirements remain and passenger volumes continue increasing, a 10-minute wait time for passengers at screening checkpoints will not be possible. TSA's own research has confirmed these concerns. In summer and fall of 2020, TSA conducted two rounds of data collection activities to assess the impacts of COVID-19 procedures on checkpoint operations. At the time, passenger volume was 50 percent or less than it was the previous year. According to TSA, these assessments indicated a reduction in the rate of passenger throughput (i.e., passengers processed through checkpoints) of about 30 percent to more than 50 percent. TSA will conduct a third round of data collection beginning in April and continuing through August of 2021. In December 2020, TSA told us that to mitigate the impact of social distancing on passengers' queues and wait times, they directed FSDs to open checkpoint lanes at lower passenger throughput rates.[30]

[30]According to TSA, it has traditionally staffed airports to avoid wait times in excess of 20 minutes but with the advent of COVID-19, it has been working to keep wait times to less than 10 minutes. To support this change, passenger throughput used in staffing models were reduced by 20 percent (150 passengers per lane reduced to 120 passengers per lane).

Stakeholder views on contact tracing and cleaning. None of the FSDs we interviewed reported any difficulties implementing contact tracing and cleaning guidance. With respect to cleaning guidance, all FSDs reported that enhanced cleaning is performed by contractors or airport employees. In addition, two FSDs reported that additional cleaning is conducted when a positive COVID-19 case is confirmed, and one official representing a screening contractor at an airport staffed by private sector screeners said it created teams that went around the airport cleaning checkpoints continuously.[31]

With respect to contact tracing, six of the eight FSDs we spoke with discussed their efforts to conduct contact tracing to reduce the spread of the virus and keep employees safe.[32] FSDs from our sample airports reported using methods such as interviews and reviews of closed circuit television (CCTV) footage to identify close contacts among TSA employees while they were at work during the days leading up to their positive diagnosis.[33] In all cases, these FSDs reported conducting the contact tracing themselves, or in collaboration with local TSA or airport management or human resources staff. For example, the FSD at one airport reported creating a surge workforce of mission support and human resources staff, inspectors, terminal operators, and payroll employees to assist with contact tracing during a period when many staff at the airport had been diagnosed with the virus.

Some TSO union officials we interviewed reported that TSOs at their airports were confused by the contact tracing process. Specifically, we spoke with union officials at five airports, and officials from two of these airports stated that some TSOs believed they had interacted with infected colleagues, but had not been identified for quarantine through the FSD's

[31]It is TSA's policy after a COVID-19 case is confirmed to notify the airport authority or building management and to ensure the area is cleaned consistent with CDC and local health department guidance.

[32]The other two FSDs did not discuss contact tracing in response to our general question about their experiences implementing TSA's policies and procedures.

[33]The guidance advises FSDs to identify close contacts by looking at the employee's schedule and work location, and speaking with the employee about where he or she had been in the workplace (e.g., break room).

contact tracing.[34] Union officials at one of these airports told us that TSOs reported taking steps to get tested, despite not being identified through contact tracing. TSA has not pursued a program to facilitate testing for TSOs who believe they have been exposed to COVID-19, because, according to TSA, TSOs may use their healthcare provider and public health offices for testing. In addition, TSA implemented a vaccination program, which we discuss later in this report.[35]

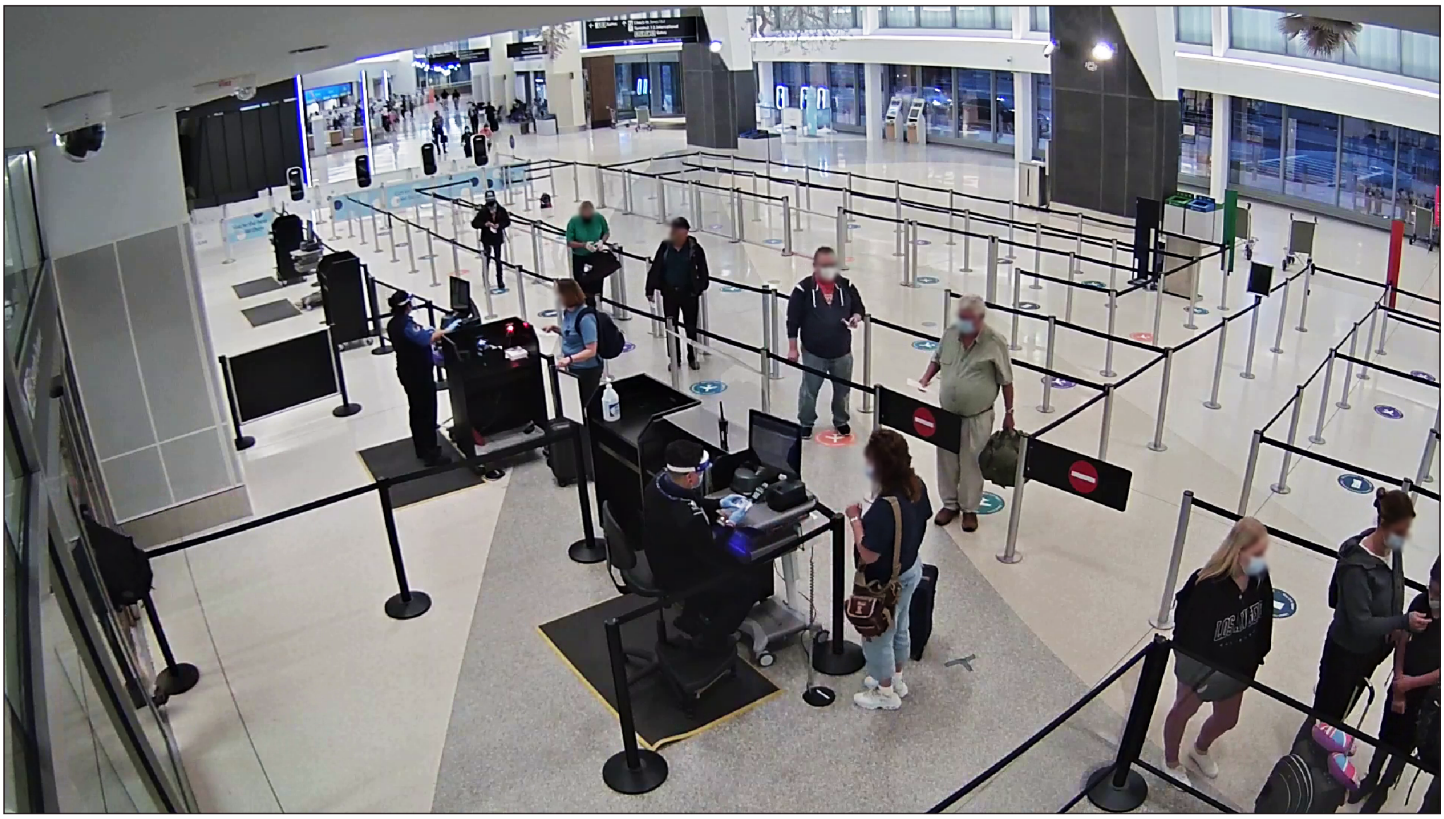
Stakeholder views on other guidance. All eight of the FSDs that we spoke to reported taking steps identified in TSA's *COVID-19 Playbook* to encourage distancing, such as by installing plexiglass, placing social distance markers on the floor, adding signage encouraging distancing, and removing seats from or otherwise reconfiguring employee break rooms. However, union officials representing TSOs at all five of our sample airports with TSOs reported concerns with management's implementation of *COVID-19 Playbook* practices. For example, union officials at one airport said that the decals on the floor had degraded over time due to heavy foot traffic, and have either been removed or were now illegible. In addition, union officials at three airports told us they see employee break rooms as too small to allow appropriate distancing, and that TSOs should be allowed to take breaks and meals at alternate locations.

Figure 8 shows passengers physical distancing at a TSA commercial airport checkpoint during the COVID-19 pandemic.

[34]The guidance, which aligns with guidance from the Centers for Disease Control and Prevention, was updated in April 2020 and defines close contact as being (1) within 6 feet for 10 minutes or more (cumulative) with the employee with laboratory-confirmed or suspected COVID-19 or (2) being directly coughed on in the face by the employee with laboratory-confirmed or suspected COVID-19. Additionally, the close contact must occur while the employee with laboratory-confirmed or suspected COVID-19 had any symptoms, or during the previous 48 hours before symptom onset. TSA requires its management (or screening contractors) at airports to report confirmed cases of COVID-19 in their workforce by entering incident information into the electronic WebEOC system.

[35]According to the DHS Chief Human Capital Office, DHS awarded a contract for the provision of COVID-19 testing in November 2020. The decision to facilitate testing is to be made by each DHS component (such as TSA) in conjunction with the component's medical officer, and as of March 2021, TSA has not participated in this program.

Figure 8: Passengers Physical Distancing at a Transportation Security Administration (TSA) Commercial Airport Checkpoint, August 2020



Source: Closed-circuit television footage from a commercial airport. | GAO-21-364

FSDs, union officials, and screener contractors from five of eight of our sample airports described practices implemented locally at their airports that could address some of the concerns union officials identified to us. For example, officials from two airports reported that TSOs were organized into teams, and sent on breaks together in order to minimize the number of coworkers that each would come in contact with throughout the workday. In another example, officials from one airport told us that employees are encouraged to social distance in empty terminals or to eat lunch outside rather than use the break room. Officials at two airports told us that to limit employees' exposure to others, TSOs were allowed to park closer to the airport terminals in which they work, so they would not have to ride airport shuttles.

According to TSA's *COVID-19 Playbook*, TSA is to periodically update this guidance as the agency develops new procedures. TSA

headquarters officials responsible for updating the guidance told us they hold regular meetings with field health and safety officials and FSDs to share best practices and other locally implemented measures to prevent the spread of COVID-19 like the ones we heard about in our interviews with FSDs. Moreover, TSA has updated its *COVID-19 Playbook* three times since its release on June 20, 2020, to reflect its evolving understanding of COVID-19 and additional mitigation strategies being implemented by FSDs.

Changes to Existing Technologies

In addition to revising procedures, TSA also adjusted checkpoint technologies to reduce the spread of COVID-19. Specifically,

- To reduce TSO contact with passengers, TSA permitted FSDs to rotate credential authentication technology machines (used to validate passenger identification documents prior to entering the checkpoint) toward passengers to permit their self-scanning of documents. As of January 2021, TSA had deployed 1,053 credential authentication machines across 119 commercial airports. TSA plans to deploy 1,520 units by the end of calendar year 2021, starting with large airports (categories X and I).
- TSA made changes to the detection algorithms used by the advanced imaging technology machines to reduce the number of false alarms of passengers and baggage identified as needing additional screening.[36] This was intended to reduce the amount of close physical contact between passengers and TSOs, and limited the need for TSOs to touch passengers' personal belongings.
- For the walk-through metal detector, TSA directed TSOs to use a handheld metal detector to pinpoint alarms on passengers, so that they could conduct briefer, more targeted pat-downs to resolve alarms.

Figure 9 shows a TSA credential authentication technology machine deployed at a passenger screening checkpoint.

[36]TSA assessed all proposed changes to TSA's standard operating procedures to ensure none would have a negative impact on security.

Figure 9: Transportation Security Administration (TSA) Credential Authentication Technology Machine Deployed at a Passenger Screening Checkpoint

Source: Stephen Voss Photography. | GAO-21-364

Changes in Human Capital Policies and Stakeholder Views

TSA also implemented new human capital policies to stem the spread of COVID-19. Beginning in March 2020, TSA began introducing new human capital policies that allowed TSA managers to grant TSA employees additional paid leave and to maximize telework when possible. With respect to TSOs, these policies allowed FSDs to grant telework or use weather and safety leave for TSOs who needed to quarantine due to close contact with someone with COVID-19, and to limit the number of TSOs at the checkpoint when screening activities were not needed due to

decreased passenger volume.[37] In addition, TSA permitted TSOs to self-designate as high risk, which allowed these TSOs to be placed on extended weather and safety leave.[38]

Data show that FSDs used weather and safety leave more extensively during the pandemic to manage their TSOs at the checkpoint.[39] Specifically, TSA records indicate that FSDs permitted between 17,000 and 48,000 TSOs to use weather and safety leave per pay period from mid-March 2020 through January 30, 2021.[40] Over that period, FSDs used weather and safety leave the most from mid-March through early July 2020. Specifically, over that period, weather and safety leave accounted for between 16 and 62 percent of total time charges for TSOs. For example, at two of our sample airports, charges to weather and safety leave exceeded 70 percent of TSO time charges in at least one pay period. FSDs use of weather and safety leave decreased sharply between the pay period ending June 20 and the pay period ending July 4, falling from about 46 percent to 29 percent of hours charged. TSO charges to weather and safety leave continued to fall over the year to about 5 percent of hours charged by the end of December 2020, before rising to over 10 percent through January 2021 (see fig. 10).

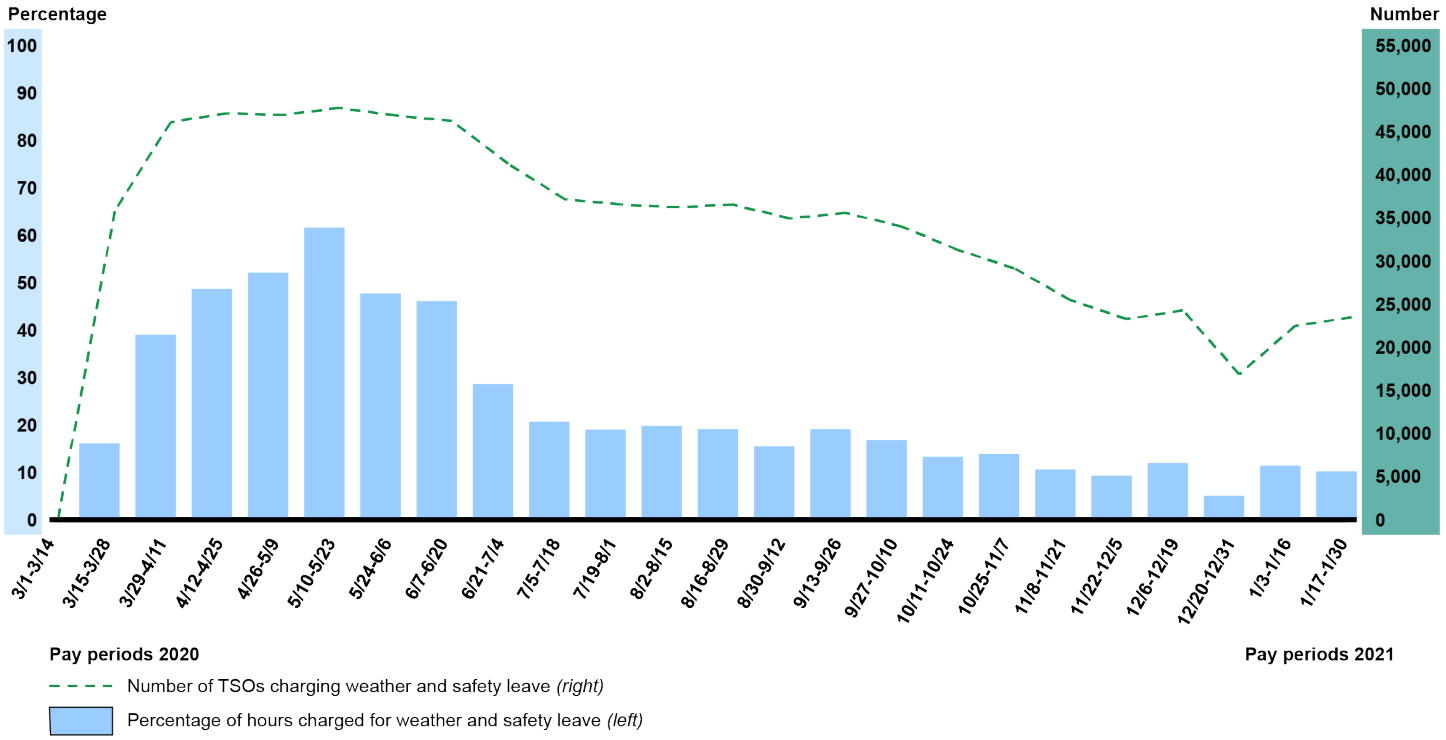
[37]An agency may approve weather and safety leave, a form of paid leave, if an employee (or a group of employees) is prevented from safely traveling to or performing work at an approved location. Employees may use weather and safety leave without the loss of leave to which they are otherwise entitled or a reduction in the pay of the employee or employees. TSA's COVID-19 human capital policies allowed FSDs to grant weather and safety leave due to reduced operational needs resulting from reduced passenger volume, among other things. In addition, TSA issued a Human Capital Advisory Memo on March 12, 2020 stating that an employee with a positive COVID-19 diagnosis would be placed on administrative leave/excused absence for a period not to exceed 14 calendar days.

[38]TSA's COVID-19 human capital policies define "high risk" as adults 65 and older and people with serious medical conditions like heart and lung disease, diabetes, high blood pressure, and compromised immune systems. Pregnant women and women who are breastfeeding are also considered at risk. Employees granted weather and safety leave are provided a notice that details the reason for the weather and safety leave.

[39]TSA also allowed TSOs to take weather and safety leave to attend to personal affairs related to the pandemic. TSA is not able report how much weather and safety leave has been used for each of the various reasons permitted by TSA's human capital policies. TSA issues a notice to employees identifying the reason for weather and safety leave—e.g., quarantine, reduced staffing requirements, etc.—but all use of weather and safety leave is coded the same in TSA's time and attendance system.

[40]These employee counts are for the number of employees using weather and safety leave each pay period. The same employee may use weather and safety leave in multiple pay periods.

Figure 10: Percent of Transportation Security Officer (TSO) Hours Charged to Weather and Safety Leave and the Number of TSOs Doing So, March 2020 through January 2021



Source: GAO analysis of TSA data. | GAO-21-364

Date	% of TSO Hours Charged to W&SL	Number of TSOs using W&SL
3/1-3/14	0.1	306
3/15-3/28	16.1	35765
3/29-4/11	39	46104
4/12-4/25	48.7	47124
4/26-5/9	52.1	46928
5/10-5/23	61.6	47740
5/24-6/6	47.7	46853
6/7-6/20	46.1	46226
6/21-7/4	28.6	41256
7/5-7/18	20.7	37162
7/19-8/1	19	36546
8/2-8/15	19.8	36222
8/16-8/29	19.1	36542
8/30-9/12	15.5	34921

Date	% of TSO Hours Charged to W&SL	Number of TSOs using W&SL
9/13-9/26	19.1	35580
9/27-10/10	16.8	33993
10/11-10/24	13.3	31271
10/25-11/7	13.9	29154
11/8-11/21	10.6	25446
11/22-12/5	9.3	23263
12/6-12/19	12	24270
12/20-12/31	5.1	16862
1/3-1/16	11.4	22497
1/17-1/30	10.2	23465

According to TSA, the use of weather and safety leave decreased for several reasons. First, passenger volume increased. TSA data show passenger volume increased six-fold from its low point on April 12 to September 30 (from fewer than 100,000 daily passengers nationwide to more than 600,000). In addition, TSA added an infection control monitor position, a new position using TSOs to monitor implementation of pandemic-related procedures and guidance, which added to staffing requirements.[41] Also, as previously discussed, in an effort to reduce passenger wait times, TSA asked FSDs to open additional checkpoint lanes, which required more staff. Finally, TSA eliminated the use of extended weather and safety leave for high risk TSOs on July 5, 2020, because, according to TSA officials, the agency was confident that its measures to reduce the spread of COVID-19 were able to mitigate exposure risks and made the workplace safer for all employees. TSA officials said that use of weather and safety leave dropped in late December and increased in January because staff took other leave around the end of year.

FSDs also increased their use of TSA's expanded telework flexibilities to address the pandemic, though they did not use it as extensively as weather and safety leave. TSA has a telework policy for its employees that states that TSOs are generally not allowed to telework due to the nature of the position and the requirement to be at an airport to screen passengers and baggage.[42] This limited FSDs' ability to use telework to

[41]TSA's *COVID-19 Playbook* recommends at least one ICM for every 10 TSOs.

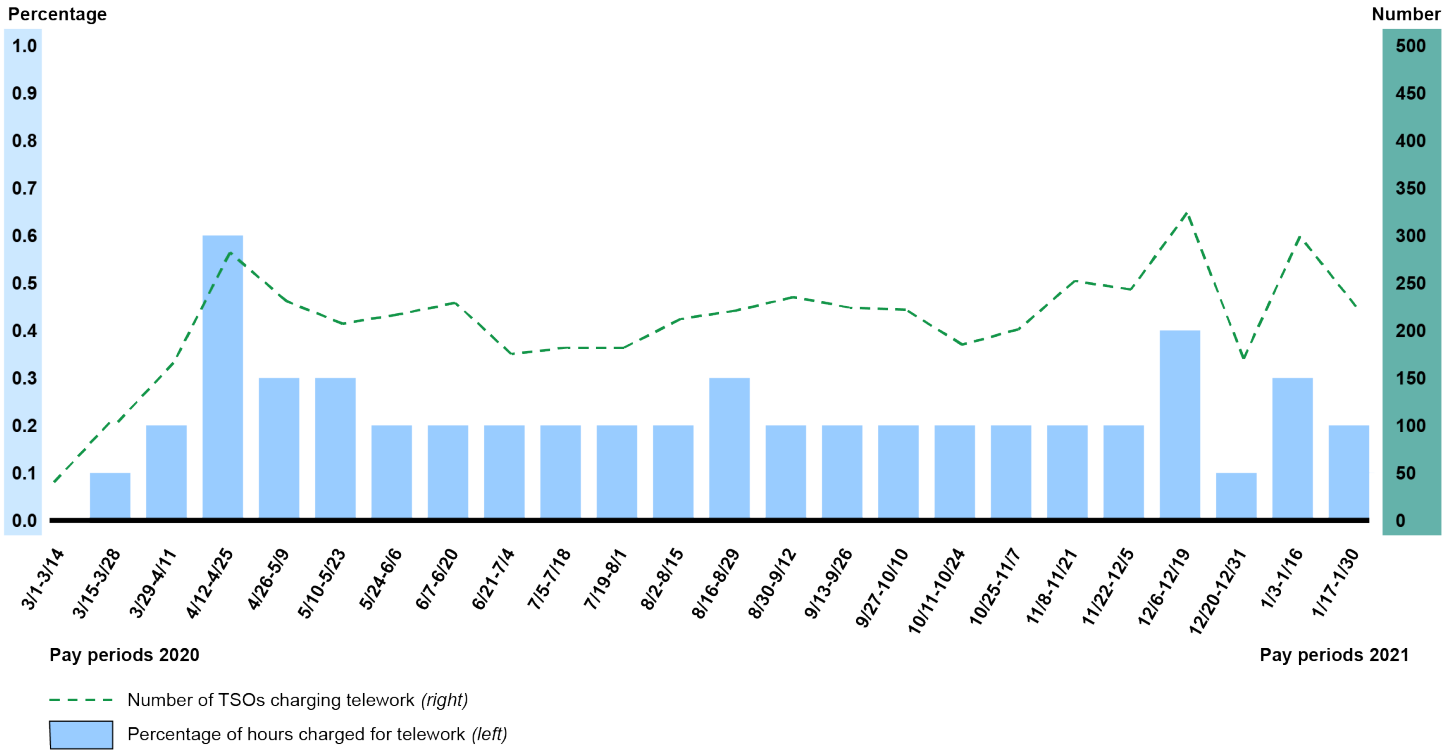
[42]TSA Management Directive No. 1100.30.5 Telework Program.

manage TSOs during the pandemic. Specifically, TSA data show that fewer than 350 of TSA's approximately 48,000 TSOs used telework each pay period from mid-March 2020 through January 2021 (see fig. 11).[43]

While FSDs used telework much less than weather and safety leave to manage TSOs, they still permitted TSOs to perform more telework during the pandemic than prior to it. For example, for the first pay period in March—prior to the introduction of TSA's pandemic flexibilities—39 TSOs charged time as telework. According to TSA headquarters officials, in order to allow TSOs to use telework, TSA created the Skills Advancement Initiative, which placed 90 TSOs in developmental opportunities that could be performed while teleworking, lasting from 1 month up to 1 year, in support of TSA headquarters program offices. In addition, TSA officials also told us that TSA took part in a 90-day interagency agreement with the Small Business Administration that allowed 330 teleworking TSOs to support call center operations assisting small businesses with obtaining COVID-19 relief.

[43]These employee counts are for the number of employees who teleworked each pay period. The same employee may telework in multiple pay periods.

Figure 11: Percent of Transportation Security Officer (TSO) Hours Charged to Telework and the Number of TSOs Teleworking, March 2020 through January 2021



Source: GAO analysis of TSA data. | GAO-21-364

Dates	% of TSO Hours Charged to W&SL	Number of TSOs using W&SL
3/1-3/14	0	39
3/15-3/28	0.1	103
3/29-4/11	0.2	166
4/12-4/25	0.6	282
4/26-5/9	0.3	231
5/10-5/23	0.3	207
5/24-6/6	0.2	217
6/7-6/20	0.2	229
6/21-7/4	0.2	175
7/5-7/18	0.2	182
7/19-8/1	0.2	182
8/2-8/15	0.2	212
8/16-8/29	0.3	221
8/30-9/12	0.2	235

Dates	% of TSO Hours Charged to W&SL	Number of TSOs using W&SL
9/13-9/26	0.2	224
9/27-10/10	0.2	222
10/11-10/24	0.2	185
10/25-11/7	0.2	201
11/8-11/21	0.2	252
11/22-12/5	0.2	243
12/6-12/19	0.4	324
12/20-12/31	0.1	170
1/3-1/16	0.3	299
1/17-1/30	0.2	225

In addition to leave flexibilities, TSA issued new human capital policies in December 2020 and January 2021 to further assist and protect its workforce—specifically programs addressing worker's compensation and vaccinations for TSA employees.[44] In December 2020, TSA issued a new version of the COVID-19 human capital policy, which included information regarding workers' compensation. The updated policy directed employees on leave resulting from a positive COVID-19 test or a clinical diagnosis of COVID-19 who believe they may have contracted COVID-19 in the workplace to refer to TSA's workers' compensation management directive for more information about benefits that may be available to them under the Federal Employees' Compensation Act.[45] As of January 2021, 91 claims for workers' compensation have been filed by TSOs who believe they contracted COVID-19 on the job.[46]

Furthermore, TSA issued a new human capital policy in January 2021 announcing the establishment of a COVID-19 vaccination program in coordination with DHS and the Department of Veterans Affairs. This DHS program is ongoing and currently offers vaccinations at 22 Veterans Health Administration sites. As of April 20, 2021, almost 16,000 TSA

[44]We did not solicit stakeholder views on these policies because they were issued after we conducted our interviews.

[45]TSA Management Directive 1100.00-6, *Workers' Compensation Program*. The Federal Employees' Compensation Act program assists federal civilian employees who have sustained work-related injuries or disease by providing appropriate monetary and medical benefits and help in returning to work.

[46]At the time of this review, 42 of the 91 claims had been accepted, 33 were still being adjudicated, and 1 was denied, among other outcomes, according to TSA officials.

employees had received their first dose of the vaccine, and more than 9,600 had received the second.

Stakeholder views on human capital policies. FSDs and TSO union officials we spoke with said they were generally pleased with the human capital policy flexibilities TSA offered in response to COVID-19.[47] Specifically, all eight FSDs we spoke with were supportive of the use of weather and safety leave. Two of eight said it helped improve employee morale and another said it made physical distancing easier because fewer TSOs were at airports. However, union officials at four of five airports also said they believe FSDs at their airports should have allowed them to use weather and safety leave more, because, at the time we spoke with them, passenger volumes were still not approaching pre-pandemic levels. As discussed earlier in this report, TSA decreased its use of weather and safety leave in July 2020 because agency leadership was confident that the measures TSA put in place had mitigated exposure risks and made the workplace safer for all.

[47]We interviewed TSO union officials at five of our eight sample airports, each of whom indicated they were pleased with TSA's use of human capital policies.

TSA's Monitoring and Analysis of Its Measures to Reduce the Spread of COVID-19 Is Limited

TSA Conducts Limited Monitoring of TSO Implementation of COVID-19 Measures

TSA monitors TSO implementation of procedures intended to reduce the spread of COVID-19 at the checkpoint through TSO supervisors and a new position called an infection control monitor (ICM)—a best practice recommended by TSA headquarters that FSDs may use to supplement monitoring conducted by TSO supervisors. However, TSA's monitoring efforts have been unsystematic and incomplete.

The Project Management Institute's *The Standard for Program Management* states that program quality control activities, such as quality reviews performed throughout the duration of a program, ensure that quality programs are implemented.[48] For example, outputs of quality reviews could include completed checklists and inspection reports, as well as measurement results. Moreover, they state that program management should ensure that proper risk policies and procedures are being followed throughout program delivery. Similarly, *Standards for Internal Control in the Federal Government* states that management should establish and operate activities to monitor the internal control system and management should use quality information to achieve its objectives.[49]

At individual commercial airports, TSO supervisors typically conduct monitoring of TSOs' implementation of required TSA safety procedures, including some measures that are important for reducing the spread of COVID-19. TSO supervisors are responsible for completing checklists at the beginning of each shift to document that the checkpoint is prepared to screen passengers. They also complete checklists at the end of each shift to document that all safety procedures were followed throughout the shift. However, these checklists do not include items specific to the revised COVID-19 safety procedures, and thus TSO supervisors are not systematically collecting data about their implementation as they do with other safety procedures. TSA headquarters officials said they ensure that

[48] *The Standard for Program Management*, Fourth Edition.

[49] GAO-14-704G.

TSO supervisors are monitoring COVID-19 and other safety procedures through regular calls with field officials, including FSDs, Designated Occupational Safety and Health Officials, and Collateral Duty Safety Officers. In these calls, TSA headquarters officials said they discuss the implementation of COVID-19 and other safety procedures and any concerns airport officials may have, based on their interactions with TSO supervisors at individual airports. However, because the TSO supervisors who conduct monitoring do not systematically record specific information within checklists about their observations on the extent to which TSOs are properly implementing COVID-19 procedures, headquarters officials have limited assurance that the information they hear on calls with FSDs and Designated Occupational Safety and Health Officials is complete.

To supplement monitoring by TSO supervisors, TSA established the ICM position in June 2020 for trained TSA employees at the airport; however, the position also does not provide TSA complete information on the implementation of COVID-19 procedures.[50] According to TSA, Lead TSOs typically perform ICM duties.[51] These duties include 1) providing TSA employees and passengers at the screening checkpoint with reminders about appropriate physical distancing and wearing of PPE, among other COVID-19 measures, and 2) ensuring that PPE, cleaning supplies, and staff are prepared at the beginning of every shift. ICMs are also to complete a headquarters-provided checklist at the beginning of each shift that asks them to identify and document whether each of 16 procedures identified on the checklist is being implemented correctly, and if not, to list the corrective actions taken during the shift. ICMs are to then to submit completed checklist information into an electronic database each day for TSA headquarters review.

While the ICM position may be a helpful resource for airports attempting to ensure COVID-19 procedures are being implemented correctly, ICMs do not provide complete information on the extent to which COVID-19 procedures are being implemented correctly. This is because TSA headquarters does not require FSDs to assign ICMs and submit checklist data, and not all FSDs have done so for the airports they oversee.

[50]TSA guidance recommends TSA field leadership at the airport assign one ICM for every 10 TSA employees on duty.

[51]A Lead TSO leads a staff of TSOs, distributes and adjusts workload and tasks among employees, and oversees the security screening team on a daily basis. The Lead TSO is also to implement security procedures and provide coaching and guidance to TSOs in performing screening duties, among other things.

Specifically, TSA officials said they created the ICM position as a best practice that FSDs may choose to implement if they have the necessary TSO resources and desire to do so. According to TSA data, TSA officials at about half of commercial airports have chosen to deploy ICMs and submit electronic checklist data as of December 31, 2020.[52]

Moreover, TSA headquarters officials who created the position said that when they did so they had expected ICMs to observe TSO behavior and provide ongoing feedback throughout their shifts. However, the ICM checklist instructs ICMs to fill it out at the beginning of their shift, before they have spent a meaningful amount of time observing whether TSOs are properly implementing ongoing COVID-19 procedures, such as correctly wearing PPE throughout the shift, changing gloves after every pat-down, or maintaining physical distance from coworkers and passengers. As a result, the checklist data that has been submitted is incomplete because it is unlikely to reflect the execution of procedures throughout a shift.

Using its current monitoring activities, TSA headquarters and FSDs are not in a position to understand the extent to which airports are experiencing challenges implementing COVID-19 procedures like the ones we observed. Specifically, we reviewed a selection of CCTV footage from a sample of six airports, and we observed examples of TSOs wearing PPE, such as surgical masks and face shields, both correctly and incorrectly at times throughout the time periods we reviewed. Specifically, we observed:

- TSOs serving as divestiture officers who were initially wearing their surgical mask properly, but would then pull them down and uncover their mouth in order to converse with a passenger that needed assistance.[53]
- TSOs serving at an advanced imaging technology machine wearing their face shield properly, but then lifting up the shield to talk with coworkers.

[52]TSA data indicate that 230 of 413 (56 percent) commercial airports with nonzero passenger throughput in December 2020 had submitted data from at least one completed ICM checklist as of the end of December 2020.

[53]TSOs serving as divestiture officers assist passengers with divesting items from their property, such as carry-on luggage, shoes, and other removable items, into bins for X-ray screening prior to the advanced imaging technology or walk-through metal detector screening.

- TSOs who were not working near passengers initially, and thus not required to wear a face shield, but who then did not don their face shields when they approached passengers.

TSA headquarters officials said that they did not make the ICM position a requirement because they believed doing so would introduce an additional administrative burden on TSA staff in the field—e.g., time spent filling out the checklist and completing data entry. Officials said that even adding items to monitor COVID-19 procedures to the checkpoint opening and closing checklists that TSO supervisors complete would constitute an additional administrative burden. Officials also said they did not want to establish a monitoring process that was punitive at what was already a difficult time for TSOs.

However, TSA's efforts to collect monitoring information could focus on key activities, so that its monitoring resources target the most important procedures. For example, TSA could focus on correctly wearing PPE or social distancing by TSOs and passengers—and ensure information is collected on the continued performance of these activities throughout the shift. TSA could collect this information either through its existing monitoring activities (TSO supervisors or ICMs) or through another mechanism, without requiring punitive measures for TSOs who do not follow procedures.

Without systematically collecting complete information, TSA headquarters does not have full visibility on the extent to which TSOs at commercial airports are implementing key measures intended to reduce the spread of COVID-19 at the screening checkpoint. By taking steps to make its monitoring more systematic and the data collected more complete, TSA could help ensure its TSOs are doing so properly and also identify and address any recurring implementation problems.

TSA Does Not Leverage Available Data to Identify the Extent TSOs Properly Implement COVID-19 Procedures across Airports

Through our review of CCTV footage at six of our sample airports, we found evidence of challenges implementing some COVID-19 policies and procedures across these six airports. However, TSA does not have plans to conduct system-wide analysis of the implementation of its COVID-19 procedures to determine the extent to which these and other challenges exist across all domestic commercial airports. For example,

- We observed examples across all six airports of TSOs not maintaining physical distance from coworkers and passengers, as required by TSA's standard operating procedure. For example, in some cases, a high number of passengers remained in the recomposure area to gather their belongings after screening, and this prevented TSOs from distancing from passengers. We also observed some examples where a queue of passengers would develop between the travel document checker and the advanced imaging technology machine and walk-through metal detectors. Consequently, we observed the TSOs stationed as travel document checkers did not have room to distance themselves. We also observed examples where TSOs would distance from one another while passengers were present, but they would congregate and socialize once there were no passengers to screen.
- With respect to plexiglass, we observed TSOs at all our sample airports that were meant to carry out duties from behind the protection of plexiglass do so incorrectly. For example, we observed divestiture officers and travel document checkers who chose to operate in front of or to the side of the plexiglass installed at their stations.
- Finally, we observed examples at all of our sample airports where TSOs did not use face shields and gloves properly. For example, one common occurrence across all our airports was that TSOs would lift their face shields like a visor so that it covered their foreheads rather than their eyes or face, which does not afford the additional protection TSA intended. We also observed TSOs at all our sample airports conduct multiple pat-downs of passengers without changing their gloves.

According to TSA's pandemic response base plan, after the pandemic is declared, TSA is to initiate a comprehensive after-action report process that reviews the effectiveness of its disease prevention workplace controls. As part of such a review, it is to identify patterns of successes and failures in steps taken in the field to address the pandemic. The results of the effort are to help TSA identify the response activities that it will include in future iterations of its pandemic response base plan. Furthermore, the Project Management Institute's *The Standard for Program Management* states program management should (1) ensure that proper risk policies and procedures are being followed throughout program delivery, and (2) use analysis to support program management decisions that respond to identified risks.[54] Similarly, *Standards for Internal Control in the Federal Government* states that management

[54] *The Standard for Program Management*, Fourth Edition.

should establish and operate activities to monitor the internal control system and management should use quality information to achieve its objectives.[55]

TSA officials described a number of activities they have undertaken that they believe will provide information to help them assess trends in their implementation of COVID-19 procedures across airports. However, we found that these efforts were not comprehensive or did not involve a system-wide analysis of implementation data. For example, TSA headquarters officials said they have created a report based on the ICM data that FSDs at each hub airport and regional directors can produce and review. They said the report provides summary information based on ICM data for the hub (larger) airport and their associated spoke (smaller) airports. According to TSA headquarters officials, FSDs and regional directors can review these reports and provide them to headquarters leadership to help identify and communicate local challenges at an individual airport or at a hub airport and its spokes. While these reports may provide useful insight, especially at the local level, these reports include analysis for only a subset of airports.

TSA headquarters officials also described other outreach efforts that provide information on COVID-19 procedures; however, they do not involve an analysis of system-wide data. For example, they said headquarters has ongoing informal dialogues with FSDs and their staff about COVID-19 procedures. They also noted that in December 2020 they held a conference call with Designated Occupational Safety and Health Officials in the field to discuss questions and concerns about the ICM checklist. While such outreach may have provided TSA headquarters with useful information about field perspectives, they are, as officials described, informal, and do not involve analyzing data across airports. In addition, TSA officials said they conducted a survey of Designated Occupational Safety and Health Officials stationed at the 74 hub airports from December 21, 2020 through January 8, 2021. Officials from approximately half (49 percent) of these airports responded to the survey, according to TSA analysis, which included a few questions about these officials' experiences with the ICM position and their efforts to reduce the spread of COVID-19 at checkpoints. For example, the survey asked officials whether they believed the ICM program at their airport is effective and what their escalation process is for ICM checklist responses that require further action. While such a survey may have resulted in useful

[55]GAO-14-704G.

information, officials from half of airports responded and the results are not generalizable across all airports. Moreover, the questions included do not ask about TSOs' implementation of COVID-19 related procedures other than physical distancing in areas outside of public view. Therefore, the survey does not provide data to support a system-wide analysis of the implementation of COVID-19 procedures.

TSA routinely collects data on TSOs' performance of security screening requirements and analyzes this data to identify vulnerabilities and workforce training needs across airports. For example, TSA conducts regular covert testing at a selection of airport screening checkpoints, and testing teams report the results to TSA executive leadership to inform them about potential vulnerabilities to new and evolving threats.[56] Through our analysis, we identified data sources that would allow TSA to similarly assess, across all airports, the extent to which TSA is implementing procedures to reduce the spread of COVID-19. These data reflect first-hand observations of how TSOs are performing required procedures, and therefore could be used to support a system-wide analysis to identify trends in implementation. Specifically, these data sources include 1) completed ICM checklists, which, as we discussed earlier, TSA field staff at about half of the commercial airports regularly provide to TSA headquarters; 2) results of contact tracing, which FSDs or their delegates perform according to TSA guidance when a TSO reports laboratory-confirmed or suspected COVID-19; and 3) CCTV footage, which airport operators collect and make available to TSA upon request. For example,

- **ICM checklists.** TSA could use the data that ICMs are expected to submit daily to assess implementation trends, such as PPE usage and physical distancing across airports. Officials told us the agency does not have plans as of March 2021 to conduct analysis to identify trends across all airports, but that they could use ICM data to assess broader implementation trends if a larger number of airports submitted data. As discussed earlier, TSA does not have ICM data covering all commercial airports, but could leverage the data it has and supplement with other data, such as those described below, to ensure

[56]TSA selects airports where they run covert tests using a random process so that the results of their tests can be applied to screening activities at airports nationwide. The principles of inferential statistics require that samples be selected using a process that incorporates randomization, in order to make statements (i.e., to generalize) about a larger population based on analysis information collected from that sample.

a more complete picture of implementation successes and challenges nationwide.

- **Contact tracing data.** TSA could also use information FSDs collect as part of their contact tracing procedures to better understand how well TSOs are practicing physical distancing. One FSD we spoke to reported tracking contact tracing data over time to measure the extent to which TSOs at one airport were maintaining physical distance from their coworkers while at work. Specifically, that FSD said they track the number of close contacts—as defined by the CDC—at work for each employee with suspected or laboratory-confirmed COVID-19. The FSD said that number, on average, has meaningfully declined since earlier in the pandemic. The steps the contact tracer is to perform, according to TSA guidance, allow FSDs to identify the number of coworkers who meet the CDC criteria of a close contact. Therefore, contact tracing results provide information on the extent to which TSOs are maintaining appropriate physical distance from coworkers while at work.
- **CCTV footage.** CCTV footage could also be used to assess TSOs' implementation of pandemic-related checkpoint screening procedures and identify examples of how TSOs are implementing procedures correctly. For instance, in our review of CCTV footage from six airports, we found many examples of TSOs correctly and incorrectly implementing some COVID-19-related procedures. Currently, FSDs review CCTV footage as part of their contact tracing process, so these officials are already familiar with what these video files can show regarding TSO interaction and other behaviors.

To use these data sources for a system-wide analysis, TSA could, for example, review CCTV data across a selection of airports, as we did, to directly observe examples of how TSOs are implementing COVID-19 screening procedures. TSA could then follow up by reviewing ICM checklist data to discover whether and how ICMs and field management responded to common deficiencies and develop additional training, guidance, or other mitigating interventions to help ensure correct nationwide implementation. Moreover, when its systemic analysis identifies successful implementation of procedures, TSA could likewise follow up to understand how airports supported these successes.

Conducting a system-wide analysis of monitoring and other implementation data to identify trends in implementing COVID-19 procedures would allow TSA to identify and address implementation challenges that are common across airports. Furthermore, all of this

analysis could lead to meaningful lessons learned that might be applied against the spread of infectious diseases and future pandemics.

TSA Has Coordinated with Various Stakeholders to Identify Additional Ways to Reduce the Spread of COVID-19

TSA Used Existing Communication Channels with Various Stakeholders to Obtain and Share Information on Approaches to Reducing the Spread of COVID-19

TSA has used existing communication channels to obtain and share information on potentially useful approaches to reducing the spread of COVID-19 at airport checkpoints—including tools, technologies, processes, and ongoing research and development (R&D). Specifically, TSA headquarters has engaged with a variety of aviation stakeholders—including TSA field staff at domestic airports, representatives from domestic aviation industry groups, partners at international airports, and other federal partners.

TSA Field Staff

To obtain and share information on approaches to reduce the spread of COVID-19, TSA headquarters increased its outreach to FSDs and other TSA field staff to identify best practices and to encourage FSDs to implement guidance in a way that made sense locally. For example, in addition to the written guidance TSA headquarters provided to the field starting in January 2020, TSA shared information through town halls. Specifically, since March 2020, the TSA Administrator has held more than 20 virtual town hall meetings with TSA staff via live web stream from various airports and other TSA locations to provide updates on the agency's efforts to contain the spread of COVID-19.[57]

In addition to town hall meetings, in May 2020, TSA headquarters established an Advisory Panel composed of approximately 10 FSDs who

[57]TSA held these virtual town hall meetings from five airports (Boston Logan International Airport, Hartsfield-Jackson Atlanta International Airport, Chicago O'Hare International Airport, Newark Liberty International Airport, and Dallas-Fort Worth International Airport), the agency's headquarters, and the TSA Transportation Security Operations Center.

meet at least biweekly to provide feedback on the implementation of new COVID-19-related procedures and guidance and share any innovative measures they had implemented to reduce the spread of the virus. This forum allowed, for example, an FSD in Michigan to share his airport's practice of rotating the credential authentication technology machine at the screening checkpoint toward passengers—a practice that the agency later included in its *COVID-19 Playbook* guidance.

Aviation Industry Groups

TSA regularly consults with its aviation industry partners on a range of issues, including the COVID-19 pandemic. These industry partners include TSA's Aviation Security Advisory Committee, as well as individual industry groups such as Airlines for America and the Airports Council International.[58] Representatives we spoke with from these groups reported a satisfactory level of communication with TSA management during the pandemic. For example, officials from Airlines for America reported TSA had been transparent with industry partners about both the measures they would implement to address the pandemic and the challenges to protecting their workforce.

Officials from these groups also reported that TSA management consistently engaged with them to identify best practices for limiting human-to-human contact throughout the aviation travel process and on new technologies to help reduce the spread of COVID-19. Cleaning and sanitization have been consistent areas of interest during conversations between TSA and these groups. For example, Airlines for America officials reported that they have regular discussions with TSA about efforts to routinely clean areas around checkpoints and better sanitization processes for the bins used by passengers going through the security checkpoints.

[58]The Aviation Security Advisory Committee, which is composed of individuals representing private sector organizations affected by aviation security requirements, advises TSA leadership on aviation security matters, including the development and implementation of policies, programs, rulemaking, and security directives pertaining to aviation security. Airlines for America is a trade association that works with member airlines, labor, Congress, and other groups to improve the aviation industry. Airports Council International advocates for policies and provides services for more than 300 local, regional, and state commercial airport owners and operators in the United States and Canada.

International Aviation Stakeholders

According to TSA headquarters officials, they have exchanged information on approaches to reducing the spread of COVID-19 with international stakeholders throughout the pandemic. These efforts have included TSA Representatives who engage with foreign governments, and the agency's International and Interagency COVID-19 Working Group. According to TSA headquarters officials, TSA Representatives stationed abroad have provided information to internal stakeholders in charge of capability development within TSA's Office of Requirements and Capabilities Analysis on strategies to reduce the spread of COVID-19 that they have observed at the foreign airports within regions where they are posted. For example, one TSA Representative shared information about various technologies to clean airport surfaces with ultraviolet radiation in use at an airport within her region with officials from TSA's office of Requirements and Capabilities Analysis. According to the Representative, her airport's positive outcomes using ultraviolet radiation influenced TSA's decision to continue pursuing this technology at U.S. airports. Another TSA Representative provided information on the local airport authority's decision to increase the limit allowed for passenger hand sanitizer from 3.4 to 12 fluid ounces. This information helped TSA implement a similar change at domestic airports.

TSA Representatives abroad whom we interviewed also indicated that having pre-existing information-sharing agreements helped facilitate the exchange of information on COVID-19-related issues. According to TSA officials, the agency established these agreements to allow for the exchange of sensitive or classified information between aviation stakeholders abroad and government officials.[59] For example, one TSA Representative we interviewed said that having the information-sharing tools already in place allowed for faster exchange about countries' pandemic response plans and another emphasized that the agreements helped ensure that countries' security standards remained aligned.

In addition, TSA created the International and Interagency COVID-19 Working Group in May 2020 to monitor mitigation solutions under development and other research by different foreign partners. According to TSA, this working group has conducted outreach with more than 20 foreign aviation sector partners to exchange COVID-19-related mitigation

[59]TSA headquarters officials noted, however, that much of the COVID-19-related information shared with foreign partners was not categorized as sensitive or classified.

solutions and has documented similarities and differences among these solutions. For example, TSA found that most of its international partners are pursuing social distance queuing (e.g., floor decals and signage) as their main checkpoint design change. Conversely, TSA also noted that none of its international counterparts have chosen to adopt a safety officer position similar to its ICM position.[60] According to TSA, the information collected through these efforts is provided to internal TSA stakeholders to help prioritize R&D activities. In addition, TSA officials reported representing the U.S. Government in an international effort to develop high-level guidance for governments and industry to begin restarting international air transport and recovery from COVID-19.[61]

Federal Partners

TSA headquarters officials explained they have worked most closely with staff from the DHS Science and Technology directorate (S&T) to obtain information on COVID-19-related R&D, but they are also monitoring research by other federal entities that may be useful.[62] In the past, TSA has partnered with DHS S&T on researching new technologies to improve passenger screening at airport checkpoints. Officials from DHS S&T stated that they began discussions with TSA on specific COVID-19-related research projects for airport checkpoints in May 2020. In particular, DHS S&T officials said their long-standing partnership with TSA on R&D for other checkpoint technologies helped the two agencies negotiate research priorities that could be accomplished faster than other agencies that were less familiar with DHS S&T. For example, they said that DHS S&T was able to append quickly TSA-specific requests onto its existing COVID-19-related R&D. Consequently, TSA is coordinating with DHS S&T on several R&D projects related to reducing the spread of COVID-19 at the checkpoint, which we discuss later in this report.

[60]TSA officials said that although none of the international partners it consulted have established the safety officer role within their airports, these partners continue to modify and evolve their COVID-19 mitigation strategies. TSA officials have noted that some of their international partners have expressed interest in TSA's requirements, training, and responsibilities for its ICM position.

[61]This guidance was developed under the auspices of the International Civil Aviation Organization, an organization that is funded and directed by 193 national governments to support their diplomacy and cooperation in air transport.

[62]Within DHS, S&T is responsible for coordinating and integrating R&D activities across the department. DHS components may also conduct R&D to support their respective missions.

In addition, DHS S&T officials told us that they have created a master question list regarding COVID-19 research that they have been updating since January 2020. The list is shared with DHS components including TSA and is derived from a range of sources (such as reports and articles found in scientific and technical journals) and serves as a repository for information on COVID-19-related R&D across the federal government.

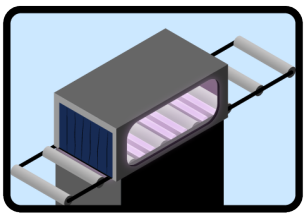
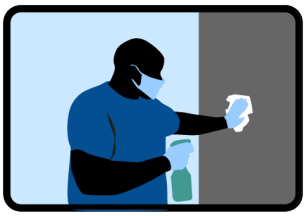
TSA Is Pursuing Five R&D Initiatives and Has Fast-Tracked Planned Technology Upgrades

Since May 2020, TSA has partnered with DHS S&T on five R&D projects to limit the spread of COVID-19 at the checkpoint, and is also working to fast-track technology upgrades planned prior to the pandemic for technologies that may have the collateral benefit of limiting the spread of COVID-19 at checkpoints.

R&D Initiatives

TSA is coordinating with DHS S&T on five R&D efforts to reduce the spread of COVID-19 at the checkpoint for possible implementation (see fig.12).

Figure 12: Transportation Security Administration (TSA) and Department of Homeland Security's Science and Technology Directorate Research and Development Initiatives to Reduce the Spread of COVID-19 at Screening Checkpoints[a]

	Requested Activities	Anticipated Impacts
	**Ultra Violet (UV) Light Bin Disinfection:** Assess the efficacy of alternative commercial UV lighting to eliminate the presence of COVID-19 on high-touch items used during checkpoint screening, such as bins to hold passengers' belongings during X-ray screening.	Integrate commercial germicidal UV light technology into passenger screening process to support bin decontamination.
	**Cleaning Solutions:** Assess efficacy of TSA's approved cleaning solutions to disinfect checkpoint surfaces. Research COVID-19 virus survivability across range of surface types and required contact times.	Identify whether various chemicals— including disinfectants available as commercial, off-the-shelf disinfectants— can be used to effectively meet checkpoint cleaning standards.
	**Explosives Trace Detection (ETD)[b] Swabs:** Investigate the possibility of reutilizing ETD swabs based on the potential for the high temperatures ETDs generate during screening to eliminate the presence of the virus on sample media.	Determine the stability of the COVID-19 virus on ETD swabs and potentially eliminate the operational requirement to limit sampling of ETD swabs to a single use.
	**Face Coverings:** Review alternative, cloth-based Transportation Security Officer (TSO) face coverings to assess COVID-19 survivability on cloth material, filtration efficiency, and side leakage.	Identify materials suitable for use in the procurement of face coverings to inform future personal protective equipment purchases for TSOs.
	**Canine Studies:** Identify alternative canine training methods and aids to detect individuals with COVID-19 biomarker signatures and checkpoint surfaces contamination.	Possible use of canines to 1) identify COVID-19 positive passengers, and 2) validate that checkpoint surfaces are not contaminated with the COVID-19 virus.

Source: GAO analysis of TSA information. | GAO-21-364

[a]In addition to these five research projects, TSA and DHS Science & Technology have collaborated on a sixth project related to Aircraft Airflow Modeling to characterize viral particle movement on airplanes. We did not include this study in our list of research and development projects because it does not address checkpoint operations.

[b]Explosives trace detection technology uses a swab to test for the presence of explosive particles. TSA uses the technology on passengers and their belongings if initial x-ray or advanced imaging technology identify a possible threat item. Per the new COVID-19 Standard Operating Procedures, TSOs are to change explosives trace detection swabs after each screening.

According to TSA officials, DHS S&T has provided preliminary results for four of the five measures and a final report for the fifth measure related to the effectiveness of TSA-approved cleaning solutions in disinfecting security checkpoints. These officials told us that they do not intend to delay moving these measures to the next phase of implementation if preliminary results support moving forward with additional pilot tests rather than waiting for the final reports from DHS S&T. For example, they are currently testing ultraviolet light bin disinfection in the field despite the final report not being complete, and officials are planning to utilize these tests to inform subsequent risk assessments for this technology.[63]

With regard to ultraviolet light technology, preliminary results showed that short-wave ultraviolet light proved effective at inactivating the virus on passenger screening bins.[64] TSA selected three ultraviolet light standalone bin disinfection systems from two unique vendors, and in March 2021, began pilot testing two of the three systems at airports (see fig.13).[65] Additionally, TSA is also exploring integrated ultraviolet light systems that could be incorporated into pre-existing screening lane tray return systems (i.e., the trays travel back to the next passenger after security screening is completed). According to TSA officials, they have begun to evaluate the effectiveness of these integrated solutions and plan to pilot these systems to determine whether they can progress through an expedited acquisition review process.

[63]TSA expects to receive results from the remaining four workflows from DHS S&T in late spring 2021.

[64]The ultraviolet light spectrum can be broken down into three categories: short-wave, middle-wave, and long-wave. DHS S&T tested the effectiveness of short wave ultra violet light in decontaminating passenger screening bins and found this method to be effective at inactivating the COVID-19 virus.

[65]According to TSA, all three ultraviolet light solutions underwent safety evaluations to determine whether each system could efficiently kill the COVID-19 virus, as determined by DHS S&T and TSA. As a result of these tests, two of the three systems were chosen for live pilot testing at screening checkpoints.

Figure 13. Transportation Security Administration (TSA) Piloting Standalone Ultraviolet Light Bin Disinfection Systems

Source: TSA. | GAO-21-364

In addition to the five DHS S&T R&D efforts, TSA is following, but not actively pursuing, a number of ongoing R&D efforts by other federal partners that may help reduce the spread of COVID-19 at checkpoints. Specifically, TSA has a list of approximately 40 COVID-19 R&D efforts that it is monitoring.[66] The list includes a number of R&D projects overseen by the Department of Energy's National Laboratories, including efforts to model virus transmission in closed spaces and rapid COVID-19 diagnostic tools. TSA officials also said the agency is following R&D being conducted by the Environmental Protection Agency to better understand efforts to characterize long-term antimicrobial pesticide products for use at high-touch areas.[67]

Planned Technology Upgrades

In addition to partnering on DHS S&T's R&D, TSA has also fast-tracked the planned implementation of technologies that have the potential to further reduce touch points at checkpoints. For example, TSA officials said that as of April 2021, there were 300 computed tomography (CT)

[66]The list also includes a number of private sector R&D efforts as well.n

[67]This effort will characterize the product's effectiveness and durability based on time, physical contact, and degradation susceptibility to routine cleaning solutions.

systems deployed across 235 checkpoints and 4 labs.[68] According to TSA, CT has improved threat detection capabilities for carry-on baggage at security checkpoints, which further reduces touch points (i.e., the number of bag checks TSOs must perform) for TSOs (see fig. 14).[69]

[68]CT technology provides enhanced detection of threat items. TSA's current screening technology for carry-on bags uses two-dimensional images. The CT technology applies sophisticated algorithms for the detection of explosives and other threats by creating a 3-D image that can be viewed and rotated 360 degrees for a thorough analysis.

[69]According to TSA officials, TSA plans to increase deployment of these systems using competitive awards. The Checkpoint Property Screening System program released the first solicitation in November 2020, with an anticipated award for approximately 223 mid-size systems in the fourth quarter of fiscal year 2021 and deployment beginning in the first quarter of fiscal year 2022. According to TSA the planned procurement of these systems has since changed, and the program now intends on procuring approximately 242 mid-size systems.

Figure 14. Transportation Security Administration (TSA) Computed Tomography Checkpoint Screening Machine

Source: Transportation Security Administration. | GAO-21-364

TSA is also in the process of developing a new self-service credential authentication technology device equipped with a camera that compares a passenger's live facial image against the image from their identity document.[70] As of March 2021, TSA was pilot testing these machines.[71] According to TSA officials, these new models would be oriented toward passengers, who will be able to scan their own identification rather than

[70]As of December 2020, credential authentication machines deployed at checkpoints can validate that the identity document presented by the passenger is authentic, but do not have cameras. Only the units in the pilot program have cameras.

[71]According to TSA, formal field tests are being conducted with volunteer passengers at Ronald Reagan Washington National Airport, Phoenix Sky Harbor Airport, Indianapolis International Airport, and Miami International Airport to evaluate the system's performance across diverse operational environments and demographics to identify, understand, and mitigate variations in system performance. Following these field pilots, TSA plans to acquire additional units to conduct extended field pilots before making a final deployment decision.

physically handing it to a TSO. TSA officials believe that the credential authentication technology units would further reduce the risk of contracting COVID-19 at the checkpoint by limiting touch points and time spent in close proximity between potentially contagious passengers and TSOs.

Furthermore, TSA's efforts to obtain and share information on COVID-19 mitigation strategies have led to its decision not to pursue certain technologies. For example, TSA officials said the agency was not pursuing approximately 40 tools and strategies to limit COVID-19, ranging from tools to monitor passenger vital signs to mechanisms designed to filter information on social media. In addition, TSA abandoned temperature screenings at checkpoints for its TSO workforce and individual passengers, based on guidance jointly developed by DHS and the departments of Transportation and Health and Human Services. That guidance states that temperature screenings are unable to detect asymptomatic or pre-symptomatic people with COVID-19, those who are ill but who do not have fever, and those who have treated their fever with medication. Therefore, the guidance states temperature screenings should not be relied upon as a standalone public health measure.[72]

Conclusions

The COVID-19 pandemic has greatly impacted the demand for air travel and the people working in the air transportation industry. Thousands of TSA's staff, most of them TSOs who work at passenger checkpoints at airports across the country, have contracted COVID-19. In January 2020, when the U.S. experienced its first cases of the virus, TSA began coordinating its response to the pandemic and implementing an array of changes to reduce the spread of COVID-19 at airport checkpoints. These changes included 1) requiring TSOs to use personal protective equipment; 2) amending passenger screening procedures to reduce TSO exposure to potentially infected passengers and other new procedural guidance; 3) modifying existing screening technology; and 4) adding human capital flexibilities that reduced TSO exposure at the checkpoint.

It is important to the safety of TSA employees, passengers, and the function of the aviation sector that TSOs appropriately implement policies

[72]*Runway to Recovery: The United States Framework for Airlines and Airports to Mitigate the Public Health Risks of Coronavirus Guidance* Jointly issued by the U.S. Departments of Transportation, Homeland Security, and Health and Human Services, (July 2020).

and procedures to limit the spread of COVID-19. TSA has processes to monitor the implementation of safety procedures, such as those intended to stem the spread of COVID-19 at passenger screening checkpoints, but its monitoring is not systematic or complete. Systematic and complete monitoring would improve TSA's assurance that its TSOs are appropriately implementing the procedural changes it has developed to reduce the spread of COVID-19. Moreover, we found that while TSA has some efforts underway to identify implementation trends, they are not leveraging available data to identify implementation trends across all airports. We identified additional sources of data (e.g., CCTV footage) that could be used to do such analysis, which would allow TSA to identify common concerns, challenges, and successes related to COVID-19 procedures at the nation's commercial airports. Using this information, TSA could also follow up to discover how field staff supported such successes, or respond to deficiencies with additional training, guidance, or other corrective intervention to help ensure correct nationwide implementation.

Recommendations for Executive Action

We are making the following two recommendations to TSA:

The TSA Administrator should take steps to ensure more complete monitoring of TSO implementation of measures to reduce the spread of infectious diseases at screening checkpoints. (Recommendation 1)

The TSA Administrator should take steps to analyze available data related to the implementation of its COVID-19 measures to identify patterns of successes and failures across all airports, and use its findings to share lessons learned and remediate any deficiencies. (Recommendation 2)

Agency Comments and Our Analysis

We provided a draft of this product to TSA for comment. In its comments, reproduced in appendix III, TSA concurred with our recommendations. TSA also provided technical comments, which we incorporated as appropriate.

With regard to our first recommendation that TSA take steps to ensure more complete monitoring of its measures to prevent the spread of

infectious disease, TSA said its Enterprise Support Office and TSA's Security and Administrative Services, in coordination with the agency's Chief Medical Officer and Security Operations, will update TSA's COVID-19 Standard Operating Procedures to require the implementation of the ICM position and associated data collection. Among other things, TSA said this effort will include updates to the ICM checklist to help verify that TSOs are complying with TSA's pandemic operating procedures, including correctly wearing personal protective equipment and social distancing between TSOs and passengers; an evaluation of data collection methods using the ICM checklist prior to system-wide implementation; and a quarterly assessment of the COVID-19 threat and whether TSA should continue or cease the ICM function. In addition, some of TSA's planned actions in response to this recommendation, such as considering whether to add the ICM position to its base plan, would enhance its preparation for future pandemics. TSA plans to complete these activities by the end of October 2021. If implemented effectively, these activities would address the intent of our recommendation.

With regard to our second recommendation that TSA take steps to analyze available data related to the implementation of COVID-19 measures to identify patterns of successes and failures across all airports, TSA said its Enterprise Support Office will work with the Security Operations, Performance Management Branch, to analyze available data, focusing on information captured from ICM checklists. TSA plans to complete these actions by the end of the December 2021, and will use results to identify areas for improvement and best practices to reduce the spread of infectious diseases at airport checkpoints. If implemented effectively, these activities would address the intent of our recommendation.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Homeland Security and other interested parties. In addition, the report is available at no charge on the GAO website at http://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-8777 or McNeilT@gao.gov. Contact points for our Office of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are listed in appendix IV.

Triana McNeil
Director, Homeland Security and Justice

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Appendix I: Objectives, Scope, and Methodology

The CARES Act—signed in March 2020—includes a provision for us to conduct monitoring and oversight of the federal government's efforts to prepare for, respond to, and recover from the COVID-19 pandemic.[1] In addition, we were asked to examine the Transportation Security Administration's (TSA) efforts to reduce human-to-human contact at airport passenger screening checkpoints in response to the Coronavirus Disease 2019 (COVID-19). This report assesses the following objectives:

1. How many Transportation Security Officers (TSO) have been diagnosed with COVID-19?
2. To what extent has TSA taken steps to reduce the spread of COVID-19 at passenger screening checkpoints?
3. How is TSA monitoring TSOs' implementation of the amended safety and screening procedures intended to reduce the spread of COVID-19 at passenger screening checkpoints?
4. How has TSA coordinated with other stakeholders to share and obtain information on steps taken to reduce the spread of COVID-19 at passenger screening checkpoints, and what have been the results?

Our review focused on those changes that were relevant to TSA's TSO employees, processes, and procedures in use at passenger screening checkpoints for roughly 440 commercial airports in the United States from January 2020 through January 2021.

In our background section, we analyzed publicly available TSA data on the number of passengers screened by TSA through checkpoints from March 1, 2020 through January 31, 2021, as well as one calendar year prior. To assess the reliability of these data, we electronically reviewed the data for missing data and obvious errors. We found these data to be sufficiently reliable for the purposes of describing passenger throughput during the pandemic.

[1]Pub. L. No. 116-136, § 19010, 134 Stat. 281, 579.

To address our first objective, we analyzed data received from TSA for the period March 1, 2020 through January 31, 2021 showing the number of reported positive COVID-19 cases among TSOs.[2] This data included information on the location (airport and region) where these employees worked, as well as the pay period in which they reported their diagnosis to TSA leadership. We used this data to calculate the rate of COVID-19 infections by pay period, that is, the number of newly reported COVID-19 cases divided by the total number of TSOs in that pay period. We also used this data to explore the distribution of COVID-19 cases across airports according to their 1) security risk categories and 2) geographical regions.[3] To assess the reliability of these data, we reviewed documentation from TSA's relevant program offices regarding the systems used to collect and store the data; questioned TSA officials from relevant program offices regarding the reliability of the data received; and electronically tested the data for missing data and obvious errors. We found these data to be sufficiently reliable for the purposes of describing the distribution of COVID-19 cases among TSOs at the nation's airports.

To address our second objective, we reviewed key TSA policies and procedures enacted to reduce the spread of COVID-19, including reviewing Department of Homeland Security (DHS) and TSA documentation of 1) procedural changes enacted and any new tools and technologies employed at passenger screening checkpoints to reduce the need for TSOs to come in contact with passengers and their belongings and increase TSOs' ability to physically distance themselves from passengers and coworkers; 2) guidance on the use of personal protective equipment, such as surgical masks and N95 respirators, nitrile gloves, face shields, and acrylic barriers; and (3) human capital policies and

[2]TSA does not provide testing to its employees. However, it requires local TSA (or contractor) management to report confirmed cases of COVID-19 in their workforce by entering incident information into the electronic WebEOC system. The system allows for two types of confirmation: 1) the employee has signs and symptoms clinically compatible as identified by a healthcare provider, but employee was not tested; or was tested and the result is pending; 2) the employee received a laboratory-confirmed positive result. The system does not require management to indicate what type of testing was performed to determine the diagnosis.

[3]TSA oversees security checkpoints at approximately 440 TSA-regulated airports nationwide. TSA classifies airports into one of five security risk categories (X, I, II, III, IV) based on various factors, such as the total number of takeoffs and landings annually, and other special security considerations. In general, category X airports have the highest number of passenger boardings and category IV airports have the fewest.

flexibilities, such as the addition of leave categories, amended leave policies, and expanded telework opportunities.[4]

We evaluated the extent to which these policies, procedures, tools, and technologies were consistent with TSA's *Incident Management Framework: Chemical/Biological and Pandemic Base Plan (b*ase plan) and that TSA's actions noted incorporation of guidance from the Centers for Disease Control and Prevention and with guidance from the Occupational Safety and Health Administration that provide standards for cleaning and disinfecting the workplace and the need for PPE for different occupations based on the risk to the employee.[5] We did not assess the extent to which these changes influenced the security effectiveness of TSA's screening procedures.[6]

Also to address our second objective, we reviewed TSA time and attendance data to understand TSOs' use of expanded leave and telework flexibilities. To assess the reliability of these data, we reviewed documentation from TSA's relevant program offices regarding the systems used to collect and store the data; questioned TSA officials from relevant program offices regarding the reliability of the data received; and electronically tested the data for missing data and obvious errors. We found that the TSA time and attendance data was sufficiently reliable for the purpose of describing TSO's use of different leave and time charges during the time period under study.

[4]Surgical masks are loosely fitting masks that help block large particle droplets and splatter from reaching the wearer's nose and mouth and that reduce the exposure of other's to the wearer's saliva and secretions. N95 respirators are tight fitting face pieces that requires a proper seal, which forces inhaled air to be pulled through the respirator's filter material. They are used to filter smaller airborne contaminants.

[5]For CDC guidance, See https://www.cdc.gov/coronavirus/2019-ncov/community/worker-safety-support/airports.html. For OSHA Guidance see *Guidance on Preparing Workplaces for COVID-19*, OSHA 3990-03 2020, and https://www.osha.gov/coronavirus/control-prevention/border-protection-transportation-security, respectively.

[6]TSA assessed all proposed changes to TSA's standard operating procedures to ensure none would have a negative impact on security. As a result of its assessment, it did not implement two of the proposed changes because it determined they would pose a significant risk to security. These changes related to TSOs' handling of passenger identification and pat-downs.

In addition, to address our second objective, we conducted 21 interviews with aviation stakeholders about their experience with TSA's guidance and other tools to reduce the spread of COVID-19. These stakeholders included TSA Federal Security Directors (FSDs), airport operator officials, and TSO union representatives at a non-generalizable sample of commercial airports. We chose 8 of 440 commercial airports that 1) had variation in the number of confirmed cases of COVID-19 among TSOs or contract screeners; 2) represented diverse geographic areas; and 3) represented a variety of categories (an indicator of size).[7] In addition, one of our eight sample airports was a participant in TSA's Screening Partnership program.[8] We spoke to FSDs at all eight of our sample airports; officials from the airport operator at six, and union officials from five.[9]

Additionally, for our Screening Partnership Program airport, we chose to speak to officials from the private company that provides the airport's

[7]TSA's national operations are divided into seven geographic regions across the country. TSA has recently revised its field structure by reducing its geographic regions from seven to five. In the new structure, TSA combined regions 2 and 7. It also divided region 5 states across other regions, moving Washington, Oregon, and Idaho to region 6, and Montana, Wyoming, Colorado, Utah, and the Dakotas to region 4. For the purposes of this report, we use the previous seven-region structure since that is how TSA provided data to us. FSDs represent a number of airports, including "hub" airports as well as their "spokes." Hubs are generally the larger category X or I airports, and many hubs have one or more spokes that are generally smaller category II, III, and IV airports. We chose some airports that had smaller spoke airports that had experienced cases of COVID-19. We wanted to ensure that we heard from FSDs about how smaller airports implemented procedural changes to reduce the spread of the disease. For example, one of our sample airports was Orlando International Airport (category X), and its FSD also discussed experiences from its spoke, Orlando Sanford (category II).

[8]Federal law established this program in 2001, originally as a pilot program and then on a permanent basis, to allow commercial airports to use TSA-approved qualified private-screening contractors to screen passengers and property. 49 U.S.C. § 44920. As of April 2021, contractors perform passenger and baggage screening services at 22 airports across the country. At each of these airports, TSA continues to be responsible for overseeing screening operations, and the contractors must adhere to TSA's security standards, procedures, and requirements.

[9]We originally selected a sample of six airports. Partway through the review, we selected an additional two airports that had not experienced any cases of COVID-19 among its TSOs to discover whether officials at these airports were taking markedly different approaches to the pandemic. We spoke to the FSDs at these airports because FSDs are the top ranking officials at airports implementing TSA policies to prevent COVID-19. Based on these interviews, we found that the two airports were not pursuing markedly different approaches to those we learned about; in addition, soon after we spoke to them, these two airports had their first cases among TSOs. Given that these airports were not substantially different than the others in our sample, we determined it was not necessary to interview airport operators or union officials.

screening services about their experiences working with TSA leadership and how they implemented COVID-19 related changes at their checkpoints. In order to ensure we heard more than one private company perspective, we also spoke to the Screening Partnership Program company operating at the spoke of one of our sample airports. While results from these interviews are not representative, and therefore cannot be used to make inferences about a population, they do provide important context and illustrative examples. For example, interviews provided important insight from the viewpoints of field employees about 1) how TSA leadership communicated policy and procedural changes, 2) the extent to which policies and procedural changes were being implemented successfully in the field, and 3) the challenges that field employees and airport operators faced as they implemented these changes.

To address our third objective, we reviewed TSA internal and published plans to assess the implementation of and compliance with procedures to reduce the spread of COVID-19 at airports' passenger screening checkpoints. For example, we reviewed the checklist provided to field employees for tracking the availability of personal protective equipment (PPE), the proper use of PPE, and TSO efforts to maintain physical distance from passengers, among other checklist items. We examined the extent to which this checklist was consistent with TSA's policies and procedural changes related to COVID-19. We also interviewed TSA headquarters officials about any challenges associated with monitoring the implementation and effectiveness of these procedures. As discussed above, we spoke with FSDs, airport operator officials, and union representatives from a non-generalizable sample of airports to understand any local airport efforts to monitor compliance and to obtain local officials' views on TSA headquarters' efforts to monitor compliance. We assessed the extent to which TSA's efforts to monitor the implementation of these procedural changes are consistent with its base plan and the Project Management Institute's *The Standard for Program Management.*[10] This guidance, which is used worldwide, describes principles, practices, and activities of program management that are generally recognized to support good program management practices and that are applicable to most programs, most of the time. In addition, the information and communication component of internal controls was significant to this objective, along with its related principle that

[10]Project Management Institute, Inc., *The Standard for Program Management*, Fourth Edition.

management should use quality information to achieve its objectives.[11] We assessed the extent to which TSA's monitoring efforts reflected this principle.

Also to address our third objective, we observed CCTV footage from six selected airports to observe whether these airports were properly implementing the changes to policies and procedures that TSA instituted.[12] We requested files showing a variety of angles across the screening checkpoint: 1) the travel document checker area, including queueing areas; 2) divestment; 3) the walk-through metal detector and advanced imaging technology machines, including angles showing pat-downs and use of explosives trace detection machines for on-person searches; 4) recomposure; and 5) the carry-on bag search area and use of explosives trace detection machines for in-property searches. We requested CCTV footage at two different time periods—the first set was captured between July and August 2020 and the second in December 2020—in order to observe whether there were meaningful changes in compliance over the course of the pandemic. We received more than 100 hours of footage from our sample airports. We selected and reviewed the first ten minutes of footage showing each of the above-listed angles from each airport.[13] For each file, one analyst reviewed the footage and captured the timestamps and details for one or more examples of TSA's required and recommended procedural changes being implemented properly and improperly on an Excel spreadsheet. The changes the analyst looked for are summarized in table 1.

[11]GAO, *Standards for Internal Control in the Federal Government*, GAO-14-704G (Washington, D.C.: Sept. 2014).

[12]We requested CCTV footage from the original six sample airports, which had more COVID-19 cases than the remaining two airports we spoke with.

[13]We did not request footage from specific days or times but believe the footage we selected and reviewed was sufficiently reliable for our purposes of observing whether airports were properly implementing the changes to policies and procedures TSA implemented during the pandemic.

Table 1. Examples of Transportation Security Administration (TSA) Requirements and Recommended Practices to Reduce the Spread of COVID-19 at Checkpoints that GAO Examined in Closed-Circuit Television (CCTV) Footage from Six Sample Airports

Reduced Touch Points	The credential authentication technology machine is rotated for passenger self-service
	TSOs allow passengers who alarm to further divest and rescreen
Presence of Signage and Use of Barriers	Floor decals emphasizing physical distancing recommendations throughout the checkpoint
	Other signage visible related to COVID-19 precautions
	Plexiglass installed to protect TSOs and passengers throughout the checkpoint
Evidence of Physical Distance Being Maintained	Between passengers and TSOs throughout the checkpoint
	Among TSOs throughout the checkpoint
TSO Use of Personal Protective Equipment	Surgical masks
	Face shields
	Nitrile gloves
	Changing gloves following on-person searches
	Discarding explosives trace detection swabs after a single use

Source: GAO analysis. | GAO-21-364

Notes: We reviewed CCTV footage from six sample airports.

Once the analyst reviewed the footage and captured relevant timestamps, a second analyst reviewed the footage and indicated whether they agreed with the first analyst's assessment (i.e., implemented properly vs implemented improperly). If they did not initially agree, they discussed the timestamp and came to an agreement. Although results from the review of this footage from selected airports are not representative, and therefore cannot be used to make inferences about a population, they do provide important context and illustrative examples. For example, reviewing this footage allowed us to observe 1) examples of how TSOs in the field were implementing COVID-19 procedural changes; 2) examples of inconsistent implementation across our sample airports; and 3) the utility of CCTV footage as a monitoring tool that TSA leadership could leverage.

To address our fourth objective, we reviewed TSA documentation of its efforts to share and obtain information with industry, federal, and domestic and international airport stakeholders on any new policies, procedures, tools, and technologies to reduce the spread of COVID-19 that could be employed at U.S. airports' passenger screening checkpoints. Specifically, we reviewed TSA documentation summarizing its COVID-related international interagency coordination as well as multiple TSA press releases outlining steps the agency is taking to help mitigate the impact of COVID-19 on travelers and its workforce. To understand how TSA is working with federal partners to share and obtain information on technologies and tools to reduce the spread of COVID-19,

we interviewed officials from TSA's Requirements and Capabilities Analysis office and DHS's Science and Technology Directorate (S&T).[14] To understand how TSA is working with aviation industry stakeholders, we interviewed officials from the industry groups Airlines for America and the Airports Council International to discuss how they have communicated with TSA to share information about technologies or procedures that their membership is using or planning to use to reduce the spread of COVID-19.[15] We selected these industry groups because they are members of TSAs Aviation Security Advisory Committee and represent the leading passenger and cargo carriers in the U.S. and more than 300 airport owners and operators, respectively.

To understand how TSA is working with domestic airport stakeholders, we interviewed FSDs, officials from airport operators, and union officials at the non-generalizable sample of domestic airports described above. Finally, to understand how TSA is working with foreign airport stakeholders, we interviewed Transportation Security Administration Representatives posted at a judgmentally selected sample of four international regions.[16] We selected these regions to obtain geographic diversity among the airports with TSA Representatives. Although results from these interviews cannot be generalized to all TSA Representatives who serve internationally, they do provide important context and illustrative examples. For example, interviews with officials knowledgeable about operations at domestic and international airports provided insight on TSA efforts to learn about promising practices, technologies, or tools employed in the U.S. and abroad. Finally, to determine the extent to which TSA has participated in the development of key international aviation sector guidance, we interviewed officials from the International Civil Aviation Organization.

[14]TSA's Requirements and Capabilities Analysis office directly supports TSA's mission by assessing current state operations, conducting gap analyses, managing needs identification, and developing requirements to generate new and improved security capabilities in alignment with the future vision of aviation security.

[15]Airlines for America is a trade association that works with member airlines, labor, Congress, and other groups to improve the aviation industry. Airports Council International advocates for policies and provides services for more than 300 local, regional, and state commercial airport owners and operators in the United States and Canada.

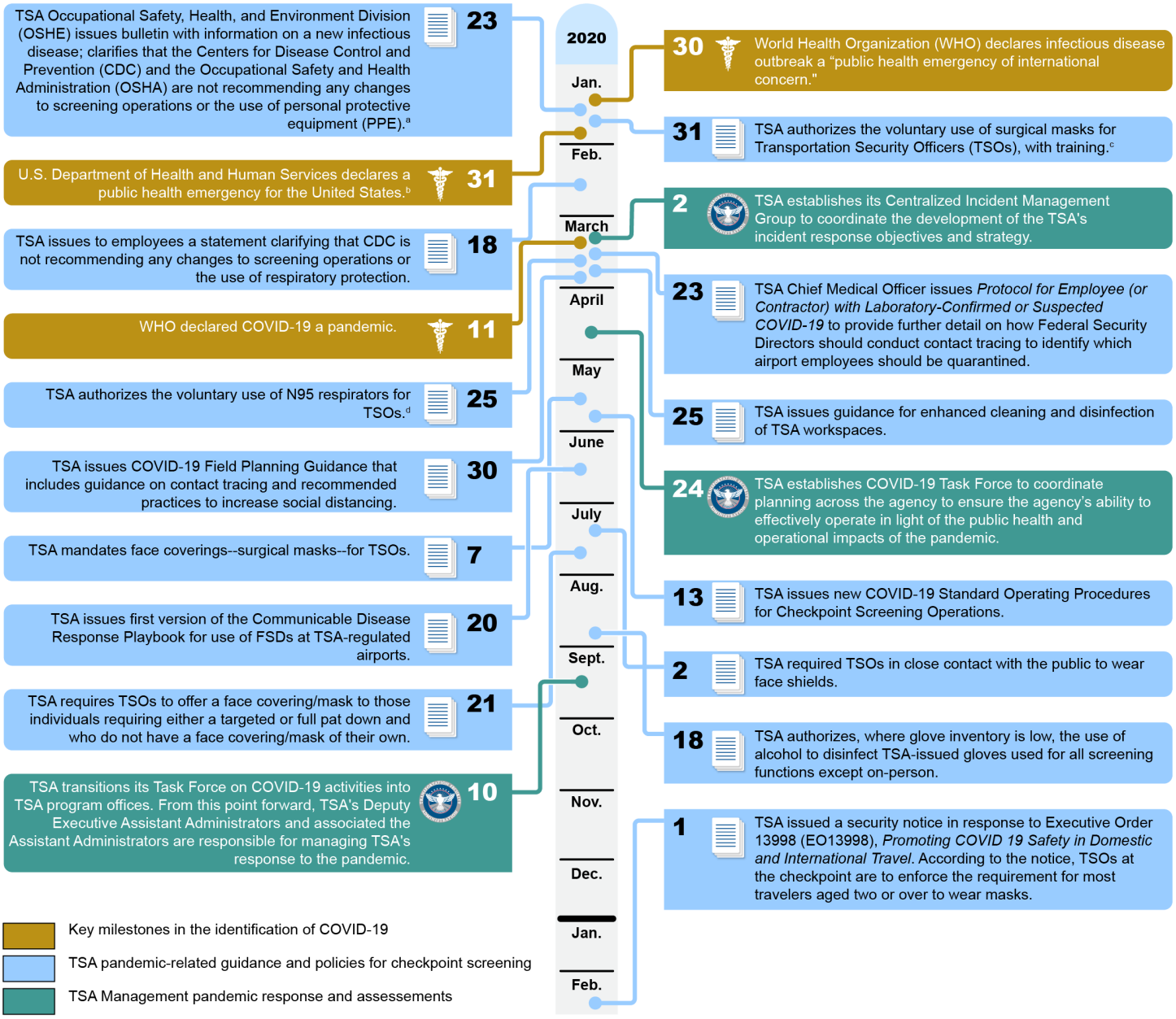
[16]Transportation Security Administration Representatives are TSA officials who are posted at US embassies and consulates abroad. They serve as TSA's interlocutors to foreign governments and advisors to Ambassadors and Chiefs of Mission on aviation security issues. They engage with counterparts, including foreign airports, and facilitate information exchange and dialogue.

We conducted this performance audit from May 2020 to June 2021 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.

Appendix II: Transportation Security Administration (TSA) Actions in Response to the Coronavirus Disease 2019 Pandemic

TSA took steps to address the spread of COVID-19 among its Transportation Security Officers (TSO) and travelers at checkpoints through staff communication, management actions, and procedural and human capital changes. The following figures show TSA's key actions in each of these areas relative to pandemic milestones.

Figure 15: Coronavirus Disease 2019 (COVID-19) Pandemic Milestones and Key Transportation Security Administration (TSA) Management Actions and Guidance Changes, January 2020 to February 2021



Source: GAO analysis of TSA information. | GAO-21-364

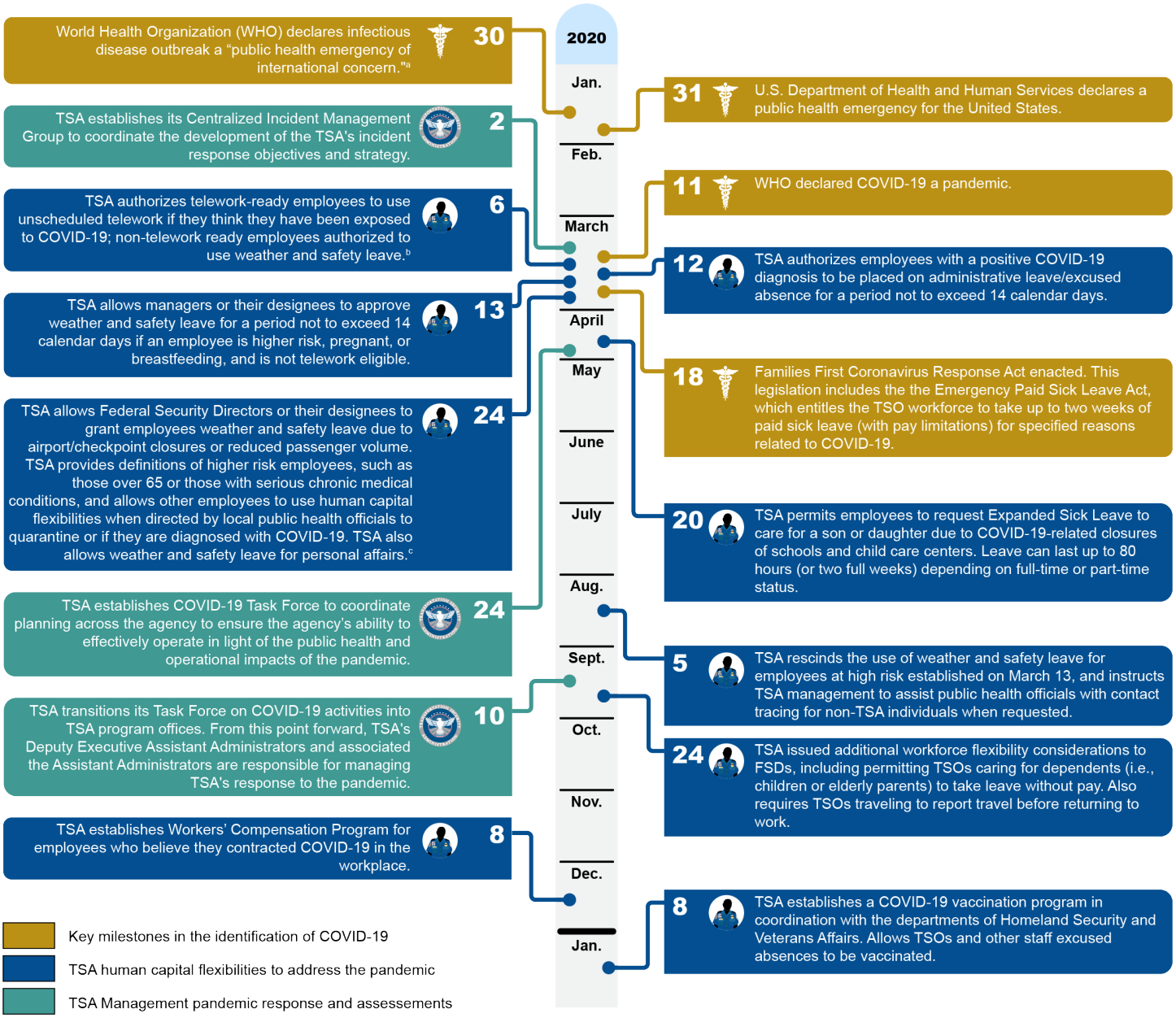
[a]PPE include masks, gloves, face shields and other equipment workers use to protect themselves from the transmission of infectious diseases that could occur during the performance of activities.

[b]A public health of emergency is declared to respond to a significant outbreak of an infectious disease, bioterrorist attack, or other significant or catastrophic event.

[c]Surgical masks are loosely fitting masks that help block large particle droplets and splatter from reaching the wearer's nose and mouth and that reduce the exposure of others to the wearer's saliva and secretions.

[d]N95 respirators are tight fitting face pieces that require a proper seal, which forces inhaled air to be pulled through the respirator's filter material. They are used to filter smaller airborne contaminants.

Figure 16: Coronavirus Disease 2019 (COVID-19) Pandemic Milestones and Key Transportation Security Administration (TSA) Management Actions and Human Capital Policy Changes, January 2020 to January 2021



Source: GAO analysis of TSA information. | GAO-21-364

[a]A public health of emergency is declared to respond to a significant outbreak of an infectious disease, bioterrorist attack, or other significant or catastrophic.

[b]TSA allows for the approval of weather and safety leave, a form of paid leave, if an employee (or a group of employees) is prevented from safely traveling to or performing work at an approved location.

[c]Federal Security Directors (FSD) are responsible for ensuring TSA policies and procedures are carried out locally at airports.

Appendix III: Comments from the Department of Homeland Security

U.S. Department of Homeland Security
Washington, DC 20528

Homeland Security

May 27, 2021

Triana McNeil
Director, Homeland Security and Justice
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Re: Management Response to Draft Report: GAO-21-364, "COVID-19: TSA Could Better Monitor Its Efforts to Reduce Infectious Disease Spread at Checkpoints"

Dear Ms. McNeil:

Thank you for the opportunity to comment on this draft report. The U.S. Department of Homeland Security (DHS or the Department) appreciates the U.S. Government Accountability Office's (GAO) work in planning and conducting its review and issuing this report.

The Department is pleased to note GAO's positive recognition that in January 2020, when the U.S. experienced its first cases of the COVID-19 virus, the Transportation Security Administration (TSA) began coordinating its response to the pandemic and implementing an array of changes to reduce the spread of COVID-19 at airport checkpoints. This included issuing amended safety measures, such as requiring Transportation Security Officers (TSOs) to wear surgical masks and face shields, change gloves after pat-downs, and physically distance themselves from coworkers and passengers, as practicable. TSA also appreciates GAO's feedback that TSOs, union officials, and other stakeholders were generally satisfied with TSA's efforts. TSA remains committed to reducing the spread of COVID-19 at airport passenger screening checkpoints by continuing to implement safety measures, as appropriate, in partnership with its aviation stakeholders.

The draft report contained two recommendations, with which the Department concurs. Attached find our detailed response to each recommendation. DHS previously submitted technical comments addressing several accuracy, contextual, sensitivity, and other issues under a separate cover for GAO's consideration.

Again, thank you for the opportunity to review and comment on this draft report. Please feel free to contact me if you have any questions. We look forward to working with you again in the future.

Sincerely,

JIM H CRUMPACKER

Digitally signed by JIM H CRUMPACKER
Date: 2021.05.27 16:34:02 -04'00'

JIM H. CRUMPACKER, CIA, CFE
Director
Departmental GAO-OIG Liaison Office

Attachment

2

Attachment: Management Response to Recommendations Contained in GAO-21-364; 104290

GAO recommended that the TSA Administrator:

Recommendation 1: Take steps to ensure more complete monitoring of TSO implementation of measures to reduce the spread of infectious diseases at screening checkpoints.

Response: Concur. Although the Infection Control Monitor (ICM) position was previously established in June 2020 as a best management practice, TSA's Enterprise Support Office and TSA's Security and Administrative Services (SAS), in coordination with the agency's Chief Medical Officer and Security Operations, will also update TSA's COVID-19 Standard Operating Procedures that require the implementation of the ICM and associated data collection. Once complete, this update will deliver:

- A recommendation to the TSA Administrator as to whether TSA should require ICM implementation as part of a broader pandemic preparedness policy including criteria for implementing and implementing guidelines.
- Adding the ICM position to TSA's "Incident Management Framework: Chemical/Biological and Pandemic Base Plan" as part of TSA's response and recovery efforts during future pandemics.
- Updates to the ICM checklist which will increase TSA's ability to verify that personnel comply with TSA's pandemic operating procedures, including correctly wearing Personal Protective Equipment and social distancing between TSOs and passengers.
- An evaluation of the: (1) method of data collection; (2) system that is used to collect it; (3) frequency of ICM checklist use; and (4) a recommendation to the TSA Administrator as to the implementation and use of the ICM checklist, including a plan for piloting its use prior to system-wide implementation.
- A quarterly assessment of the evolving COVID-19 threat, as well as a recommendation as to whether TSA should continue or cease use of the ICM checklist procedure, in accordance with any updates to the ICM policy and the "Incident Management Framework: Chemical/Biological and Pandemic Base Plan."

Estimated Completion Date (ECD): October 29, 2021.

3

Recommendation 2: Take steps to analyze available data related to the implementation of its COVID-19 measures to identify patterns of successes and failures across all airports and use its findings to share lessons learned and remediate any deficiencies.

Response: Concur. TSA's Enterprise Support Office will work with the Security Operations, Performance Management Branch, to analyze available data to identify patterns of success and failure in implementing COVID-19 measures across airports nationwide. In addition, TSA's SAS will provide training and guidance to Security Operations by engaging Designated Occupational Safety and Health Officials based on ICM data related to their COVID-19 implementation measures. SAS will use this data to improve processes to reduce the spread of infectious diseases at checkpoints, focusing on using existing data captured on the ICM checklist to identify weaknesses and outstanding performers, and sharing best practices to increase the overall effectiveness.

ECD: December 31, 2021.

4

Agency Comment Letter

Text of Appendix III: Comments from the Department of Homeland Security

Page 1

May 27, 2021

Triana McNeil
Director, Homeland Security and Justice
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

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Page 2

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Sincerely,

Jim H. Crumpacker, CIA, CFE
Director
Departmental GAO-OIG Liaison Office

Attachment

Page 3

Attachment: Management Response to Recommendations Contained in GAO-21-364; 104290

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Adding the ICM position to TSA's "Incident Management Framework: Chemical/Biological and Pandemic Base Plan" as part of TSA's response and recovery efforts during future pandemics.

Updates to the ICM checklist which will increase TSA's ability to verify that personnel comply with TSA's pandemic operating procedures, including correctly wearing Personal Protective Equipment and social distancing between TSOs and passengers.

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Estimated Completion Date (ECD): October 29, 2021.

Page 4

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Take steps to analyze available data related to the implementation of its COVID-19 measures to identify patterns of successes and failures across all airports and use its findings to share lessons learned and remediate any deficiencies.

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ECD: December 31, 2021.

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

Triana McNeil at (202) 512-8777 or McNeilT@gao.gov

Staff Acknowledgments

In addition to the contact named above, Mona Nichols Blake (Assistant Director), Anthony DeFrank (Analyst in Charge), Landis Lindsey, Sarah Williamson, Mariel Alper, Paul Aussendorf, Benjamin Crossley, Elizabeth Dretsch, David Hooper, Sara Ann Moessbauer, Moon Parks, Jasmine Porter, and Adam Vogt made key contributions to this report.

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