



## Testimony

Before the Subcommittee on Space  
and Aeronautics, Committee on  
Science, Space, and Technology,  
House of Representatives

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# AIR TRAVEL AND COMMUNICABLE DISEASES

## Status of Research Efforts and Action Still Needed to Develop Federal Preparedness Plan

Statement of Heather Krause, Director,  
Physical Infrastructure

Accessible Version

# GAO Highlights

Highlights of [GAO-20-655T](#), a testimony before the Subcommittee on Space and Aeronautics, Committee on Science, Space, and Technology, House of Representatives

## Why GAO Did This Study

The transmission of COVID-19 has been greatly aided by air travel. In light of the pandemic and warnings about the risks of air travel, U.S. passenger airline traffic fell by 96 percent in April 2020 as compared to April 2019. COVID-19 is only the latest communicable disease threat to raise public health concerns regarding the spread of contagion through air travel. Ensuring that the United States is prepared to respond to disease threats from air travel, as well as conducting the necessary research to reduce the risks of contagion, are two vital responsibilities of the federal government.

This statement provides information on (1) the U.S. aviation system's preparedness to respond to communicable disease threats and (2) FAA's management of its R&D portfolio, including the extent to which disease transmission on aircraft and at airports has been the focus of FAA research. This statement is based on [GAO-16-127](#) issued in December 2015 and [GAO-17-372](#) issued in April 2017. GAO conducted updates to obtain information on the actions agencies have taken to address these reports' recommendations.

## What GAO Recommends

GAO made several recommendations in its prior work, including that DOT develop a comprehensive national aviation-preparedness plan, and that FAA identify long-term R&D priorities, among other things. Progress has been made in addressing some of the recommendations. Continued attention is needed to ensure that the remainder of these recommendations are addressed.

View [GAO-20-655T](#) For more information, contact Heather Krause, 202-512-2834, [krauseh@gao.gov](mailto:krauseh@gao.gov)

June 23, 2020

## AIR TRAVEL AND COMMUNICABLE DISEASES

### Status of Research Efforts and Action Still Needed to Develop Federal Preparedness Plan

## What GAO Found

The United States still lacks a comprehensive plan for national aviation preparedness to limit the spread of communicable diseases through air travel. In December 2015 during the Ebola epidemic, GAO recommended that the Department of Transportation (DOT) work with relevant stakeholders, such as the Department of Health and Human Services (HHS), to develop a national aviation-preparedness plan for communicable disease outbreaks. GAO concluded that the absence of a national plan undermined the ability of the public-health and aviation sectors to coordinate on a response or to provide consistent guidance to airlines and airports. Moreover, Annex 9 to an international aviation treaty to which the United States is a signatory contains a standard that obligates member states to develop such a plan. DOT is now confronting an even more widespread public health crisis—the Coronavirus Disease (COVID-19) global pandemic—without having taken steps to implement this recommendation. Not only could such a plan provide a mechanism for the public-health and aviation sectors to coordinate to more effectively prevent and control a communicable disease threat, it could also help minimize unnecessary disruptions to the national aviation system, disruptions that to date have been significant. Some aviation stakeholders have publicly highlighted the resulting piecemeal approach to adopting standards during the response to COVID-19, such as various airline and airport policies regarding facemasks, as demonstrating the need for a more coordinated response. The existence of a national plan might have reduced some of the confusion among aviation stakeholders and passengers. While DOT agrees that a national aviation preparedness plan is needed, the agency continues to suggest that HHS and the Department of Homeland Security have responsibility for communicable disease response and preparedness planning. GAO continues to believe that DOT is in the best position to lead this effort given its oversight responsibilities and ties with relevant aviation stakeholders.

The Federal Aviation Administration (FAA) has sponsored limited federal research into disease transmission onboard aircraft and in airports. FAA's research goals focus on areas like improving airport operations and air space management, and developing new technologies, which FAA has aligned to DOT's strategic goals related to safety, infrastructure, and innovation. Based on prior work and interviews with FAA officials, GAO found that FAA's research in cabin safety for crew and passengers does not focus on disease transmission. For example, according to FAA officials, ongoing research that most closely relates to disease contamination is research related to monitoring the quality of "bleed air," which is outside air that is drawn through jet engines into an aircraft cabin. In 2017, GAO found that FAA could be more strategic in how it develops its research and development (R&D) portfolio, chiefly in identifying long-term research needs and explaining how FAA selects projects. Of the three recommendations GAO made in that report to improve FAA's management of its R&D portfolio, FAA fully addressed one, issuing guidance in 2018 on prioritizing and selecting R&D projects. While FAA has made some progress addressing GAO's recommendations on research portfolio development and reporting, further attention to these recommendations could help ensure that FAA strategically identifies research priorities across the agency.

Chairwoman Horn, Ranking Member Babin, and Members of the Subcommittee:

Thank you for the opportunity to discuss our body of work relating to reducing the risk of communicable disease transmission in the aviation sector and the status of the Department of Transportation's (DOT) aviation research and development on this topic. The outbreak of Coronavirus Disease 2019 (COVID-19) is having profound effects around the world. Its global transmission was greatly aided and accelerated by air travel, which totaled more than 4.5 billion passengers in 2019, mostly before the widespread outbreak. In light of the resulting pandemic and warnings about the risks of air travel, U.S. passenger airline traffic fell by 96 percent in April 2020, as compared to April 2019. COVID-19 is only the latest communicable disease to raise concerns about the spread of contagion through air travel. Since 2002, there have been six major public health epidemic threats with global ramifications, including the severe acute respiratory syndrome (SARS) in 2003 and the Ebola virus disease in 2014. More than any other mode of transportation, air travel creates the potential for infection to move quickly from one part of the world to another. In December 2015, we recommended that the Secretary of Transportation should work with relevant federal stakeholders to develop a national aviation-preparedness plan for communicable disease outbreaks.<sup>1</sup>

In order to identify technologies and solutions to improve the safety of the civil aviation system, the federal government conducts research and development (R&D) to advance U.S. technological leadership and foster a dynamic aerospace industry. The Federal Aviation Administration (FAA) within DOT, along with the National Aeronautics and Space Administration (NASA), is responsible for the management of the federal government's civil aviation R&D. The Centers for Disease Control (CDC) within the Department of Health and Human Services (HHS) also sponsors health-related research involving air transportation.

My testimony today is based largely on reports we issued in 2015 on air travel and communicable disease and in 2017 on FAA's management of

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<sup>1</sup>GAO, *Air Travel and Communicable Diseases: Comprehensive Federal Plan Needed for U.S. Aviation System's Preparedness*, [GAO-16-127](#) (Washington, D.C.: Dec. 16, 2015).

commercial aviation R&D.<sup>2</sup> Specifically, this testimony describes: (1) the U.S. aviation system's preparedness to respond to communicable disease threats from abroad and (2) FAA's management of its R&D portfolio, including the extent to which disease transmission on aircraft and at airports has been the focus of FAA research.

To conduct our prior work, we reviewed available documents and interviewed officials from the key federal departments with responsibilities for conducting aviation research and for preparing for communicable disease threats from abroad and responding to them. In addition, we interviewed a range of stakeholders to discuss aviation preparedness and research, and potential opportunities to improve those areas. More detailed information on our objectives, scope, and methodology can be found in each of the reports.

For this statement, we contacted DOT, Department of Homeland Security (DHS), and HHS officials to determine the status of a national aviation-preparedness plan for the aviation system as recommended in our 2015 report. In addition, we interviewed FAA officials to learn about actions FAA has taken to address the recommendations we made in our 2017 report to improve the development, tracking, and reporting of the federal government's civil-aviation research and development portfolio. We also reviewed aviation-related research on communicable disease from the past 10 years, selected based on key word searches.

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

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## Background

In the United States, the roles and responsibilities related to preparing for, assessing, and responding to communicable disease threats in the civil aviation system require immense coordination among a number of federal

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<sup>2</sup>[GAO-16-127](#) and GAO, *Aviation Research and Development: FAA Could Improve How It Develops Its Portfolio and Reports Its Activities*, [GAO-17-372](#) (Washington, D.C.: Apr. 24, 2017).

agencies and aviation stakeholders. Each federal agency has a different mission, which affects its responsibilities for protecting against communicable disease threats. The DHS and HHS are the lead agencies for responding to a communicable disease threat. They focus on protecting our borders at ports of entry, including airports, from threats from abroad and protecting the nation from domestic and foreign health, safety, and security threats, respectively. FAA is responsible for civil aviation and commercial space transportation flight safety in the United States and the safe and efficient movement of air traffic in the national airspace system, as well as for the safety of U.S. airlines, other U.S. operators, and FAA-certificated aircrews worldwide. As part of this responsibility, FAA regulates and certifies airports, airlines, and airmen and provides guidance.<sup>3</sup>

In the case of a communicable disease threat, numerous federal, state, and local entities may be called upon to respond, depending on their legal authority and whether the threat is identified before, during, or after the flight. For example, before boarding, HHS and DHS may identify travelers who are not allowed travel, based on public health threats.<sup>4</sup> The CDC can prohibit the introduction of nonresident foreign nationals into the United States from designated countries or places, but only for such time as the CDC deems necessary for public health. During a flight, CDC regulations require pilots to immediately report to CDC any deaths or the occurrence of any travelers with signs or symptoms that may indicate a communicable disease infection during international flights coming to the United States. And, once an aircraft with a suspected ill passenger approaches an airport, federal or local public health officials, first responders (e.g., fire or emergency medical technicians), airport authorities, air traffic control personnel, or a combination of these stakeholders may make decisions about and lead certain aspects of the response based on the situation and available response protocols or preparedness plans. In addition, some response-related roles and responsibilities are established in law or by interagency agreements, and

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<sup>3</sup>Within the Department of Labor (DOL), the Occupational Safety and Health Administration (OSHA) aims to assure safe and healthful working conditions, including for airline crews and the contract employees who clean aircraft.

<sup>4</sup>When HHS requests DHS assistance, HHS notifies DHS's Transportation Security Administration of individuals it has identified as public health threats who should be designated "Do Not Board."

others may be defined in FAA-required airport-emergency plans, although those plans are not required to address communicable disease threats.

In addition, FAA supports and coordinates a range of R&D activities for the civil aviation system. The inventory of FAA's R&D activities is expressed in the *National Aviation Research Plan (NARP)* and in *FAA's Fiscal Year R&D Annual Review*.<sup>5</sup> FAA is required to submit both of these documents annually to Congress.<sup>6</sup> According to FAA's most recent *NARP*, FAA's research budget from all accounts in FY 2017 was \$422.3 million.<sup>7</sup> FAA's research budget supports activities conducted by FAA as well as a range of partners, including other government agencies, universities, and private sector organizations.

FAA's process for developing its commercial aviation research portfolio spans the agency. To develop the *NARP* and its R&D portfolio, FAA's program planning teams, which focus on specific research program areas, identify R&D projects to meet one of DOT's three strategic goals and FAA's five R&D goals.<sup>8</sup> Further, an executive board in FAA provides guidance and oversight over the agency's portfolio development process, and a statutorily created advisory committee—consisting of individuals that represent corporations, universities, associations, and others—conducts external reviews of FAA's R&D programs for relevance, quality, and performance. This advisory committee also makes recommendations to FAA on the proposed R&D portfolios and budgets.

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## In the Continued Absence of a Comprehensive National Plan, the U.S. Aviation System

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<sup>5</sup>FAA uses the *NARP* to present budget requirements for its R&D programs to Congress. The *NARP* identifies FAA's R&D goals and research programs that the agency has prioritized. The *FAA's Fiscal Year R&D Annual Review* provides summaries of R&D accomplishments.

<sup>6</sup>49 U.S.C. § 44501(c).

<sup>7</sup>Three appropriation accounts contribute to FAA's overall research budget, including Research, Engineering and Development (RE&D), Facilities & Equipment (F&E), and Grants-In-Aid for Airports (AIP).

<sup>8</sup>DOT's three strategic goals focus on safety, infrastructure, and innovation. FAA's R&D goals focus on, among other things, airport and air space management, infrastructure durability, new technologies, system-wide analysis, and improving the human component of the system.

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## Remains Insufficiently Prepared to Respond to Communicable Disease Threats

In 2015, we found that the United States lacked a comprehensive national aviation-preparedness plan to limit the spread of communicable diseases through air travel, though some individual airport and airline preparedness plans did exist.<sup>9</sup> Accordingly, we recommended that DOT work with relevant stakeholders, such as HHS, to develop a national aviation-preparedness plan for communicable disease outbreaks. We emphasized that a comprehensive national plan would provide a coordination mechanism for the public-health and aviation sectors to more effectively prevent and control a communicable disease threat while also minimizing unnecessary disruptions to the national aviation system. Additionally, U.S. airports and airlines are not required to have individual preparedness plans for communicable disease threats and no federal agency tracks which airports and airlines have them. As such, the extent to which U.S. airports and airlines have such plans is unknown. However, all 14 airports and 3 airlines we reviewed in 2015 had independently developed preparedness plans for responding to communicable disease threats from abroad. These plans generally addressed the high-level components that we identified as common among applicable federal and international guidance for emergency preparedness, such as establishment of an incident command center and activation triggers for a response. While the 14 airports and 3 airlines had plans that address communicable diseases, representatives from these airports and airlines reported facing multiple challenges in responding to threats. Identified challenges that included obtaining guidance; communication and coordination among responders; and assuring employees have appropriate training, equipment, and sanitary workplaces. As we stated in our 2015 report, a national aviation preparedness plan to respond to communicable disease outbreaks could help address these challenges.

As of June 2020, DOT, DHS, and HHS stated that the federal government still has not developed a national aviation-preparedness plan to respond to communicable disease outbreaks. In making our recommendation in 2015, we pointed to Annex 9 to the Chicago Convention—an international aviation treaty to which the United States is a signatory—which contains a standard that obligates International Civil Aviation Organization (ICAO)

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<sup>9</sup>[GAO-16-127](#).

member states to develop a national aviation-preparedness plan for communicable disease outbreaks.<sup>10</sup> DOT and CDC officials in 2015 stated that some elements of a national aviation-preparedness plan already exist, including plans at individual airports. However, as we discussed in our 2015 report, individual airport plans are often contained in multiple documents, and FAA reported that the plans are intended to handle communicable disease threats posed by passengers on one or two flights, rather than an epidemic—which may require involvement from multiple airports on a national level. Most importantly, a national aviation-preparedness plan would provide airports and airlines with an adaptable and scalable framework with which to align their individual plans, to help ensure that individual airport and airline plans work in concert with one another.

DOT and CDC officials agreed in 2015 and continue to agree today that a national aviation-preparedness plan could add value. DOT, however, maintains that those agencies that have both legal authority and expertise for emergency response and public health—namely DHS and HHS—are best positioned to take the lead role in developing such a plan within the existing interagency framework for national-level all-hazards emergency preparedness planning. We continue to believe that DOT would be in the best position to lead the effort because FAA and DOT have stronger and deeper ties to, as well as oversight responsibility for, the relevant stakeholders that would be most involved in such a broad effort, namely airlines, airports, and other aviation stakeholders. In addition, DOT's Office of the Secretary is the liaison to ICAO for Annex 9 to the Chicago Convention, in which the relevant ICAO standard is contained.

In response to the current COVID-19 pandemic and in the absence of a national aviation-preparedness plan, DOT officials pointed to ongoing efforts to engage with interagency partners at DHS and HHS, as well as industry stakeholders, to better collaborate on the aviation sector's communicable disease response and preparedness. For example, DOT told us that it has facilitated conference calls between federal and private

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<sup>10</sup>Chicago Convention on International Civil Aviation, Section F of Annex 9, subparagraph 8.16. ICAO is a United Nations specialized agency created in 1944 by the Convention on International Civil Aviation (Chicago Convention), under which ICAO Member States agreed, among other things, "to take effective measures to prevent the spread by means of air navigation of cholera, typhus (epidemic), smallpox, yellow fever, plague and such other communicable diseases as the [ICAO Member] States shall from time to time decide to designate." Chicago Convention on International Civil Aviation art. 14, Apr. 4, 1944, 61 Stat 1180, T.I.A.S. No. 1,591.



sector stakeholders and has collaborated with CDC to update interim guidance for airline crews related to communicable diseases, specifically COVID-19.<sup>11</sup> While these actions are helpful, some aviation stakeholders have publicly highlighted piecemeal response efforts that may have led to some of the confusion among stakeholders and chaos at certain airports that occurred earlier this year following the COVID-19 travel bans and increased screening efforts. For example, stakeholders described actions taken by individual airlines in the absence of FAA guidance, such as to cease operations to certain countries, and a piecemeal approach to establishing standards for safely continuing or expanding service, such as various airline and airport policies regarding facemasks. This piecemeal approach points to the continued need for DOT to implement our 2015 recommendation to develop a coordinated effort to plan for and respond to communicable disease threats. We have included this open recommendation as one of 16 high priority recommendations to DOT.<sup>12</sup>

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## FAA Has Taken Steps to Improve Its R&D Portfolio Management, but Has Conducted Limited Research on Disease Transmission in Aircraft and Airports

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### FAA is Taking Steps to Improve the Formulation and Management of its R&D Portfolio Based on GAO Recommendations

While a national aviation-preparedness plan can help better manage the response to the next aviation pandemic, other efforts such as research and development are also key. In 2017, we found that FAA's actions related to the management of its R&D portfolio were not fully consistent with statutory requirements, agency guidance, and leading practices.<sup>13</sup> As part of that work, we assessed FAA's actions to manage its R&D portfolio in three key areas: (1) developing its portfolio of R&D projects, (2) tracking and evaluating those projects, and (3) reporting on its portfolio.

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<sup>11</sup>CDC, *Updated Interim Guidance for Airlines and Airline Crew: Coronavirus Disease 2019 (COVID-19)* (Updated Mar. 11, 2020).

<sup>12</sup>GAO, *Priority Open Recommendations: U.S. Department of Transportation GAO-20-513PR* (Washington, D.C.: April 23, 2020).

<sup>13</sup>GAO-17-372.

We found that FAA could be more strategic in how it develops its R&D portfolio, chiefly in identifying long-term research needs and in improving disclosure of how projects are selected. As a result of these deficiencies, we found that FAA management could not be assured that the highest priority R&D was being conducted. We also found that while FAA tracks and evaluates its research projects consistent with leading practices, it did not fully address all statutory reporting requirements, such as identifying long-term research resources in the *National Aviation Research Plan (NARP)* or preparing the *R&D Annual Review* in accordance with government performance-reporting requirements. These reporting deficiencies can limit the usefulness of the reports to internal and outside stakeholders. Accordingly, in 2017, we recommended that DOT direct FAA to (1) take a more strategic approach to identifying long-term R&D research priorities across the agency, (2) disclose how research projects are prioritized and selected, and (3) ensure that the NARP and *R&D Annual Reviews* meet statutory requirements for content. DOT agreed with all three recommendations.

As of June 2020, FAA has fully addressed one of our recommendations and taken partial action on two other recommendations. Specifically, FAA fully responded to our recommendation that FAA disclose the process it uses for prioritizing and selecting research projects by updating in 2018 its internal guidance documents to allow better transparency over project selection. In partially responding to our recommendation to take a more strategic approach to identifying research priorities across the agency, in June 2019, FAA issued a redesigned *National Aviation Research Plan (NARP)* for 2017-2018. The redesigned plan is a good first step. Also as part of an effort to be more strategic, FAA is beginning to take actions to understand emerging aviation issues requiring FAA's research attention. This recommendation has not been fully addressed as, according to FAA officials, the agency is still developing guidance to ensure that future NARPs take a strategic approach and incorporate emerging issues into future plans. FAA officials told us they plan to finalize the guidance by the end of 2020. Similarly, with respect to our recommendation aimed at achieving compliance with statutory reporting requirements, the redesigned 2017-2018 NARP included a list of agreements with federal and nonfederal entities on research activities, resource allocation decisions, and a description of technology transfer to government, industry, and academia, among other items. Officials told us that they are finalizing the 2019 *R&D Annual Review*, which has been redesigned to address other statutory reporting requirements, and will develop guidance to ensure that future documents meet those requirements.

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## Disease Transmission Research Has Received Limited FAA Focus in Recent Years

FAA has sponsored limited federal research into disease transmission onboard aircraft and in airports. FAA's research goals focus on areas like improving airport operations and air space management, and developing new technologies, which FAA has aligned to DOT's strategic goals related to safety, infrastructure, and innovation. Based on our prior work and interviews with FAA officials, we found that FAA's research in cabin safety for crew and passengers does not focus on disease transmission. For example, according to FAA officials, as of June 2020, ongoing research that most closely relates to disease contamination is research related to monitoring the quality of "bleed air," which is outside air that is drawn through jet engines into an aircraft cabin.<sup>14</sup> FAA officials said that its Civil Aerospace Medical Institute is participating in this research.

Even so, FAA has funded some programs that are relevant to mitigating communicable disease transmission at airports and on aircraft. For example, in 2015 the Transportation Research Board's Airports Cooperative Research Program (ACRP), which is funded by FAA's Airport Improvement Program (AIP), decided to hold a series of workshops on topics that are of significance to airports and that are not being addressed by other federal research programs.<sup>15</sup> The decision to hold the first ACRP workshop on communicable disease occurred toward the end of the Ebola virus outbreak. ACRP has also issued reports on reducing communicable disease transmission at airports and aircraft.<sup>16</sup> These reports have provided information and guidance to airports and airlines on infectious disease mitigation onboard aircraft and ways to

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<sup>14</sup>Air supplied to a pressurized aircraft cabin occurs via an environmental control system. Fresh air from outside the aircraft enters the environmental control system in most large commercial airplanes via the aircraft engines. The compressed air is then "bled" through ports and is cooled before being mixed with recirculated air, ultimately becoming distributed throughout the cabin. See FAA, Civil Aerospace Medical Institute, *Aircraft Cabin Bleed Air Contaminants: A Review* (Oklahoma City, OK: November 2015).

<sup>15</sup>Transportation Research Board, *Airport Roles in Reducing Transmission of Communicable Diseases: Summary of a Workshop of the Airport Cooperative Research Program's 2018 Insight Event* (Washington, D.C.: 2019).

<sup>16</sup>Transportation Research Board, *Infectious Disease Mitigation in Airports and on Aircraft*, (Washington, D.C.: 2013); Transportation Research Board, *Preparing Airports for Communicable Diseases on Arriving Flights: A Synthesis of Airport Practice* (Washington, D.C.:2017).

respond to a communicable disease in airports. For example, a 2013 ACRP report recommends reducing the amount of time aircraft ventilation systems are shutdown at the gate, so that an aircraft's high efficiency particulate air (HEPA) systems, which can capture more than 99 percent of the airborne microbes, continue to operate. ACRP also has a research project currently under way for publication early next year on effective collaboration to prevent, respond to, and mitigate disease threats.<sup>17</sup>

Prior to 2014, FAA also funded some research on disease transmission on aircraft through its Centers of Excellence research consortium. Specifically, in 2004, FAA established the Airliner Cabin Environment Research (ACER) Center of Excellence, which conducts research on, among other things, the safety and health of passengers and crew inside the cabin. In 2010 and 2012, ACER published research on air quality in airline cabins and disease transmission in aircraft.<sup>18</sup> A researcher we interviewed who is affiliated with ACER said that the Center established a laboratory in 2006, called ACERL, which is currently conducting research on the dispersion of airborne particles (including viruses) in the aircraft cabin for CDC's National Institute of Occupational Safety and Health. As of 2014, ACER began operating independently as a consortium academia, government, and others and is no longer being funded solely by FAA.

FAA and DOT principally look to HHS and the CDC for guidance on passenger health issues. HHS has statutory responsibility for preventing the introduction, transmission, and spread of communicable diseases into the United States and among the states.<sup>19</sup> Within HHS, CDC has defined its mission as protecting America from health, safety and security threats, both foreign and domestic. CDC alerts travelers about disease outbreaks

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<sup>17</sup>Transportation Research Board, *Effective Collaboration to Plan and Respond to Communicable Disease Threats* (03-49). Expected publication January 2021.

<sup>18</sup>National Air Transportation Center of Excellence for Research in the Intermodal Transport Environment (RITE), Airliner Cabin Environment Research (ACER) Program, *Report to the FAA on the Airliner Cabin Environment* (Report No. RITE-ACER-CoE-2010-1) (Aug. 16, 2010); National Air Transportation Center of Excellence for Research in the Intermodal Transport Environment (RITE), Airliner Cabin Environment Research (ACER) Program, *Infectious Disease Transmission in Airliner Cabins* (Report No. RITE-ACER-CoE-2012-01) (Feb. 22, 2012).

<sup>19</sup>Under section 361 of the Public Health Service Act (codified at 42 U.S.C. § 264), HHS is authorized to make and enforce regulations to prevent the entry and spread of communicable diseases from foreign countries into the United States and among states. The authority for carrying out these functions on a daily basis has been delegated to CDC, an agency in HHS.

and steps they can take to protect themselves. CDC also has the authority to quarantine passengers traveling from foreign countries, if necessary, to prevent the introduction, transmission, or spread of communicable disease. CDC's National Institute for Occupational Safety and Health has conducted research and issued guidance in the past on disease transmission in aircraft and cabin crew health and, as previously noted, is funding current research through the ACER Center. CDC has also issued COVID-19 guidance for cabin crew safety.

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### Some Technologies Could Be Useful to Reduce the Risks of Communicable Disease in Air Travel

There are a variety of technologies that could help address infectious disease transmission associated with air travel, but these technologies are at various stages of maturity. For example, the initial screening of passengers for fevers is typically done with handheld infrared thermometers and has been reportedly discussed for use by Transportation Security Agents. Reports also state that the mass screening of crowds using thermal cameras has been used in some airports in Asia, but such scanners are still being tested for standalone use in the United States, with some concerns reported about the accuracy of the results. Aircraft disinfection has traditionally been done by cleaning crews, but a number of methods are being developed using heat, chemicals, and UV light, and are under examination by researchers.

Chairwoman Horn, Ranking Member Babin, and Members of the Subcommittee, this completes my prepared remarks. I would be pleased to respond to any questions that you or other Members of the Subcommittee may have at this time.

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### GAO Contact and Staff Acknowledgments

If you or your staff have any questions about this statement, please contact me at (202) 512-2834 or [krauseh@gao.gov](mailto:krauseh@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement.

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