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During the Initial COVID-19 Response, HHS Personnel Who Interacted With Potentially Infected Passengers Had Limited Protections

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Why OIG Did This Review

In early 2020, various sources—including personnel from HHS, Members of Congress, and the media—expressed concerns with how HHS personnel were protected from risk of COVID-19 exposure at quarantine stations and sites during the initial COVID-19 response. The Centers for Disease Control and Prevention (CDC), within HHS, issues recommendations for protection against infectious disease exposure, which includes travel-related containment measures. At **quarantine stations**, CDC personnel screened passengers who were entering the United States as private citizens via commercial flights. At **quarantine sites** (six Federal worksites), HHS personnel screened and quarantined passengers entering the United States as evacuees. In total, HHS screened hundreds of thousands of passengers and quarantined thousands of them in an effort to prevent the spread of COVID-19 in the United States.

How OIG Did This Review

Our review covers the initial COVID-19 response (i.e., January through March 2020). We interviewed officials and program staff within HHS, including CDC. We surveyed nearly 700 HHS personnel who worked at quarantine stations and sites, and we reviewed written responses and documentation. We also analyzed several thousand HHS documents.

During the Initial COVID-19 Response, HHS Personnel Who Interacted With Potentially Infected Passengers Had Limited Protections

Key Takeaway

Initially, CDC recommended limited protections for HHS staff who were interacting with passengers entering the United States. During the period we reviewed, CDC's understanding of COVID-19 was evolving and the protections improved but still contained some vulnerabilities. As a result, HHS personnel may have been at increased risk of COVID-19 exposure and may have inadvertently spread COVID-19.

interacting with potentially infected passengers. In addition, CDC's PPE trainings appear to have failed to meet two standards set by the Occupational Safety and Health Administration (OSHA). CDC was also initially limited in the extent to which it recommended other protections, such as physical (also referred to as "social") distancing, symptom monitoring, and self-quarantining. As data and knowledge about COVID-19 increased over time, CDC improved its recommendations for PPE and other protections, although some vulnerabilities remained.

CDC said that its approach to recommending protections for personnel was guided primarily by evolving COVID-19 data and previous pandemic-planning documents. However, we note that CDC's approach did not align with assumptions outlined in these documents. Finally, CDC did not have a comprehensive plan for recommending travel-related containment measures that weighed the risks—such as the risks to HHS personnel conducting screening—relative to the public health benefits.

What OIG Recommends and How the Agency Responded

OIG recommends that CDC: (1) update its guidance recommending protections for personnel who interact with potentially infected passengers, (2) ensure that its PPE trainings meet OSHA standards, and (3) develop a comprehensive plan for recommending travel-related containment measures that weighs the risks relative to the public health benefits. CDC concurred with all three recommendations.

What OIG Found

During the initial 3 months of the COVID-19 response—January through March 2020—CDC initially recommended limited personal protective equipment (PPE) for some HHS personnel at quarantine stations and sites. As a result, some personnel wore only limited PPE while

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BACKGROUND

OBJECTIVE

To assess the Centers for Disease Control and Prevention's (CDC's) recommended infection prevention and control protections for Department of Health and Human Services (HHS) personnel who were interacting with potentially infected passengers at quarantine stations and quarantine sites during the initial COVID-19 response (i.e., January through March 2020).

In mid-January 2020, HHS personnel began to take steps to prevent the spread of COVID-19 in the United States through, among other things, travel-related containment measures. CDC, other HHS and Federal agencies, and the White House faced the challenge of protecting the United States from a novel infectious disease. At the time, data on COVID-19 symptoms, transmission, and expected mortality were extremely limited and knowledge was evolving.

One step that was taken, starting in January 2020, was implementation of travel-related containment measures. These measures included conducting public health assessments (hereinafter referred to as "screening") of commercial airline passengers entering the United States from certain areas with high rates of COVID-19 infections, as well as the screening and quarantining of emergency repatriation evacuees. These measures were conducted by HHS personnel from CDC, the Administration for Strategic Preparedness and Response (ASPR), the Administration for Children and Families (ACF), and the U.S. Public Health Service Commissioned Corps.¹ See Appendix A for a detailed timeline of COVID-19 key events related to quarantine stations and sites, from December 2019—when the Wuhan Municipal Health Commission released its initial reports—through November 2020.

Federal regulations require all employers, including HHS, to provide employees with sufficient protection from hazards while performing their job duties. In the context of HHS's response to an infectious disease outbreak, these regulations are important for the protection of both the HHS personnel who respond to the outbreak and the members of the public with whom those personnel subsequently interact.

Various stakeholders raised concerns about efforts to protect HHS personnel while trying to also prevent the spread of COVID-19 within the United States. Specifically, beginning in late February 2020, several HHS personnel filed complaints regarding how they were protected while interacting with potentially infected passengers at quarantine stations and quarantine sites.² OIG also received and responded to two congressional requests into related matters. Finally, media reports also

highlighted concerns about the screening of passengers entering the United States after potential exposure to COVID-19 while abroad, and the impact that these activities may have had on the health and safety of Federal personnel.^{3, 4, 5, 6} This assessment of CDC's recommended protections for HHS personnel while interacting with potentially infected passengers is intended to improve future response efforts by identifying vulnerabilities in the initial response to COVID-19.

Federal authorities for passenger screening

CDC has the authority to quarantine and/or isolate⁷ passengers if they are infected with or have been exposed to quarantinable diseases as defined by Executive Order of the President (e.g., yellow fever, severe acute respiratory syndromes, smallpox).^{8, 9} Under this authority, CDC operates 20 quarantine stations at ports of entry and land border crossings where passengers arrive for entry into the United States. Among other daily activities, personnel who are permanently assigned to CDC quarantine stations (hereinafter referred to as "base personnel") respond to reports of ill passengers; screen them; and determine whether they should be isolated, quarantined, or released.^{10, 11}

When an infectious disease outbreak occurs, CDC may implement additional travel-related containment measures, such as enhanced passenger screening. This could entail proactively identifying groups of passengers to screen, rather than relying on reports from other entities regarding individual ill passengers. Prior to the COVID-19 outbreak, CDC most recently enhanced its quarantine-station screening activities in 2014 in response to the Ebola virus epidemic in West Africa.

Planning for travel-related containment measures during an infectious disease outbreak

Since at least 2005, HHS (including CDC), the Department of Homeland Security (DHS), the Homeland Security Council,¹² the National Security Staff, and the National Security Council have issued planning documents that contain guidance about travel-related containment measures (e.g., enhanced entry screening, isolation, quarantine, and/or conditional release) during an infectious disease outbreak.¹³ These documents contain, among other things, guidance on the benefits, risks, and other factors to consider when deciding whether and/or when to implement these measures at quarantine stations. None of these documents contain guidance for establishing federally operated long-term quarantine sites as a travel-related containment measure.

An assessment of benefits, risks, and other factors can help inform whether travel-related containment measures are worthwhile and, once implemented, whether these measures continue to be effective as the pandemic progresses. See Appendix B for more information on prior planning related to travel-related containment measures.

Benefits. The public health benefit of travel-related containment measures is to delay the spread of the infectious disease within the United States, which provides valuable time to activate a U.S. response.¹⁴ The measures can accomplish this by isolating, quarantining, and/or conditionally releasing passengers who are identified as potentially infected based on a screening criterion.^{15, 16} Travel-related containment measures can also result in directing sick passengers to medical care, if needed.

Health and safety risks. Some travel-related containment measures pose health and safety risks to personnel who are carrying out the response activities. Specifically, personnel may be exposed to the infectious disease while interacting with potentially infected passengers. These personnel could inadvertently spread infectious disease to members of the public with whom they interact. However, these risks can be mitigated by implementing protections to safeguard personnel and, in turn, the public.¹⁷

Other factors. Other factors—such as knowledge about the disease, the degree of community spread, the risk of misdirecting resources during a critical time period, and the number of passengers traveling—can also inform a risk-benefit assessment of travel-related containment measures. For example, the *2005 HHS Pandemic Influenza Plan* acknowledges that asymptomatic and/or presymptomatic transmission may minimize the effectiveness of screening but states that nonetheless, screening early in a pandemic may help slow the spread of a disease and allow additional time for the implementation of other response measures (e.g., testing, vaccines).^{18, 19}

In addition, when developing policy regarding travel-related containment measures, the *2005 HHS Pandemic Influenza Plan* states that one factor to consider is the degree of community spread versus the risk associated with further introduced cases. Once a disease has spread outside and within the United States, screening for ill passengers becomes less useful and feasible.²⁰ This plan advises that other community-based measures, such as increased physical (also referred to as “social”) distancing, to reduce disease transmission should be considered.²¹

Finally, the *2016 National Security Council Playbook for Early Response to High Consequence, Emerging Infectious Disease Threats and Biological Incidents* highlights that another factor to consider is the number of passengers. It states that if the outbreak is in a region that has a large volume of travel, then screening all passengers from that region becomes operationally difficult, if not impossible.²²

Travel-related containment measures in response to COVID-19

In January 2020, CDC began implementing travel-related containment measures, which included enhancing passenger screening at quarantine stations in response to COVID-19.²³ Such efforts were taken for passengers entering the United States as private citizens via commercial flights at 15 CDC quarantine stations between January and September 2020.²⁴ CDC reported that the primary public health benefit of passenger screening for COVID-19 was to prevent the spread by collecting passenger

contact information in case they became symptomatic after traveling. After screening passengers for symptoms, CDC conditionally released passengers for State and/or local followup in the event that they developed symptoms in the 2 weeks following their travel. CDC also issued Federal isolation and quarantine orders for some passengers as a result of passenger screening at quarantine stations.



Quarantine Stations: CDC worksites where commercial passengers were screened for COVID-19. Stations operate year-round and are not used for long-term quarantine.



Quarantine Sites: Federal worksites, such as military installations, that HHS used during the COVID-19 response to screen and oversee the long-term quarantine of evacuees. Sites do not operate year-round.

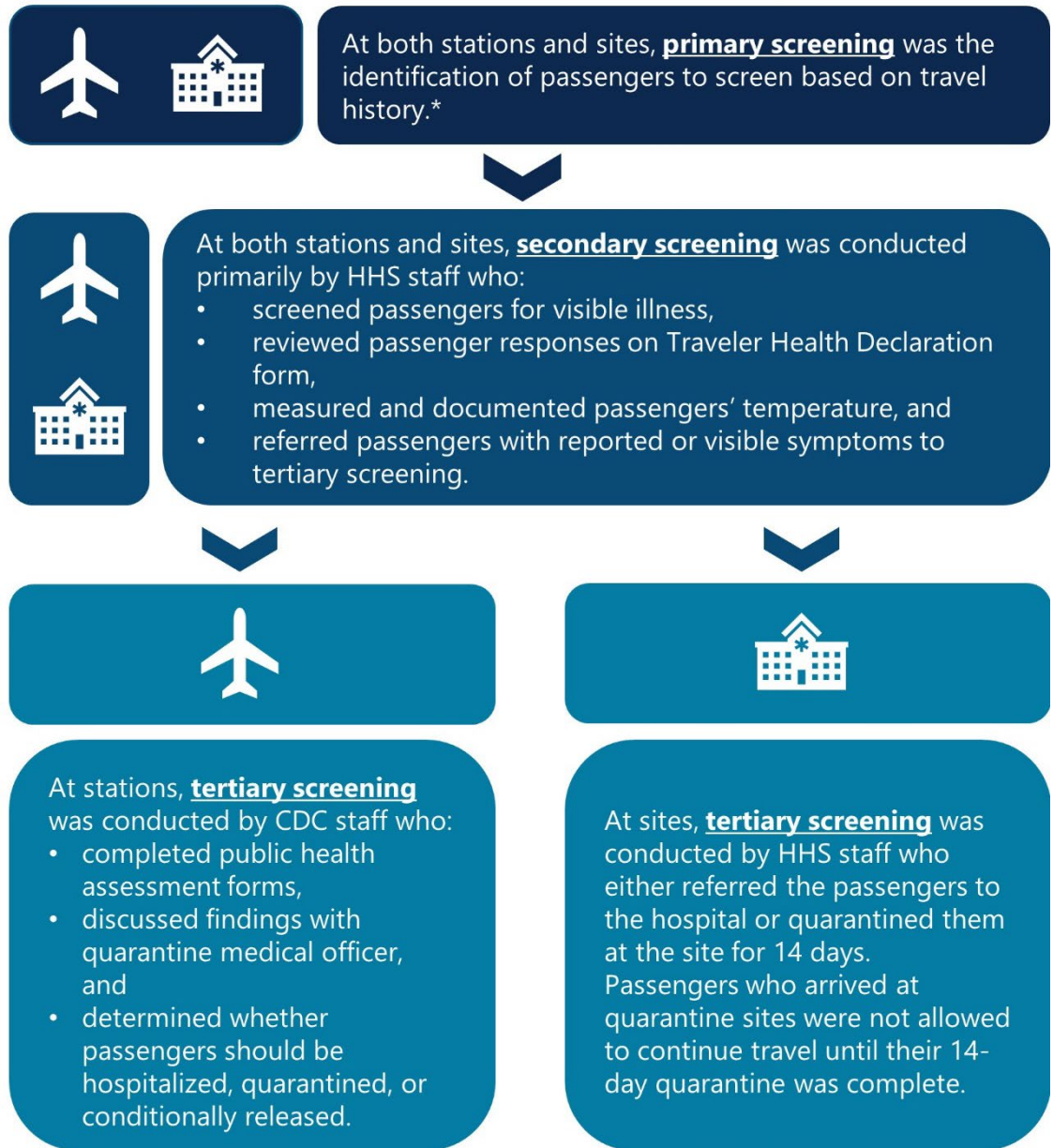
Because of the large volume of passengers needing to be screened for COVID-19 in early 2020, the number of CDC base personnel at quarantine stations was not sufficient to implement these enhanced screening efforts. CDC solicited additional (i.e., surge) personnel from CDC and the U.S. Public Health Service Commissioned Corps to

temporarily deploy and aid quarantine stations.²⁵ During our review period, CDC deployed nearly 375 surge personnel to assist approximately 75 base personnel with COVID-19 screening at quarantine stations. Customs and Border Protection (CBP) also assisted with passenger screening.

Travel-related containment measures were also implemented for passengers entering the United States as emergency repatriation evacuees. This included quarantining these passengers at six quarantine sites from January through March 2020.²⁶ Quarantine sites are Federal worksites, such as Department of Defense military installations, that were stood up for the first time during the COVID-19 response. At these sites, HHS personnel, including personnel from ACF, ASPR, the U.S. Public Health Service Commissioned Corps, and CDC screened and oversaw the quarantine of passengers entering the United States as emergency repatriation evacuees. While commercial passengers at airport quarantine stations went through screening to determine whether they should be isolated, quarantined, or conditionally released, evacuees at quarantine sites were screened and then required to adhere to a 14-day quarantine during which they were monitored and could not leave the quarantine site. Therefore, in addition to passenger screening, HHS personnel at quarantine sites also carried out a variety of other services to help oversee evacuees' quarantine period, which sometimes required interactions with potentially infected passengers. These other services included case management, social support, and wraparound services (e.g., medical care, logistics, and operations). More than 1,000 HHS personnel were deployed to carry out duties at quarantine sites between January and March 2020.

See Exhibit 1 for more details regarding passenger screening and quarantining that occurred between January and March 2020 in response to COVID-19.

Exhibit 1: COVID-19 passenger screening at quarantine stations, as well as screening and quarantining at quarantine sites, between January and March 2020



Source: OIG interviews with ACF, ASPR, and CDC and review of documentation (e.g., written materials and briefs provided to personnel prior to deploying) regarding COVID-19 screening and quarantining, 2021.

* CBP generally conducted primary screening during the initial COVID-19 response at quarantine stations. The Department of State primarily identified the emergency repatriation evacuees who were processed at quarantine sites. HHS personnel did not conduct primary screening.

Protecting HHS personnel from occupational hazards

The risks associated with interacting with potentially infected passengers can be mitigated by implementing protections to safeguard involved personnel. Controlling exposure is the fundamental method of protecting personnel from infectious diseases like COVID-19.²⁷ Infection controls are intended to limit the spread of infectious diseases to personnel and, in turn, indirectly help protect the public from such exposures.²⁸

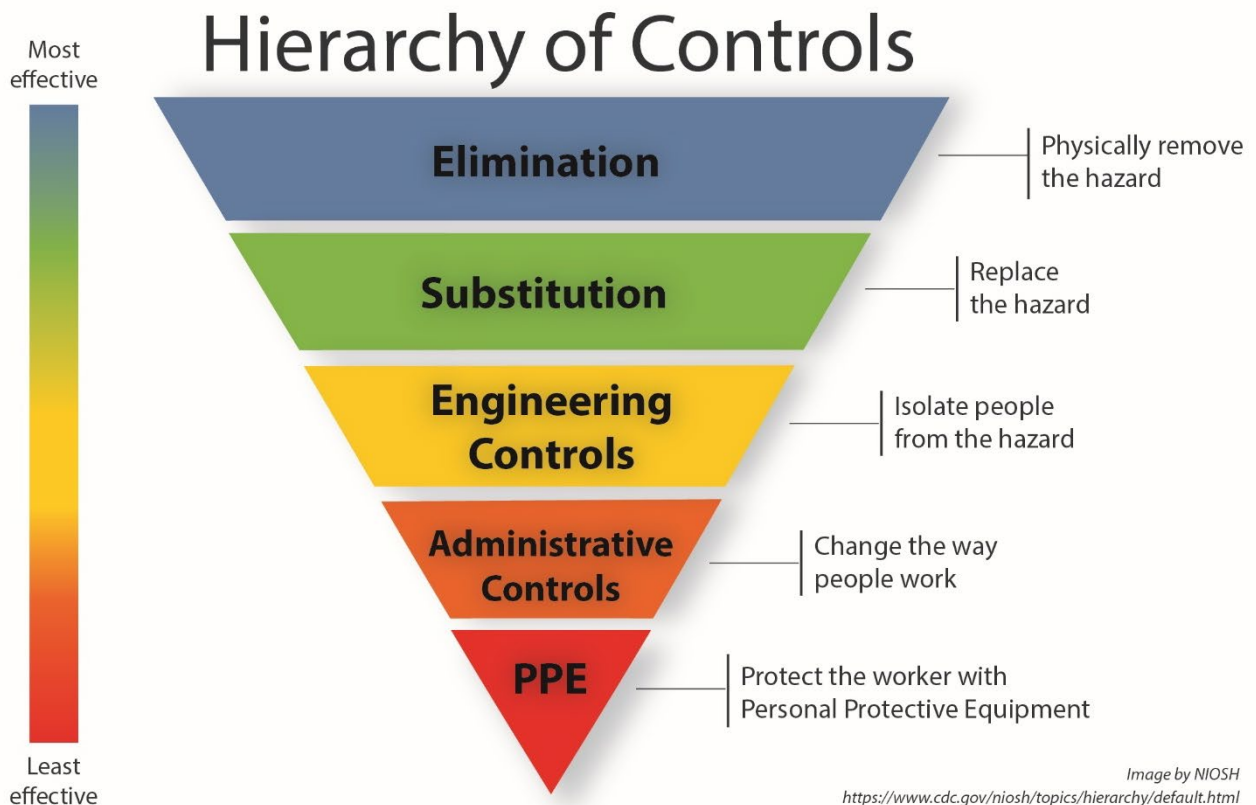
Federal requirements and recommendations for protecting personnel

The Department of Labor's Occupational Safety and Health Administration (OSHA) has promulgated regulations implementing the Occupational Safety and Health Act (i.e., OSHA standards). These regulations apply to all Federal agencies.²⁹ As a part of the OSHA standards, OSHA requires employers: (1) to assess occupational hazards, such as infectious diseases, to which personnel may be exposed and (2) to protect personnel, as necessary, based on those hazards.³⁰

CDC's National Institute for Occupational Safety and Health (NIOSH) is responsible for conducting research and making recommendations for the prevention of work-related injury and illness.³¹ OSHA uses NIOSH's guidance and recommendations to develop and enforce workplace safety and health regulations.³²

NIOSH and OSHA have developed a Hierarchy of Controls to determine how to implement feasible and effective control solutions for identified hazards. See Exhibit 2 for NIOSH's representation of the Hierarchy of Controls.

Exhibit 2: CDC/NIOSH Hierarchy of Controls for protecting personnel



Source: CDC/NIOSH, *Hierarchy of Controls*, January 13, 2015. Accessed at <https://www.cdc.gov/niosh/topics/hierarchy/default.html> on April 22, 2021.

The Hierarchy of Controls reflects the order in which employers should approach protecting personnel. Employers should first determine whether they can eliminate a hazard by not putting personnel in situations in which they are exposed to the hazard or substituting it for something less hazardous. For example, an employer could eliminate a hazard by not requiring an employee to perform the job duty where a hazard is present (e.g., not requiring personnel to interact with potentially infected passengers). If eliminating or substituting the hazard is not possible and personnel must be exposed, employers should next use engineering controls (isolating people from the hazard) and administrative controls (changing the way people work) to protect personnel from the hazard.³³ These controls include, for example, installing clear plastic sneeze guards (a type of engineering control) or establishing alternating work days to reduce the total number of personnel working onsite (a type of administrative control).

When engineering and administrative controls are not feasible or do not provide sufficient protection, OSHA requires that employers provide personal protective equipment (PPE) to personnel and ensure its use.³⁴ Although used to protect against exposures, PPE is considered potentially less effective at preventing exposure than

other controls.³⁵ As such, OSHA advises that PPE should be a supplemental control and should not take the place of engineering and administrative controls.³⁶ See Appendix C for more information regarding OSHA and CDC Hierarchy of Controls, including engineering and administrative controls for infectious disease exposure.

OSHA standards outline the requirements for employers regarding PPE, including PPE training, for personnel in the event they need to wear PPE. OSHA standards set forth that any employee who is required to wear PPE shall receive training, and OSHA standards outline the required components of this training.³⁷ OSHA standards regarding PPE training apply both to respirators (e.g., filtering facepiece respirators, such as N95 respirators, and half-mask air-purifying respirators) and nonrespirator PPE (e.g., gloves, gowns, and face shields).³⁸ (See Appendix C for more information regarding PPE types.)

OSHA standards require that both respirator and nonrespirator PPE training include:

- what PPE is required and when the PPE must be worn;
- the limitations and capabilities of the PPE;
- how to inspect, put on (don), remove (doff), and use the PPE; and
- the procedures for maintaining and storing the PPE.

In addition, OSHA standards specify the need for personnel to demonstrate an understanding of the training and the ability to use the PPE properly before being allowed to perform work requiring its use.³⁹

CDC's recommended protections—which pre-date COVID-19—for quarantine station personnel who interact with potentially infected passengers

As required by OSHA standards, CDC conducted a hazard assessment in 2019 that required base personnel who interact with potentially infected passengers at quarantine stations to wear certain PPE.⁴⁰ This 2019 assessment required the following PPE:

- respirators,
- safety glasses with side shields,
- face shields,
- earmuffs,
- ear plugs,
- Tyvek disposable suits,
- jackets or coats, and

- a double set of disposable nitrile or latex gloves.⁴¹

This hazard assessment was the most recent assessment prior to COVID-19, and it did not distinguish among the required PPE for the various types of interactions with passengers that could occur (e.g., secondary and tertiary screening).⁴² Because quarantine sites had never existed prior to COVID-19, there are no prior hazard assessment or other health and safety documentation specific to quarantine sites prior to the COVID-19 response.

CDC's recommended COVID-19 protections for quarantine station and quarantine site personnel who interacted with potentially infected passengers

During our review period, CDC issued various guidance documents recommending COVID-19-related health and safety protections at quarantine stations and sites. These recommendations guided the protections afforded to HHS personnel who were interacting with potentially infected passengers during COVID-19 screening and quarantine-related activities. However, CDC did not have legal authority to direct personnel of any HHS component agency other than CDC personnel to comply with CDC recommendations regarding PPE use or other suggested COVID-19 protections.

Related work

In April 2021, the Government Accountability Office (GAO) issued a report on HHS's response to COVID-19 at quarantine sites.⁴³ GAO found a lack of clarity regarding which agency was identified as the lead at quarantine sites, as well as coordination issues among HHS agencies, which led to frustrations and complications. Further, GAO found that HHS's delay in issuing quarantine orders led to a passenger's attempt to leave a quarantine site. Finally, GAO found that HHS personnel inconsistently used PPE, and that HHS officials disagreed over which agency oversaw infection prevention and control protections. GAO recommended that HHS: (1) revise or develop new emergency repatriation response plans and clarify agency roles and responsibilities, including those for an evacuation and quarantine during a pandemic, and (2) plan and conduct regular exercises with relevant stakeholders to test repatriation plans in response to a pandemic and update relevant plans based on lessons learned. HHS concurred with both recommendations but, as of this report's release, had not yet implemented them.

In addition, the HHS Office of the General Counsel (OGC) acknowledged similar issues in a report published by the Office of Special Counsel in January 2021.⁴⁴ Specifically, like GAO, HHS-OGC found interagency coordination issues and inconsistent PPE use.⁴⁵

Methodology

Scope

To assess the COVID-19 protections for HHS personnel at quarantine stations and sites, we determined how passenger screening and quarantining occurred and what protections were in place to mitigate the risks associated with infectious disease exposure. As such, we primarily focused our assessment on the protections that CDC recommended during the initial COVID-19 response. In some circumstances, we also assessed the implementation of those protections by each respective HHS agency.⁴⁶

We define “HHS personnel” as personnel from ACF, ASPR (including the National Disaster Medical System), CDC, and members of the U.S. Public Health Service Commissioned Corps.⁴⁷ U.S. Public Health Service Commissioned Corps officers supported ACF, ASPR, and CDC personnel. Therefore, when we refer to HHS personnel by agency (e.g., “CDC personnel”), this includes any Commissioned Corps officers who were either temporarily or permanently stationed at and/or deployed by that agency.

Our assessment of protections focused on those controls relevant to responding to COVID-19. Thus, we reviewed elimination controls (physically removing the hazard), engineering controls (isolating people from the hazard), administrative controls (changing the way people work), and PPE. We did not review substitution controls (replacing the hazard) because they are impossible in an infectious disease response.

With regard to PPE training, we focused our review on CDC’s PPE training because it was the only PPE training that was reported to us as having been provided to personnel immediately before their COVID-19 deployments at quarantine stations and sites. Our review of CDC’s PPE training included analyzing pre-deployment briefing documents; CDC’s electronic respirator training; CDC’s *Health, Safety, and Environmental Policy* (including CDC’s *Respiratory Protection Program*); and other written responses from CDC. We also analyzed survey and interview data and CDC NIOSH safety officer reports that provided firsthand accounts of PPE training.

Data sources and analysis

From March 2020 through February 2022, we collected and analyzed data for this review. We collected and analyzed data from interviews with officials, staff, and U.S. Public Health Service Commissioned Corps officers within ACF, ASPR, and CDC. We obtained documentation from interviewees to support their interview statements and supplement our analysis.

We also collected and analyzed data from an electronic survey of nearly 700 base and surge HHS personnel. These HHS personnel conducted screening at John F. Kennedy International Airport’s Quarantine Station (hereinafter referred to as “JFK”) and/or quarantine-related activities at quarantine sites located at March Air Reserve Base and

Travis Air Force Base.⁴⁸ We also submitted questions to and collected and analyzed written responses and HHS documents, such as guidance, emails, and memoranda, from ACF, ASPR, and CDC.

We also conducted an extensive review of other relevant documentation. In total, we reviewed more than 3,400 documents encompassing memoranda, letters, emails, spreadsheets, meeting agendas, meeting summaries, and other records created or received by HHS personnel associated with this review.

We also reviewed existing planning, guidance, and other knowledge associated with travel-related containment measures and infection prevention and controls that existed prior to our review period. These documents include OSHA standards and guidance, as well as pandemic planning and guidance for infection prevention and control and travel-related containment measures.

To understand the protections for personnel that CDC recommended during our time period for personnel at quarantine stations and sites, we analyzed interviews, survey responses, written responses, and documentation. We also used these data to identify potential vulnerabilities with these protections.

Limitations

Wherever possible, we compared interview and survey statements to facts we could determine from our review of publicly available information, HHS correspondence, memos, and numerous other documents. However, we did not independently verify all information provided by officials, staff, and U.S. Public Health Service Commissioned Corps Officers within ACF, ASPR, and CDC.

Because of limited COVID-19 testing and contact tracing during our review period, it is not possible to determine the extent to which these risks translated to actual COVID-19 infection among HHS personnel or the public.⁴⁹ Diagnostic testing for SARS-CoV-2 was not available in the United States until January 20, 2020, and testing was initially available only for those determined to be a patient under investigation for COVID-19 by a local health department.⁵⁰ Additionally, the first emergency use authorization for a commercial SARS-CoV-2 test was not issued until April 1, 2020.⁵¹ Finally, a COVID-19 vaccine was not available to anyone throughout the entirety of our review period.

Our review of CDC's PPE training does not capture all prior or subsequent training or other education or knowledge that HHS personnel may have had regarding PPE (e.g., such as that provided through ASPR's annual PPE training or that provided through just-in-time training onsite at quarantine stations or sites).⁵² Largely, this other PPE training was either not formally documented and/or not included in the scope of this study (e.g., it was provided to personnel for purposes other than COVID-19 quarantine station and site deployments). As a result, our identification of any gaps in CDC's training does not necessarily speak to all of the means by which HHS

personnel could have been trained on this topic prior to this response effort or after it started.

Standards

We conducted this study in accordance with the *Quality Standards for Inspection and Evaluation* issued by the Council of the Inspectors General on Integrity and Efficiency.

This review is not an OSHA investigation. We have notified OSHA of our related findings for further review and appropriate action.

FINDINGS

CDC initially recommended limited PPE for some HHS personnel who interacted with potentially infected passengers at quarantine stations and sites, and its PPE trainings appear to have not met OSHA standards

During our review period, CDC recommended PPE to protect HHS personnel from COVID-19 exposure while interacting with potentially infected passengers at quarantine stations and sites.^{53, 54} Although only CDC personnel are required to comply with CDC recommendations, some HHS personnel, including staff from CDC, ASPR, and ACF, wore limited PPE, consistent with CDC's recommendations.

Further, although CDC's PPE training met many OSHA standards, the training appears to have violated two OSHA standards because it did not contain all information necessary to ensure that personnel were properly using the PPE. It is possible that personnel may have received annual training prior to their deployment and/or just-in-time training that could have compensated for these training gaps; however, we did not include this other training in our review.

Limited PPE and insufficient training posed vulnerabilities that could have increased HHS personnel's risk of exposure to COVID-19 at quarantine stations and sites. As a result, the public's risk of exposure could have been increased when these personnel interacted with their communities during and after their deployments.

CDC's PPE recommendations resulted in some personnel initially wearing limited PPE, but improvements occurred over time

As a result of CDC's PPE recommendations, personnel conducting secondary screening at quarantine stations initially wore only limited PPE. The PPE was limited relative to that worn by personnel conducting other job duties (e.g., tertiary screening) at quarantine stations, as well as to that of base personnel at quarantine stations who interacted with potentially infected passengers prior to the COVID-19 pandemic.^{55, 56} CDC updated its PPE recommendations for secondary screening at quarantine stations at various points through the end of March 2020, but the updated recommendations were still less protective relative to the PPE worn for other job duties.

Although CDC's PPE recommendations varied according to quarantine station job duties, all of these job duties required personnel to come within 6 feet of passengers who were potentially infected with COVID-19. In some respects, personnel conducting secondary screening may have had greater risk of exposure to COVID-19

compared to other positions because secondary screening occurred for *all* passengers entering from areas identified during primary screening regardless of symptoms—tens of thousands of passengers during our review period. In contrast, personnel conducted tertiary screening only for passengers exhibiting symptoms or exposures of concern (i.e., fewer than 300 passengers in total during our review period). If passengers were flagged for tertiary screening, they were then advised to wear a mask, if they could tolerate it.

PPE recommendations for personnel conducting tertiary screening at quarantine stations did not change from January through March 2020 and included respirators and gowns, in addition to gloves and eye protection. CDC’s initially limited PPE recommendations for personnel conducting secondary screening and subsequent PPE enhancements through March 2020 were:

“I probably would have allowed personnel to wear a respirator if they were fit to it. . . But I don’t understand the rationale behind not being allowed to wear it.”

**– CDC
Quarantine
Station Leader,
May 2020**

- *In mid-January 2020*, when screening first began, CDC required only gloves during secondary screening and did not allow personnel to voluntarily wear additional PPE.
- *By late January 2020*, CDC continued to require gloves during secondary screening. CDC allowed, but did not require, surgical masks and eye protection (i.e., goggles or face shields). CDC did not allow respirators.
- *By mid-February 2020*, CDC continued to require gloves during secondary screening and allow, but not require, eye protection. In addition, CDC required surgical masks. CDC continued not to allow respirators.
- *By mid-March 2020*, CDC required gloves, surgical masks, and eye protection during secondary screening. In addition, CDC allowed, but did not require, personnel to voluntarily wear a respirator instead of a surgical mask if personnel had prior respirator training.⁵⁷

A similar evolution in PPE recommendations occurred at quarantine sites. Between January 28 and February 2, 2020, no formal PPE recommendations existed for personnel interacting with potentially infected passengers at quarantine sites. On February 2, 2020, CDC issued PPE recommendations for personnel providing public health and other services, but these recommendations still varied by job duties. As a result, some HHS personnel who had close contact with (i.e., came within 6 feet of) potentially infected passengers wore less protective PPE relative to personnel performing other job duties during our review period.⁵⁸

CDC’s guidance at quarantine sites recommended that workers collecting clinical specimens or providing medical care wear a gown, gloves, eye protection, and respirators while performing those job duties. However, other HHS personnel who were also performing job duties requiring close interactions with potentially infectious passengers (e.g., case managers providing social support services) wore less protective PPE. Specifically, these personnel were recommended to wear a surgical mask and face shield or goggles when interacting with individuals at a distance of less

than 6 feet and to add gloves if these personnel were taking temperature readings or touching potentially contaminated surfaces. CDC did not recommend additional PPE enhancements (like those made for secondary screening at quarantine stations) for these personnel during our review period. The reason may be because PPE enhancements for secondary screening at quarantine stations occurred in mid-March 2020, when response efforts at quarantine sites began to slow down.

Further, personnel at quarantine sites were required to wear PPE only when within 6 feet of a potentially infected passenger. Several personnel reported to us that passengers sometimes unexpectedly approached and came within 6 feet of them when they were not wearing PPE.

These initial, limited PPE recommendations for some job duties caused health and safety concerns among HHS personnel at several quarantine stations and sites, including those in leadership positions and safety officers. For example, HHS personnel (including leadership) specifically reported feeling uncomfortable and unsafe with the initial, limited PPE required for some job duties.⁵⁹ A CDC safety officer also reported concerns with personnel not being required to wear more protective PPE, such as respirators.

"I was disappointed the N95 respirator was not utilized by all personnel, as the science behind the surgical mask is not supportive of protecting the employee. NIOSH-certified respiratory protection and OSHA regulations under 29 CFR § 1910.134 require the use of NIOSH-certified respiratory protection when employees are exposed to respiratory hazards. Personnel conducting secondary screening should have been in respirators and not directed to utilize surgical masks."

– CDC NIOSH Safety Officer, April 2020 Survey Response
(referring to scientific evidence and OSHA regulations that existed prior to COVID-19)

Also troubling to personnel, CDC did not allow its own personnel to voluntarily wear PPE beyond what was outlined in its recommendations, even when personnel requested to do so.⁶⁰ For example, at one quarantine station, some personnel serving as secondary screeners requested to wear respirators but were initially not permitted to do so, even if they had been fitted for one. Leadership at this quarantine station raised concerns about this to CDC's headquarters leaders, who confirmed that personnel conducting secondary screening could not wear more PPE than CDC recommendations allowed.

Some personnel reported not implementing CDC's PPE recommendations based on their clinical expertise, which may have mitigated some risks despite deviating from CDC's guidance. For example, some ASPR personnel, including a quarantine site safety officer, reported overruling CDC recommendations and allowing personnel to wear more protective PPE based on their prior infectious disease and PPE

experiences.⁶¹ These activities were not without consequence, though. Another ASPR employee reported being “berated by a CDC official for exceeding the minimum PPE.”

CDC reported recommending PPE based on the amount of contact time that personnel were expected to have with symptomatic passengers (e.g., 2 to 3 minutes for some job duties versus 15 minutes for others). Reducing the amount of time with a hazard—an example of an administrative control—is generally protective to the employee. However, OSHA and NIOSH guidance recommends that PPE selection be based on the potential presence of an infectious disease and the infectious disease’s mode(s) of transmission.⁶²

Further, prior pandemic planning and infection prevention and control guidance advise a course of action if an employer has limited information about the hazard. OSHA standards state that if an employer cannot identify or reasonably estimate whether an employee will be exposed to a respiratory hazard, the employer should consider the atmosphere “Immediately Dangerous to Life or Health” and have employees use respirators.⁶³ Further, the *2005 HHS Pandemic Influenza Plan* states that respiratory protection may be considered for disease strains that transmit between individuals easily, or during initial stages of an outbreak of an emerging or novel strain. It also states that early in a pandemic, it may not be clear that an individual is infected, so protections consistent with all possible modes of transmission, including a newly emerging infectious disease, should be implemented, including the use of respiratory protection.⁶⁴

There is evidence that indicates that CDC’s PPE recommendations may have been influenced by a desire to minimize public alarm. One quarantine station’s leader reported understanding that the initially limited PPE recommendations, and the directive to not wear more PPE than required, were established by CDC headquarters leaders to avoid alarming the public. A quarantine site safety officer also reported being told that the limited PPE was due to a “visual aesthetic that needed to be paid attention to.” Additional survey respondents reported being told that they were not allowed to wear additional PPE to avoid alarming the public. For example, one survey respondent reported that personnel were asked to remove their PPE while escorting symptomatic passengers through baggage claim to tertiary screening because other passengers in the airport would see them. Personnel were allowed to put their PPE back on upon arriving at the tertiary screening room, which was not viewable by the public.

When we asked CDC headquarters leaders whether other factors (e.g., the desire to minimize public alarm; the risks associated with personnel wearing too much PPE; and/or shortages of PPE supplies) contributed to CDC’s PPE recommendations, CDC responded that the safety of their personnel and the public were the most important considerations shaping the PPE recommendations. CDC did not contend that allowing personnel to wear respirators would create a hazard, provided employees had been fitted and trained to wear them properly.⁶⁵ Additionally, CDC headquarters leaders also reported that the decision to initially recommend limited PPE for

secondary screeners was not driven by a lack of PPE availability, despite the widespread reporting that PPE was in short supply during the early months of the pandemic. For example, a tertiary screener reported deploying with 30 respirators that went unused while interacting with potentially infected passengers for the first 2 to 3 weeks of the respondent's deployment.

CDC's PPE trainings appear to have not met two OSHA standards

OSHA standards require personnel: (1) to be trained on, among other things, the proper use, maintenance, and disposal of PPE and (2) to demonstrate their ability to use the PPE prior to performing job duties.⁶⁶ CDC has two separate PPE trainings—one for respirators (e.g., N95 respirators) and one for nonrespirator PPE (e.g., gloves, gowns, and face shields).

We analyzed documentation associated with the PPE trainings that personnel reported receiving from CDC prior to conducting job duties during the COVID-19 response. We also analyzed firsthand accounts of PPE training. Although CDC's PPE trainings appeared to meet most OSHA standards, its trainings appear to have not met at least two OSHA standards, as described below.

- Apparent violation of 29 CFR § 1910.132(f)(1): None of the documentation that we reviewed indicated that CDC's training for nonrespirator PPE included information regarding the limitations of such PPE or procedures for safely maintaining and disposing of the PPE. Information regarding the limitations of nonrespirator PPE could have included, but would not be limited to, noting that PPE is considered less effective compared to other controls and acknowledging that the PPE's effectiveness depends on proper use by personnel.⁶⁷ An additional limitation of nonrespirator PPE is that surgical masks, for example, do not provide strong protection against airborne contaminants compared to a respirator, a limitation that was applicable during the COVID-19 pandemic.⁶⁸ In contrast, CDC's respirator training contains detailed information regarding the limitations of a respirator, when to dispose of a respirator, and how to take proper care of a respirator.
- Apparent violation of 29 CFR § 1910.132(f)(2) and/or 29 CFR § 1910.134(k)(1): None of the documentation that we reviewed indicated that CDC's PPE trainings ensured that employees demonstrate their ability to use the PPE properly before performing job duties. The respirator training did not ensure that employees could demonstrate how to properly inspect, don, and doff the respirator.^{69, 70} Similarly, the nonrespirator PPE training did not require personnel, for example, to demonstrate that they could properly don and doff gloves.

Further, some firsthand accounts also indicate that personnel were not required to demonstrate how to use the PPE prior to using it during our review period. For example, a CDC NIOSH Safety Officer who was onsite at a

quarantine station wrote in a February 2020 safety report that “no one had to undergo a competency test to demonstrate that they could properly don and doff the respirator or other required PPE.” Another CDC employee serving as a secondary and tertiary screener at a quarantine station reported: “Once I was deployed for COVID-19, the only respiratory protection training I received was fit testing. I did not complete any hands-on training or formally learn how to put on or take off the equipment.”

Between January and March 2020, CDC was also initially limited in the extent to which it recommended other protections for personnel who interacted with potentially infected passengers, but these other protections also improved over time

The extent to which CDC recommended other protections (e.g., physical distancing, symptom screening, and self-quarantining) for HHS personnel interacting with potentially infected passengers at quarantine stations and sites was also initially limited with respect to potential risks of COVID-19 exposure. Specifically, CDC initially recommended limited administrative controls, such as self-quarantining, for all HHS personnel who had interacted with potentially infected passengers. CDC also did not recommend engineering controls, such as the installation of clear plastic sneeze guards, while personnel were having close contact with potentially infected passengers.⁷¹

These gaps in infection prevention and control protections were particularly problematic given the fact that COVID-19 symptoms and transmission were not well understood, testing was generally unavailable, we identified vulnerabilities with the PPE that some personnel wore, and most HHS personnel were at greater risk of potential exposure by the nature of their job duties, compared to the general public during our review period. During this response, though, CDC waited until more information became available about the virus before recommending more protective actions regarding HHS personnel health and safety.

CDC headquarters leaders reported that they did not recommend these controls immediately because they did not consider them to be necessary until there was sustained, human-to-human transmission of COVID-19 in the United States. CDC further reported that it did not believe that transmission by individuals with minimal to no symptoms would be a significant driver of COVID-19 spread because “until the COVID-19 pandemic, [this type of transmission had] never been a significant driver of a pandemic disease,” and CDC did not shape its recommendations based on a “worst-case scenario speculation.” In subsequent interviews, CDC later specified that it does not have the authority to implement engineering controls in non-CDC spaces (i.e., screening areas in quarantine stations and military installations used as quarantine sites).⁷²

However, CDC's approach to recommending protections did not fully leverage the Federal guidance and planning and/or knowledge about other infectious diseases that existed at the time. Since at least 2005, CDC and other Federal agencies have acknowledged the importance of implementing engineering and administrative controls, such as self-quarantining and physical distancing, when a virus with pandemic potential emerges.⁷³ For example, the *2006 Homeland Security Council's National Strategy for Pandemic Influenza Implementation Plan* states that implementing protective measures, such as physical distancing procedures, is an immediate action upon identification of the first human case in North America.⁷⁴ CDC has reported that this timing is important, as these controls help slow transmission in communities, particularly when a vaccine is not yet available.⁷⁵ Further, other scientific and medical literature describes respiratory viral infections that are asymptomatic and/or presymptomatic. For example, a 2018 study found that the rate of asymptomatic individuals for the coronavirus that causes Middle East Respiratory Syndrome (MERS) is about 9.8 percent across different studies.⁷⁶ Another 2005 study reviewed asymptomatic cases of severe acute respiratory syndrome (SARS) and found an overall rate of 13 percent, which this study reported was lower than many other viral respiratory diseases.⁷⁷

In response to these limited protections, some HHS personnel reported taking steps to reduce the risk to their and the public's health and safety. For example, a quarantine station leader reported wearing extra layers of clothing to work and setting up a "decontamination zone" at home to help protect family members. HHS personnel took these measures on their own, as they reported not being required or advised to do so as part of a coordinated approach to protect frontline HHS personnel involved in screening and quarantining.

CDC's recommendations for physical distancing were initially limited but improved over time

Physical distancing—a type of administrative control—is an important infection prevention and control protection for both HHS personnel and their communities. HHS personnel were at risk of potential COVID-19 exposure because most, if not all, job duties at quarantine stations and sites required personnel to come within 6 feet of potentially infected passengers. These job duties include CDC personnel conducting screening at both quarantine stations and sites, ACF personnel conducting case management at quarantine sites, and ASPR personnel providing wraparound services (e.g., medical care, logistics, and operations) at quarantine sites.

Although CDC advised personnel verbally and in writing to physically distance from potentially infected passengers when not performing job duties (an example of an administrative control), personnel could not always control their work environment and maintain physical distancing. Physical distancing was particularly difficult to maintain at quarantine sites, where HHS personnel reported that potentially infected passengers would approach personnel unexpectedly to ask questions.⁷⁸ Specifically,

during approximately 40 percent (222 of 547) of deployments where HHS personnel reported interacting with potentially infected passengers, HHS personnel also reported that they did not consistently practice physical distancing while deployed.

Further, CDC also did not initially issue guidance recommending that all HHS personnel practice physical distancing while they were off duty in the community during or following their deployment, which posed a risk to the public. For example, some personnel reported using public transit to commute to and from their job site. Although quarantine site personnel typically resided onsite, which would minimize the public's risk of exposure, some deployed personnel reported leaving the quarantine sites to run errands, go to dinner, and visit tourist destinations, which put the public at increased risk. Some personnel were also temporarily housed offsite, within the surrounding community. Although CDC cannot enforce or ensure HHS personnel's adherence to physical distancing guidance while out in the community, issuing the guidance is an important first step.

CDC later improved its recommendations for HHS personnel to practice physical distancing. On March 1, CDC advised all personnel who were returning from Travis Air Force Base and Seattle-Tacoma International Airport's quarantine station to practice physical distancing for the 14 days following their deployments.⁷⁹ Several days later, on March 9, CDC recommended that all personnel (regardless of location) practice physical distancing for 14 days after they returned home and to carry a mask while traveling in the event that they feel unwell during their trip home. Although these improvements provided greater protection to the public, neither of them recommended improvements to allow for physical distancing while personnel were conducting job duties. The guidance also did not recommend practicing physical distancing while out in the community during deployments.

Later, in mid-March 2020, CDC further strengthened physical distancing guidance for its personnel, which corresponds to the launch of the U.S. Government's "Slow the Spread" campaign.⁸⁰ Around this time, CDC allowed secondary screeners at quarantine stations to—rather than having to come into close contact with passengers to take their temperatures—remain at a distance greater than 6 feet from passengers, and to inspect them visually from that distance. This is an example of an administrative control (protecting personnel by changing the way people work).

CDC's recommendations for symptom screening and self-quarantining were initially limited but improved over time

Although CDC encouraged personnel to limit their interactions with potentially infected passengers to mitigate their risk of exposure (an example of an administrative control), CDC did not initially issue formal guidance recommending other administrative controls, such as symptom screening and self-quarantining. This increased the risk of HHS personnel contributing to infection spread among the public with whom they interacted during and after their deployments. CDC eventually

issued symptom screening and self-quarantining guidance for HHS personnel at various points during our review period.

CDC issued formal guidance recommending that HHS personnel screen themselves and report their symptoms beginning February 10, 2020, more than 3 weeks after screening and quarantine efforts began. Initially (i.e., beginning January 17, 2020), CDC reported verbally conveying its recommendation that personnel conduct daily symptom screening and report if they had a fever. However, HHS personnel at quarantine stations and sites reported that this did not occur consistently. Specifically, of the 50 deployments that HHS personnel we surveyed participated in with deployment dates that ended prior to February 10, 2020, HHS personnel reported not screening for symptoms (and not being required to do so) for 42 percent (21) of these deployments. In an interview, one individual at a quarantine site reported not being told about this requirement between January 27 and February 7. However, this individual proactively conducted daily symptom self-monitoring because the individual inferred that this was the proper screening protocol based on how CDC was screening potentially infected passengers.

On February 10, 2020, nearly a month after screening began at quarantine stations and nearly 2 weeks after quarantine sites received their first passengers, CDC established a text-based illness monitoring (TIM) system and recommended enrollment of all HHS personnel in the system both during and for 14 days after their deployments.⁸¹ The TIM system automatically prompted personnel at both stations and sites to report daily whether they exhibited COVID-19 symptoms. Individuals who reported symptoms or who did not respond to the prompts were contacted by CDC for followup. Most HHS personnel at quarantine stations and sites reported that, after February 10, they were required to screen and report symptoms for COVID-19 during and after their deployments. However, a quarantine station safety assessment dated February 24, 2020, recommended further CDC guidance regarding this requirement because personnel appeared confused about whether daily symptom screening should be conducted.

CDC recommended that all HHS personnel self-quarantine in early March, nearly 7 weeks after screening and quarantine efforts began. CDC did not initially issue guidance recommending self-quarantining for all HHS personnel who interacted with potentially infected passengers at quarantine stations and sites. Personnel who were symptomatic were told to avoid contact with others, which included not getting on an airplane. However, personnel who did not show symptoms did not have information on the circumstances under which they should self-quarantine, what self-quarantining should involve, or where it should occur. For example, a CDC leader who was onsite at March Air Reserve Base reported not quarantining following a 3-week deployment during which this individual reported not always wearing PPE during interactions with potentially infected passengers.⁸² Although they had not been advised to do so, several other personnel reported voluntarily self-quarantining at home. However, these personnel were not initially reimbursed for self-quarantining at locations other

than their homes if they voluntarily chose to do so. The delay in issuing guidance that recommended self-quarantining meant that any HHS personnel who had COVID-19 but did not display symptoms could potentially have contributed to the spread of the virus within the community, including taking it back to their usual duty stations.

In early March, nearly 2 months after screening and quarantine efforts began, CDC issued guidance recommending that certain CDC personnel who were not exhibiting symptoms self-quarantine, but this guidance was not comprehensive. The guidance recommended that CDC personnel not showing symptoms remain at home or in a comparable setting for 14 days following the end of their deployments.^{83, 84} This guidance also advised that personnel could receive approval on a case-by-case basis to self-quarantine in a hotel for the 14 days after their deployment. However, this guidance still did not address (or recommend) self-quarantining for CDC personnel who lived in the local vicinity of their deployment locations.

The lack of application of this guidance to local CDC personnel posed risks for community spread, both during the deployment for local personnel and for the 14-day period after their deployments. In one instance, one individual who lived locally reported to CDC that an at-risk family member lived in the employee's home. Halfway through that employee's deployment, in March 2020, after already potentially exposing the employee's at-risk family member, the employee requested reimbursement for a hotel to protect this family member. CDC agreed to reimburse the employee for the lodging. In another instance, one locally based individual inquired as to what local surge personnel should do following their deployment, as the guidance issued in early March did not apply to those personnel. This individual did not receive an answer and self-quarantined for 1 week before returning to work in person with populations at high risk for severe COVID-19 infection in March 2020.

By the end of our review period, CDC's self-quarantining guidance still did not include sufficient information to maximize its effectiveness. Specifically, this guidance did not advise personnel about how to safely self-quarantine away from family members or others within their homes and advised reimbursement for alternative lodging only if personnel had close contacts or family members who were at higher risk for severe disease. However, at least one member of surge personnel (who returned home on March 25, 2020) reported not having clear self-quarantining guidance if a spouse or family member was at higher risk for severe disease. This individual reported spending personal funds to stay in a hotel for 14 days after returning from deployment. The guidance did not address, for example, wearing masks or increasing ventilation within homes, using separate bathrooms, making and serving food, or washing dishes and laundry. Including guidance for how to maximize the effectiveness of self-quarantining is critical to ensuring that personnel protect their families and household members, as well as their communities.

Other HHS personnel reported that their agencies instituted CDC's self-quarantining guidance for its personnel. Prior to adopting CDC's self-quarantining guidance, these agencies reported that personnel were able to immediately return to work. For

example, one survey respondent—an ASPR employee who had worked at a quarantine site—reported returning home and going to work on March 6, as this respondent reported not being required to quarantine. However, this respondent reported being notified on March 9 that the risk category had been elevated for quarantine site deployments and a 14-day self-quarantine was now required.

CDC did not have a comprehensive plan for recommending travel-related containment measures that weighed the risks—such as the risks to HHS personnel conducting screening—relative to the public health benefits

Existing planning documents issued by HHS (including CDC), DHS, the Homeland Security Council, and the National Security Council address planning assumptions and activities associated with travel-related containment measures (e.g., screening, isolation, quarantine and/or conditional release). However, these documents failed to inform decisionmakers on how to comprehensively assess the risks and benefits of these activities, including the risks to HHS personnel health and safety. Specifically, CDC has not documented a comprehensive plan for decisionmakers regarding when and how to implement travel-related containment measures, based on the risks and public health benefits, as the outbreak unfolds.

Without a comprehensive plan to inform the decision making for adjusting or stopping travel-related containment measures, CDC and other Federal agencies involved in decision making may not take all relevant risks and benefits into account once those measures are implemented. Such risks could include, for example: health and safety risks to HHS personnel; the risk that HHS personnel could become infected and spread the disease to their families and communities; and the risk of misdirected resources during a critical time in the response.

CDC continued to expand passenger screening after community spread had been identified in the United States

Beginning January 2020, CDC took actions to fulfill its statutory responsibilities to prevent the spread of COVID-19 within the United States through travel-related containment measures.⁸⁵ Enhanced passenger screening began at quarantine stations on January 17, 2020. Three days later, the first documented case of COVID-19 in the United States was identified. By the end of February, U.S. community spread was identified, and infection rates continued to increase through the end of our review period.⁸⁶ During this same period, passenger screening expanded, which required additional personnel.⁸⁷ (See Exhibit 3 for a detailed timeline of both the identification and spread of COVID-19 within the United States and the implementation and expansion of passenger screening for international passengers at quarantine stations.)

Exhibit 3: Screening expanded as COVID-19 spread within the United States.

January 2020

- **January 17:** Screening implemented at three quarantine stations for passengers with recent travel to the Hubei Province.
- **January 21:** Screening expanded to include two additional quarantine stations.
- **January 30:** WHO declared COVID-19 a Public Health Emergency of International Concern.
- **January 31:** Federal quarantine orders issued to all passengers with recent travel to the Hubei Province.

February 2020

- **February 3:** Screening expanded to six additional quarantine stations and to include all passengers with recent travel to mainland China, which resulted in an increase of approximately 4,000 passengers per week.
- **February 26:** First identified U.S. COVID-19 case resulting from community spread.
- **February 28:** First identified U.S. COVID-19 death.

March 2020

- **March 2:** Screening expanded to include passengers with recent travel to Iran at the same 11 quarantine stations.
- **March 11:** WHO declared COVID-19 a pandemic.
- **March 14-17:** Screening expanded to 4 additional quarantine stations and to include all passengers with recent travel to Europe, the United Kingdom, and Ireland, which resulted in an increase of approximately 30,000 passengers per week.
- **March 25:** The United States reported at least 65,000 cases and nearly 1,000 deaths.

May 2020

- **May 27:** Screening expanded to include all passengers with recent travel to Brazil.

September 2020

- **September 14:** All screening for passengers arriving at quarantine stations terminated.

Source: OIG analysis of documentation, 2021 and CDC, *Risk Assessment and Management of COVID-19 Among Travelers Arriving at Designated U.S. Airports, January 17–September 13, 2020*, November 13, 2020.

CDC reported relying on evolving knowledge of COVID-19 transmission to inform its decision to halt screening at quarantine stations, citing a lack of effectiveness

On September 9, 2020, via a public media release, CDC reported that it would be suspending its screening efforts at quarantine stations beginning September 14, 2020, due to their “limited effectiveness.”⁸⁸ CDC pointed to the evolving knowledge about the asymptomatic and/or presymptomatic transmission of COVID-19 in guiding that decision. CDC stated:

We now have a better understanding of COVID-19 transmission that indicates symptom-based screening has limited effectiveness because people with COVID-19 may have no symptoms or fever at the time of screening, or only mild symptoms. Transmission of the virus may occur from passengers who have no symptoms or who have not yet developed symptoms of infection. Therefore, CDC is shifting its strategy and prioritizing other public health measures to reduce the risk of travel-related disease transmission.⁸⁹

Evidence of potential asymptomatic spread had been mounting since the end of January 2020. In a press briefing on January 31, 2020, CDC leadership reported that there was “emerging evidence this week of the growth and spread of this outbreak, the increase in deaths, and the incoming data about person-to-person transmission, as well as concerning reports about asymptomatic spread.”⁹⁰ Further, by February 19, 2020, it was reported that at least 48 percent of the confirmed COVID-19 cases on the Diamond Princess cruise ship were among individuals not exhibiting symptoms. At several other points between January and mid-March 2020, multiple other stakeholders reported possible transmission occurring among individuals not exhibiting symptoms or exhibiting mild symptoms.^{91, 92, 93}

In its decision to halt passenger screening at quarantine stations, CDC offers a rationale that focuses on the effectiveness of screening to identify COVID-19 cases but does not offer insight into any additional risk-benefit calculation it may have conducted. Similarly, in November 2020, CDC published a retroactive review of COVID-19 screening at quarantine stations from January through September 2020.⁹⁴ Although this review did incorporate one consideration of risk (i.e., resources), it does not mention factoring in other potential risks related to this response activity.

Notably, CDC’s November 2020 review concluded that COVID-19 passenger screening was “ineffective” and “resource intensive” with a “low yield of laboratory-diagnosed COVID-19 cases.”⁹⁵ The study found that screening detected few COVID-19 cases (one identified case per 85,000 travelers screened) and required considerable resources. It also noted that these findings were consistent with a mathematical model examining the effectiveness of airport screening for COVID-19, published in February 2020. The authors of that analysis concluded that “entry screening is an intuitive barrier for the prevention of infected people entering a country or region.

However, evidence on its effectiveness remains limited.” This includes limited evidence for its effectiveness during the 2003 SARS epidemic and 2009 influenza A (H1N1) pandemic.⁹⁶

Further, CDC reported to OIG that by March 31, 2020, screening at quarantine stations had resulted in identifying 282 (of tens of thousands) passengers showing symptoms of possible COVID-19 infection but none were required to quarantine. All passengers were cleared to either continue traveling or go home if that airport’s quarantine station was their destination.⁹⁷ Further, by March 23, 2020, all quarantine orders were rescinded at quarantine sites. However, CDC did not shift its strategy at quarantine stations until 6 months later, in September 2020.

With a more comprehensive plan for determining the risks and benefits of travel-related containment measures, CDC, and other Federal agencies involved in the decision making, might have reached a determination earlier than September 2020 to alter its approach to travel-related transmission “to more effective mitigation efforts that focus on the individual passenger, including: pre-departure, in-flight, and post-arrival health education for passengers,” among other things.⁹⁸ We cannot determine the impact that halting screening earlier could have had on COVID-19 transmission within the United States, but this change would certainly have had one impact—it would have reduced the risk of exposure for HHS personnel and the risk they posed to community spread within the United States.

CONCLUSION AND RECOMMENDATIONS

CDC, along with other HHS and Federal agencies, as well as the White House, confronted the task of protecting the United States from a novel infectious disease outbreak during our review period (January through March 2020). CDC, in particular, faced the challenge of recommending protections for HHS personnel who interacted with potentially infected passengers while conducting passenger screening and other duties associated with quarantining certain evacuees. This challenge was complicated by the fact that during this time COVID-19 symptoms and transmission were not well understood, COVID-19 testing was generally unavailable, and a COVID-19 vaccine did not exist.

We found that, as a result of CDC's initial recommendations, some personnel wore only limited PPE when interacting with potentially infected passengers. Additionally, although CDC's PPE trainings appeared to meet most OSHA standards, these trainings did not appear to meet two OSHA standards. CDC was also initially limited in the extent to which it recommended other protections, such as physical distancing, symptom monitoring, and self-quarantining. These limited protections may have increased the risk of COVID-19 exposure among HHS personnel. As data and knowledge about COVID-19 increased over time, CDC strengthened its recommendations for PPE and other protections, although some vulnerabilities remained.

CDC stated that it made scientifically informed decisions about recommended protections in keeping with the evolving understanding of COVID-19 transmission risks, such as whether COVID-19 could spread asymptotically. CDC asserted to OIG that its "actions in January through March 2020 were shaped by the best available scientific information known at the time—not worst-case-scenario speculation." In its technical comments to OIG, CDC also noted that "until the COVID-19 pandemic, asymptomatic and presymptomatic transmission have never been a significant driver in the spread of a pandemic disease." However, prior planning and existing literature in this area acknowledge the need to make decisions without complete data and suggest that planning assumptions take asymptomatic and presymptomatic infection into account.

We do not know—and cannot know—whether any HHS personnel or, in turn, the public, became infected or inadvertently spread COVID-19 as a result of these limited protections. However, we do know that HHS personnel were at heightened risk because of the limited protections in place.

More broadly, we found that CDC did not have a comprehensive plan for recommending travel-related containment measures that weighed the risks—such as the risks to HHS personnel conducting screening—relative to the public health

benefits. A comprehensive plan to inform the decision making for these measures could have helped CDC ensure that it was taking all the relevant risks and benefits into account.

Our findings offer insights that can help HHS better prepare for future emergency responses. These complement the insights that GAO provided about vulnerabilities regarding HHS response activities at quarantine sites. Our recommendations are intended to help CDC learn from the COVID-19 response in its efforts to prepare for the future.

Therefore, to prepare for future emergencies, we recommend that CDC:

Update its guidance recommending protections for personnel interacting with potentially infected passengers, particularly when data are limited

CDC should update its guidance outlining its recommended protections for personnel interacting with potentially infected passengers during an infectious disease response. When limited data about disease transmission are available, OIG recommends, in keeping with existing planning documents, that CDC's guidance accounts for asymptomatic and/or presymptomatic infection.

CDC's updated guidance should outline the protections it will recommend to protect all personnel against a novel infectious disease where data are limited. For example, CDC should outline recommendations for personnel that protect against all possible modes of transmission until the disease can be better understood and controlled. As a part of this, CDC could consider developing messaging materials to communicate to personnel and the public why it is recommending that these personnel use more protective measures in the absence of information and how those recommendations will be updated as more information becomes available.

In this guidance, CDC should include, at a minimum, recommended engineering controls, administrative controls, and PPE usage (consulting the Hierarchy of Controls and other relevant NIOSH and OSHA guidance) for personnel interacting with potentially infected passengers. As part of this, CDC should seek the necessary authority to establish engineering controls in non-CDC spaces to protect its personnel. If CDC cannot obtain that authority, it should document how it will otherwise mitigate risks. Finally, CDC should also outline the circumstances under which personnel may voluntarily wear more protective PPE than what is recommended, including how personnel can request to voluntarily wear more PPE and obtain additional training, if needed.

Finally, CDC should work with other agencies that may have personnel interacting with potentially infected passengers to clarify how the other agencies plan to

implement and enforce CDC recommendations to ensure consistent protection for all HHS staff interacting with potentially infected passengers.

Ensure that its PPE trainings meet OSHA standards

CDC should ensure that its respirator and nonrespirator PPE trainings meet OSHA standards. This includes ensuring that the content of the training addresses the limitations of nonrespirator PPE, as well as procedures for the proper care, maintenance, useful life, and disposal of nonrespirator PPE.

CDC should also document its procedures for ensuring that personnel demonstrate an ability to use PPE properly before performing job duties. CDC should do this for both its respirator and nonrespirator PPE training. Demonstrating an ability to use all PPE properly could include a physical demonstration test that is documented and certified by the agency providing the PPE training. It should not entail only an online quiz and/or written demonstration.

Develop a comprehensive plan for recommending travel-related containment measures that weighs the risks relative to the public health benefits

CDC should develop a comprehensive plan for assessing the risks and the public health benefits of travel-related containment measures. Comprehensive planning should include prompts for decisionmakers to take all relevant risks and benefits into account, including but not limited to, the risk to HHS personnel health and safety while conducting activities that require interactions with potentially infected passengers (i.e., when an elimination control is not possible).

This plan should build upon existing guidance, such as the 2009 HHS and DHS *Entry Procedures for Travelers at Airports of Entry in the Event of a Severe Influenza Pandemic Concept of Operations and Standard Operating Procedures*, as well as the 2016 *National Security Council Playbook for Early Response to High Consequence, Emerging Infectious Disease Threats and Biological Incidents*, lessons learned, and after-action reports.

Within this plan, CDC should:

- Document the benefits and risks of travel-related containment measures at any location, including quarantine stations and sites. CDC should also document other factors that may affect these benefits and risks. Examples include available information on the disease (e.g., symptoms and modes of transmission), rapid diagnostic testing capabilities, and medical countermeasure availability.

- Document how benefits, risks, and other factors evolve as an infectious disease outbreak worsens and improves (e.g., degree of community spread).
- Document how it will implement travel-related containment measures when it lacks complete information on the infectious disease, as well as how it will assess and adjust its implementation as more information is gathered.
- Document a process for using the plan during an infectious disease outbreak, including how CDC will document what decisions are being made, why those decisions are being made, and how those decisions will be shared with coordinating partners (e.g., DHS, ASPR, and/or an emergency response task force). To the extent that any decisions deviate from the planning, this process should include steps to document and update the plan afterwards.

Comprehensive planning will help CDC and other decisionmakers respond to future public health crises. With planning in place, decisionmakers can focus on responding to the unique challenges of the crisis. Additionally, this planning would serve as a helpful tool to guide other public health and non-public health officials who may also be involved in decision making. As such, CDC should consider sharing this plan with other partners, such as ACF, ASPR, and DHS.

AGENCY COMMENTS AND OIG RESPONSE

CDC concurred with all three of OIG's recommendations.

In response to our first recommendation, CDC stated that it will continue to regularly review its guidance pertaining to infection control, personal protection, engineering, and administrative controls to minimize occupational risks to its employees. CDC also stated that it will also regularly review and update guidance as new information is available relating to potential exposures that employees may face in quarantine stations and on deployments. Aside from offering guidance, CDC stated that it cannot direct the efforts of other agencies even when CDC is the subject matter authority.

In response to our second recommendation, CDC stated that its respirator PPE training is OSHA compliant, but it will continue to conduct regular reviews to ensure that the trainings meet all OSHA standards and ensure that appropriate documentation of employee proficiency is maintained. OIG requests that in closing this recommendation, CDC provide documentation that it has updated the nonrespirator training to include information on the limitations of nonrespirator PPE, as well as procedures for the proper care, maintenance, useful life, and disposal of nonrespirator PPE. Further, CDC should also document its procedures for ensuring that personnel demonstrate an ability to use the PPE properly before performing job duties.

In response to our third recommendation, CDC stated that it will develop a plan that clearly defines public health considerations, triggers, and risks to assist U.S. Government decisionmakers when determining the use of travel-related containment measures in response to an infectious disease outbreak. CDC further stated that it will incorporate lessons learned from previous outbreaks, including the COVID-19 response, to increase the likelihood that any enacted travel-related containment measures efficiently accomplish the stated public health objective while minimizing the risks posed to U.S. Government employees and the American public. CDC will also rely on the best available scientific evidence and the most relevant technology and tools to develop appropriate standard operating procedures. CDC also reiterated that it is not the only decision-making or implementing entity required when travel-related containment measures, such as passenger screening or repatriation efforts, are enacted.

For the full text of CDC's comments, see Appendix D. We also ensured that all of CDC's technical comments were addressed, where we had evidence to support making technical changes.

APPENDICES

Appendix A: COVID-19 Key Events: Quarantine Stations and Sites, December 2019–November 2020

December 2019

- **December 31:** The Wuhan Municipal Health Commission reports 27 cases—7 of them severe—of an unknown pneumonia-related disease.

January 2020

- **January 11:** The first COVID-19 death is reported in China.
- **January 13:** The first case outside of China is reported in Thailand.
- **January 17:** Screening implemented at three quarantine stations (JFK, LAX, and SFO) for passengers with recent travel to the Hubei Province. PPE for secondary screeners at quarantine stations is gloves only.
- **January 20:** First U.S. COVID-19 case identified by CDC's test.
- **January 21:** Screening expanded to two additional quarantine stations (ORD and ATL), bringing the total to five (JFK, LAX, SFO, ORD, ATL).
- **Late January:** PPE for secondary screeners at quarantine stations is increased to allow, but not require, eye protection (i.e., goggles or face shield) and a surgical mask, in addition to the required gloves.
- **January 29:** March Air Reserve Base receives the first group of passengers requiring quarantine at a quarantine site.
- **January 30:** WHO declared COVID-19 a Public Health Emergency of International Concern, with 9,600 infections and 213 deaths worldwide.
- **January 31:** Federal quarantine orders are issued to all passengers with recent travel to the Hubei Province.

February 2020

- **February 3:** Screening expanded to six additional quarantine stations (EWR, IAD, DFW, DTW, SEA, HNL) and all passengers with recent travel to mainland China.
- **February 5-17:** Quarantine sites receive more passengers to quarantine.
- **February 10:** CDC issues formal guidance recommending that HHS personnel screen themselves for symptoms.
- **Mid-February:** PPE for secondary screeners at quarantine stations is increased to require surgical masks.
- **February 11:** WHO reports 42,708 cases and 1,017 deaths in China.
- **February 26:** First identified U.S. COVID-19 case resulting from community spread.
- **February 28:** First identified U.S. COVID-19 death.

March 2020

- **March 2:** Screening is expanded at the same 11 quarantine stations to include passengers with recent travel to Iran.
- **March 5:** Europe reported 4,250 cases and 113 deaths.
- **Mid-March:** Secondary screeners continue to be required to wear gloves, surgical masks, and eye protection. However, PPE for secondary screeners at quarantine stations is updated to allow, but not require, a respirator instead of a surgical mask if personnel had prior respirator training.
- **March 9:** CDC issues guidance recommending that HHS personnel self-quarantine.
- **March 10-12:** Passengers continue to arrive at quarantine sites.
- **March 11:** WHO declared COVID-19 a pandemic.
- **March 14:** Screening is expanded to 15 quarantine stations (MIA, BOS, IAH, FLL) and to include all passengers with recent travel to the Schengen Region (i.e., Europe).
- **March 16:** The Federal Government launched the “Slow the Spread” campaign.
- **March 17:** Screening is expanded to include all passengers with recent travel to the United Kingdom and Ireland.
- **March 17:** New U.S. cases nearly quadrupled in 1 day, from 755 to 2,797.
- **March 23:** All quarantine orders for passengers at quarantine sites are rescinded. No additional quarantine sites are opened.
- **March 25:** The United States reported at least 65,000 cases, and nearly 1,000 deaths.

May 2020

- **May 27:** Screening expanded to include all passengers with recent travel to Brazil.

September 2020

- **September 14:** All screening for passengers arriving at quarantine stations terminated.

November 2020

- **November 13:** CDC issued its [Morbidity and Mortality Weekly Report](#) on screening, where it identifies these efforts as ineffective and resource intensive.

Appendix B: Prior Documents on Preparedness and Response Planning for Travel-Related Containment Measures

CDC response plans for communicable diseases

CDC requires each quarantine station to establish and exercise a communicable disease response plan. These plans outline quarantine station activities for routine illness responses and describe the potential need for surge personnel in the event of a pandemic. However, neither these plans nor previous responses or exercises that the quarantine stations conducted include planning for the screening and quarantining of passengers to the scale used during COVID-19 (i.e., hundreds of thousands of passengers entering the United States from international destinations with potential exposure to a novel infectious disease). Further, although communicable disease response plans note the potential need for facility-based quarantine (e.g., hotels and motels near the airport), CDC has not issued specific plans for standing up long-term Federal quarantine sites.

Homeland Security Council and HHS pandemic influenza planning documents from 2005 and 2006

In 2005 and 2006, the Homeland Security Council and HHS issued several planning and guidance documents for a pandemic influenza outbreak, including a national strategy and implementation plan and an HHS-specific plan.⁹⁹ These documents outline high-level travel-related containment measure procedures for Federal, State, and local governments, including when to broadly use these procedures, as well as other planning considerations for these measures.

The *2006 Homeland Security Council Pandemic Influenza Implementation Plan* outlines travel-related containment measures as an immediate action to be considered when there is confirmed, sustained, human-to-human transmission of a novel influenza virus overseas (i.e., U.S. Government Stage 2).^{100, 101} During Stage 3 (i.e., widespread human outbreaks in multiple locations overseas), this plan states that HHS, in coordination with the Department of State and DHS, should re-examine limitation on international travel from affected regions and maintain layered screening measures for host country pre-departure, en route, and arrival of U.S.-bound travelers.¹⁰² During Stage 5 (i.e., spread throughout the United States), this plan states that a policy decision should determine when travel restrictions previously enacted can be lifted.¹⁰³

Like the *2006 Homeland Security Council Pandemic Influenza Implementation Plan*, the 2005 HHS Pandemic Influenza Plan outlines HHS actions for travel-related containment measures during the World Health Organization (WHO) pandemic phases.¹⁰⁴ This plan states that travel-related containment measures should be used beginning in WHO Phases 4 and 5, when there is limited human-to-human

transmission, and through Phase 6 (i.e., the pandemic phase), when there are no cases in the United States.¹⁰⁵ Upon identification of cases in the United States during WHO Phase 6, this plan states that HHS such reassess containment strategies, such as travel advisories and restrictions.¹⁰⁶

These plans offer additional considerations for pandemic travel-related containment measures applicable to Federal, State, and local efforts. For example, the *2005 HHS Pandemic Influenza Plan* states in recommendations to State and local partners that when disease transmission is occurring in communities throughout the United States, individual quarantine is much less likely to have an impact and likely would not be feasible to implement.¹⁰⁷ Because the usefulness and feasibility of procedures focused on containment measures for individuals will be limited once the pandemic has started to spread, this plan advises that other measures that reduce disease transmission by increasing physical distancing should be considered instead.¹⁰⁸

Further, though influenza is different than COVID-19, these documents note that asymptomatic and presymptomatic transmission is a consideration. Specifically, the *2005 HHS Pandemic Influenza Plan* states that some infected passengers will be shedding the virus asymptotically, or have mild symptoms, and it will, therefore, not be possible to identify and isolate all arriving infected or ill passengers and quarantine their fellow passengers.¹⁰⁹ However, this plan states that—depending on the situation—travel-related containment measures might slow the spread early in a pandemic, allowing additional time for implementation of other response measures, such as vaccines.¹¹⁰ Further, the *2006 Homeland Security Council Pandemic Influenza Implementation Plan* states that “screening is challenged by a lack of sensitivity (e.g., asymptomatic infected individuals may not be detected) and specificity (e.g., many individuals with symptoms will not actually be infected).”¹¹¹

CDC and DHS planning documents from 2009 on pandemic influenza passenger screening

In 2009, CDC and DHS, in coordination with the Department of Transportation, developed a Concept of Operations (CONOPS) and Standard Operating Procedures (SOPs) for the *Entry Procedures for Travelers at Air Ports of Entry in the Event of a Severe Influenza Pandemic*.¹¹² (Hereinafter, these documents are referred to as the *2009 CONOPS* and *2009 SOPs*). These documents detail how and when CDC and DHS’s CBP should implement passenger screening to slow the introduction of a pandemic-causing influenza virus into the United States.

Quarantine stations are to plan for the onsite, mandatory quarantine of exposed passengers for up to 72 hours. However, in the event that passengers require a longer period of quarantine or that the number of exposed passengers overwhelms the quarantine stations, those passengers required to quarantine will need to be transported to a suitable, pre-designated quarantine facility within a reasonable distance from the airport (i.e., a facility equivalent to a quarantine site).¹¹³ Further,

should a significant number of cases have developed in the United States, the isolation and/or quarantine may occur at an individual's home.¹¹⁴ The *2009 CONOPS* and *2009 SOPs* outline only that long-term quarantine will be executed under Emergency Support Function 6: Housing and Mass Care and that public health personnel will coordinate with State health departments in the event of mandatory home quarantine.¹¹⁵

The *2009 CONOPS* also acknowledge several considerations related to passenger screening, including the timing of the efforts, as well as the possibility of asymptomatic or presymptomatic transmission.¹¹⁶ Specifically, the *2009 CONOPS* aligns with the *2006 Homeland Security Council Pandemic Influenza Implementation Plan* and states that screening procedures would be implemented prior to a pandemic virus reaching the United States (USG Stages 2 or 3) and continue until such time that the virus is established within the United States (USG Stage 5).¹¹⁷

National Security Council planning documents from 2016 for early response decision making in a pandemic

The 2016 *National Security Council Playbook for Early Response to High-Consequence, Emerging Infectious Disease Threats and Biological Incidents* (hereinafter referred to as the "*NSC Playbook*") provides a decision-making tool that identifies key decisions to be made, including the implementation of travel-related containment measures during a pandemic.¹¹⁸ This decision making applies to novel infectious diseases and those with high rates of morbidity, mortality, and/or transmissibility, including novel coronaviruses.¹¹⁹

The *NSC Playbook* outlines several considerations that apply to the early stages of a pandemic response, including travel-related containment measures. It directs decisionmakers to consider that the primary mode of transmission for a newly emerging pathogen may not be readily available. Therefore, initial estimates are likely to be based on limited and incomplete information and will be continually reassessed based on new information. As a result, decisionmakers will be required to choose courses of action with incomplete information.¹²⁰

The *NSC Playbook* further outlines key considerations related to travel-related containment measures in its international playbook when there is not yet a confirmed case within U.S. territorial borders. These considerations include, if the outbreak covers a large area, there are often not enough control points to continue effective border measures. Further, if the outbreak is in a region that has a large volume of travel, then screening all passengers from that region becomes operationally difficult, if not impossible.¹²¹

The *NSC Playbook* also includes these containment measures as a consideration during various phases of a domestic pandemic response (i.e., when there is an

emerging disease threat within U.S. territorial borders). (See Exhibit 4 on the next page.)

Exhibit 4: NSC’s decision-making guidance for travel-related containment measures during a domestic pandemic response.

Phase	Phase Definition, Triggers and Key Epidemiologic Indicators	Screening and Quarantining Key Decisions and Questions
1A: Normal Operations	No specific threat.	N/A
1B: Elevated Threat	Identification of a human case of a pathogen of pandemic potential.	N/A
1C: Credible Threat	Confirmation of multiple human cases of a pathogen of pandemic potential anywhere and/or a determination of a significant potential for a public health emergency.	(1) Is the pathogen susceptible to detection by screening travelers? (2) Consider implementation of travel restrictions and border controls.
2A: Initial Response: Activation, Situational Assessment, and Movement	<ul style="list-style-type: none"> • Demonstrative of efficient and sustained human-to-human transmission of a novel virus anywhere; and/or • Declaration of Public Health Emergency 	N/A
2B: Employment of Resources and Stabilization	<ul style="list-style-type: none"> • Increasing number of cases in the United States or health care system burden that exceeds State resources; and/or • State or local request for assistance 	Determine whether to implement screening and monitoring measures, or other travel measures within the United States or globally.
2C: Intermediate Operations	<ul style="list-style-type: none"> • Cases continue to climb with long-term service disruption and critical infrastructure impacts; and/or • Presidential Stafford Act declaration; and/or • State or local request for assistance 	<ul style="list-style-type: none"> • Can the disease be effectively screened in travelers as a means to stop transmission? • Are travel or screening and monitoring requirements, either globally or at U.S. borders, appropriate and would those measures stop the spread of disease? • Determine whether to implement screening and monitoring measures, or other travel measures within the United States or press for measures globally.*
3A: Sustained Operations	Long-term recovery operations with or without continued incidence of new cases.	N/A

Source: National Security Council, *National Security Council Playbook for Early Response to High Consequence, Emerging Infectious Disease Threats and Biological Incidents*, 2016, pp. 7; 31–40.

* NSC also states that the issue of border screening is very complex and requires extensive legal consultations and a public health determination on its value as a tool to slow the spread of diseases vis à vis harm to travel, trade, and ability to mount a response within affected region.

Appendix C: More Information on OSHA and CDC Hierarchy of Controls for Infectious Disease Exposure (existing prior to and relevant during OIG's review period)

In several documents, OSHA and CDC outline Hierarchy of Controls broadly, as well as for an infectious disease exposure specifically.¹²² Taken together, these documents outline ways to protect personnel by controlling exposure to infectious diseases, an example of which would include COVID-19.

OSHA and CDC advise that the controls used to protect personnel depend on the type of hazard and route of exposure. Further, the primary sources of infectious disease transmission in occupational settings are contact, droplet, and airborne exposures:

- Contact transmission involves exposure through both direct (e.g., skin-to-skin) and indirect (e.g., doorknobs) contact.
- Droplet transmission involves exposure through direct contact through your eyes, nose, or mouth with infectious secretions emitted when an infected individual coughs, sneezes, or talks.
- Airborne transmission involves exposure through very small infectious particles that remain suspended in air for extended periods of time and are then inhaled by non-infected individuals.

Engineering and administrative controls

Engineering controls isolate personnel from the hazard by removing hazardous conditions or by placing a barrier between personnel and the hazard. These types of controls reduce exposure to an infectious disease without relying on personnel changing their behavior and have lower operating costs than other types of controls in the longer term.¹²³ OSHA and CDC advise that engineering controls to protect personnel from being exposed to infectious diseases (e.g., influenzas and novel coronaviruses, such as COVID-19) could consist of:

- improving ventilation where personnel are working (e.g., installing high-efficiency air filters or using specialized negative pressure ventilation);^{124, 125}
- installing physical barriers, such as clear plastic sneeze guards; and^{126, 127}
- installing a drive-through window.¹²⁸

Administrative controls are typically changes in work policies or procedures to reduce or minimize exposure to a hazard. They are typically used with other elimination, substitution, and/or engineering controls that more directly prevent or control exposure to the hazard.¹²⁹ OSHA and CDC provide examples of administrative controls to protect personnel from being exposed to infectious diseases (e.g., influenzas and novel coronaviruses, such as COVID-19), including:

- symptom monitoring,¹³⁰
- encouraging sick personnel to stay home (i.e., self-quarantining),¹³¹
- promoting physical distancing by implementing telework or virtual communications,¹³²
- establishing alternating days or extra shifts to reduce the total number of personnel working onsite,¹³³
- discontinuing nonessential travel to locations with high transmission rates, and¹³⁴
- providing personnel with education and training on risk factors and protective behaviors.^{135, 136}

PPE

PPE refers to a variety of barriers and respirators used alone or in combination to prevent mucous membranes, airways, skin, and clothing from contact with infectious agents.¹³⁷ PPE is generally used with other elimination, substitution, engineering, and/or administrative controls.¹³⁸ PPE protects the mucous membranes (i.e., the mouth, nose, and eyes) and other skin surfaces with compromised integrity (e.g., by acne, dermatitis) that are susceptible portals of entry for infectious agents. The selection of PPE is based on the nature of the patient interaction and/or the routes of transmission (e.g., droplet vs. airborne).

Types of PPE that may be utilized when the hazard is an infectious disease, include:

- **Protective body clothing** (e.g., gowns, aprons) protects exposed body parts. **Gowns** protect arms and exposed body areas and prevent contamination of clothing with potentially infectious material. They are usually the first PPE to be donned. Gowns are worn only if contact with blood or body fluid is anticipated.¹³⁹ **Disposable aprons** cover the torso to the mid-calf and may be worn over a gown. An apron provides additional protection from body fluids.¹⁴⁰ **Coveralls** (e.g., Tyvek suits) are designed to cover the entire body, including back and lower legs and sometimes feet and head as well.¹⁴¹
- **Masks** protect personnel from contact with infectious material and protect patients from exposure to infectious agents carried in a worker's mouth or

nose.¹⁴² Masks are put on after gowns are properly donned. Masks may be used with goggles to protect the mouth, nose, and eyes. Alternatively, a face shield may be used instead of a mask and goggles, although it does not prevent airborne transmission of infectious agents.

- **Respiratory protection** requires the use of a respirator with N95-level or higher filtration to prevent inhalation of infectious particles. Respiratory protection is regulated by OSHA, which requires medical clearance to wear a respirator, user-seal checking (i.e., fit testing), and education on respirator use.¹⁴³
- **Eye protection** (i.e., goggles, face shields, safety glasses) are chosen for specific work situations based on the circumstances of exposure, other PPE used, and personal vision needs. Goggles and/or face shields are put on after masks and respiratory protection are properly donned. Although effective as eye protection, goggles do not provide splash or spray protection to other parts of the face. Face shields may be used as an alternative to goggles. Face shields can provide protection to other facial areas in addition to the eyes.¹⁴⁴
- **Gloves** prevent contamination of hands when anticipating or having direct contact with infectious material or infected patients, or when touching contaminated or potentially contaminated equipment or surfaces. When worn in combination with other PPE, gloves are the last PPE to be donned. Either latex or nitrile gloves are preferable for clinical procedures that require manual dexterity or will involve more than brief contact.¹⁴⁵

Appendix D: Agency Comments

Following this page are the official comments from CDC.



Centers for Disease Control
and Prevention (CDC)
Atlanta GA 30329-4027

TO: Gregory E. Demske
Acting Principal Deputy Inspector General

FROM: Centers for Disease Control and Prevention (CDC)

DATE: September 2, 2022

SUBJECT: Office of the Inspector General (OIG) Draft Report

Attached is the CDC response to the OIG. This response details CDC's planned actions regarding recommendations contained in the OIG report, "During the Initial COVID-19 Response, HHS Personnel Who Interacted With Potentially Infected Passengers Had Limited Protections," OEI-04-20-00360.

The CDC appreciates the opportunity to review and comment on this report prior to final release.

Sincerely,

A handwritten signature in blue ink, appearing to read "Rochelle P. Walensky".

Rochelle P. Walensky, MD, MPH
Director, CDC, and
Administrator, ATSDR

Enclosure

Enclosure

CDC appreciates the OIG's ongoing work on the draft report, "During the Initial COVID-19 Response, HHS Personnel Who Interacted With Potentially Infected Passengers Had Limited Protections." The safety and security of CDC staff is a top CDC priority. In accordance with 29 CFR 1960, federal agencies must develop occupational health and safety programs to protect their employees from occupational hazards, including the development and enforcement of organizational occupational health and safety programs. CDC established a safety and health program consistent with guidance from the Occupational Safety and Health Administration (OSHA), which supports safe workplace conditions through training, services, and other resources. This important review of the initial three months of the coronavirus disease 2019 (COVID-19) pandemic also directly supports CDC's efforts to meet those standards.

According to OIG's report, concerns about CDC and other Department of Health and Human Services (HHS) staff and their risk of COVID-19 exposure at quarantine stations and sites were expressed during this initial response period from January 1-March 31, 2020. The circumstances and available information were constantly evolving. CDC's actions in January through March 2020 were shaped by the best available scientific information known at the time.

To protect its employees, CDC conducted risk assessments prior to the COVID-19 response. These assessments were based on routine tasks performed under normal operating conditions. Guidance to CDC employees at quarantine stations was updated as new information became available.

Separately, there were personnel from several HHS operating divisions deployed to quarantine sites as the response progressed. There was not a clear delineation as to which agency was the lead for issuing orders relating to infection control and the use of personal protective equipment (PPE) at those quarantine sites for HHS personnel. CDC does not have legal authority to direct personnel of any HHS component agency other than CDC to comply with CDC recommendations regarding PPE use or other suggested COVID-19 mitigation measures. Therefore, recommendations and direction for mitigation measures, such as PPE recommendations, were directed to CDC employees at quarantine stations.

Since then, CDC has taken steps to expand recommendations to support the safety of its staff at quarantine stations. This includes specific all hazard risk assessments for CDC deployers, symptom monitoring, and establishing and continuing to update policies and guidance on additional safety precautions.

CDC will continue to review the available science and update guidance and recommendations consistent with that information. CDC also supports some of the findings and recommendations, although some discrepancies can still be found in the OIG report, as documented within the technical comments.

OIG Recommendation (1)

OIG recommends CDC update its guidance recommending protections for personnel who interact with potentially infected passengers.

CDC Response: CDC concurs with OIG’s recommendation to update its guidance recommending protections for personnel who interact with potentially infected passengers. As acknowledged by OIG, CDC improved its recommendations for PPE and other protections as data and knowledge about COVID-19 grew over time. However, CDC cannot direct the efforts of other agencies even when CDC is the subject matter authority. CDC will continue to review its guidance pertaining to infection control, personal protection, engineering, and administrative controls to minimize occupational risks to its employees. Guidance will be regularly reviewed, and updates will occur as new information is available relating to the potential exposures that employees may face in quarantine stations and on deployments.

OIG Recommendation (2)

OIG recommends CDC ensure that its PPE trainings meet OSHA standards.

CDC Response: CDC concurs with OIG’s recommendation to ensure that its PPE trainings meet OSHA standards. CDC’s Respirator Protection Program (RPP) is OSHA compliant, just as it was during the period examined by OIG. CDC’s RPP meets OSHA Standard 29 CFR 1910.132 and 29 CFR 1910.134, and the program is audited every two years. OIG’s review of CDC’s respiratory protection training consisted of electronic documents only. CDC provided the electronic respirator training, which is followed by a pass or fail fit test. It is during the fit test that employees demonstrate their ability to utilize the equipment correctly and receive additional training and guidance, if needed. This required step in the training is in person only and OIG did not visit the CDC RPP fit test room to observe this process. For this training and other PPE trainings, CDC will continue to conduct regular reviews to ensure they meet all OSHA standards and that appropriate documentation of employee proficiency is maintained.

OIG Recommendation (3)

OIG recommends CDC develop a comprehensive plan for recommending travel-related containment measures that weighs the risks relative to the public health benefits.

CDC Response: CDC concurs with OIG’s recommendation to develop a plan that clearly defines public health considerations, triggers, and risks to assist U.S. government decision makers when determining whether travel-related containment measures should be implemented, adjusted, or discontinued in response to an infectious disease outbreak. In its plan, CDC will incorporate the lessons learned from previous outbreak responses, including the COVID-19 response, to increase the likelihood that, in the event travel-related containment measures are necessary in the future, the enacted measures efficiently accomplish the stated public health objective while minimizing the risks posed to U.S. government employees and the American public. CDC also will rely on the best available scientific evidence and will utilize the most relevant technology and tools, to the extent possible, to develop appropriate standard operating procedures.

Enclosure

CDC is not the only decision-making or implementing entity required when travel-related containment measures, such as entry screening, are enacted. CDC already coordinates with U.S. government partners such as the Department of Homeland Security, the Department of Transportation, and the Department of State through the National Security Council (NSC) and through other interagency collaboration processes when planning, implementing, or expanding travel-related containment measures. CDC requests a revision of this recommendation to acknowledge that the determination regarding if, when, and how to implement travel-related containment measures (i.e., entry screening) at U.S. ports of entry may be an NSC decision informed by interagency partner input using current knowledge and public health best practices. Furthermore, CDC is not the initiating U.S. government entity for repatriation efforts, nor is CDC the entity that determines if the U.S. Repatriation Plan is activated to support a repatriation operation. CDC is one of several identified components of the U.S. Repatriation Plan and participates in coordination groups that support the implementation when activated to include the Administration for Children and Families and the Administration for Strategic Preparedness and Response.

ACKNOWLEDGMENTS AND CONTACT

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This report was prepared under the direction of Dwayne Grant, Regional Inspector General for Evaluation and Inspections in the Atlanta Regional Office, Jaime Stewart, Assistant Regional Inspector General and Evan Godfrey, Deputy Regional Inspector General.

Contact

To obtain additional information concerning this report, contact the Office of Public Affairs at Public.Affairs@oig.hhs.gov. OIG reports and other information can be found on the OIG website at oig.hhs.gov.

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ENDNOTES

¹ ASPR was formerly known as the Office of the Assistant Secretary for Preparedness and Response.

² The Office of Special Counsel has publicly released two full reports at <https://osc.gov/Documents/Public%20Files/FY22/DI-20-000557/DI-20-000557%20-%20Agency%20Report%20w%20CDC%20Response.pdf> (including an OIG analysis) (including an OIG analysis) and [https://osc.gov/Documents/Public%20Files/FY21/DI-20-0537/OSC%20File%20No.%20DI-20-000537%20-%20Supplemental%20Report%20with%20Addendum%20\(1\) Redacted.pdf](https://osc.gov/Documents/Public%20Files/FY21/DI-20-0537/OSC%20File%20No.%20DI-20-000537%20-%20Supplemental%20Report%20with%20Addendum%20(1) Redacted.pdf).

³ ABC 7 Chicago, "Coronavirus screening forces hundreds of travelers to wait hours at Chicago's O'Hare International Airport," March 15, 2020. Accessed at <https://abc7chicago.com/ohare-airport-chicago-coronavirus-screening/6014169/> on April 27, 2021.

⁴ CNN, "'They didn't protect us': Some coronavirus responders stunned by lack of protective measures," March 11, 2020. Accessed at <https://www.cnn.com/2020/03/11/health/coronavirus-first-responders-invs/index.html> on April 27, 2021.

⁵ CNBC, "White House task force kept airport COVID screeners in place despite known risk of infection," December 22, 2020. Accessed <https://www.cnbc.com/2020/12/21/white-house-covid-task-force-kept-airport-health-screeners-in-place-despite-risk.html> on April 27, 2021.

⁶ *The New York Times*, "Hundreds Exposed to Coronavirus on Cruise Ship Fly Home," March 20, 2020. Accessed at <https://www.nytimes.com/2020/03/20/us/coronavirus-cruise-ship-costa-luminosa.html> on April 27, 2021.

⁷ 42 CFR § 71.1. Quarantine separates and restricts the movement of people who were exposed to a contagious disease to see if they become sick. Isolation separates sick people with a contagious disease from people who are not sick. CDC, *About Quarantine and Isolation*, last reviewed on January 27, 2020. Accessed at <https://www.cdc.gov/quarantine/quarantineisolation.html> on November 17, 2021.

⁸ Under Section 361 of the Public Health Service Act (42 USC § 264), the Secretary of Health and Human Services is authorized to take measures to prevent the entry and spread of communicable diseases from foreign countries into the United States and between States. The authority for carrying out these functions daily has been delegated to CDC. Communicable diseases are defined by Executive Order of the President. CDC, *Legal Authorities for Isolation and Quarantine*, September 17, 2021. Accessed at <https://www.cdc.gov/quarantine/aboutlawsregulationsquarantineisolation.html> on July 1, 2022.

⁹ 42 USC § 264(b). Regulations addressing the prevention, introduction, and spread of communicable diseases from foreign countries into the United States are found at 42 CFR Part 71.

¹⁰ CDC's Division of Global Migration and Quarantine personnel staff quarantine stations on a daily, routine basis. Base personnel at quarantine stations include an Officer in Charge, among other full-time medical and public health officers, and sometimes a full-time Quarantine Medical Officer. Quarantine Medical Officers are on call 24/7 to support quarantine station illness response activities. In addition, a Regional Officer in Charge oversees quarantine station operations within each region. In addition to passenger screening, base personnel also screen cargo; inspect animals and animal products; and monitor the health of and collect any medical information of new immigrants, refugees, asylees, and parolees. CDC, *Quarantine Stations*, last updated on September 29, 2017. Accessed at <https://www.cdc.gov/quarantine/quarantine-stations-us.html> on September 22, 2021.

¹¹ CDC is generally alerted to potentially infectious passengers in one of three ways: (1) a Customs and Border Protection (CBP) agent, within the Department of Homeland Security (DHS), reports visually identifying ill passengers going through customs; (2) an airline pilot reports onboard illnesses prior to arrival in the United States; or (3) other airport partners who interact with arriving international passengers (e.g., Fire and Rescue, Emergency Medical Services, and airport operation staff) report visually identifying ill passengers. CBP agents, airline pilots, and other airport partners report these ill passengers according to CDC illness-reporting criteria.

¹² The Homeland Security Council was formerly within the Executive Office of the President and was created by Executive Order 13228. In 2009, the Homeland Security Council was merged with the National Security Council and named the National Security Council in 2014. Fed. Reg., Vol. 66, No. 196, October 10, 2001. Accessed at <https://www.govinfo.gov/content/pkg/FR-2001-10-10/pdf/01-25677.pdf> on August 31, 2021. Executive Order, "Changing the Name of the National Security Staff to the National Security Council Staff," February 10, 2014. Accessed at <https://obamawhitehouse.archives.gov/the-press-office/2014/02/10/executive-order-changing-name-national-security-staff-national-security> on August 31, 2021. Administration of Barack H. Obama, "Statement on the White House Organization for Homeland Security and Counterterrorism," May 26, 2009. Accessed at <https://www.govinfo.gov/content/pkg/DCPD-200900403/pdf/DCPD-200900403.pdf> on September 29, 2021.

¹³ Planning, including documented guidance, policies, and procedures, collectively helps inform decisionmakers on the factors to consider when taking action, such as implementing travel-related containment measures during a novel infectious disease outbreak. The relevant planning and guidance includes: CDC quarantine station communicable disease response planning (including exercises); HHS and DHS's 2009 *Entry Procedures for Travelers at Air Ports of Entry in the Event of a Severe Influenza Pandemic: Concept of Operations and Standard Operating Procedures*; HHS's 2005 *Pandemic Influenza Plan*; the Homeland Security Council's 2005 and 2006 *National Strategy for Pandemic Influenza and National Strategy for Pandemic Influenza: Implementation Plan*; and the National Security Council's 2016 *Playbook for Early Response to High Consequence, Emerging Infectious Disease Threats, and Biological Incidents*. We identified these documents as relevant because they pertain either broadly to a pandemic infectious disease or specifically to passenger screening (and other travel-related containment measures) during an infectious disease outbreak, or both.

¹⁴ Homeland Security Council, *National Strategy for Pandemic Influenza: Implementation Plan*, May 2006, p. 13. Accessed at <https://www.cdc.gov/flu/pandemic-resources/pdf/pandemic-influenza-implementation.pdf> on September 27, 2021.

¹⁵ Conditionally releasing passengers is the temporary supervision by a public health official (or designee) of an individual or group, who may have been exposed to a quarantinable communicable disease, to determine the risk of disease spread and includes public health supervision through in-person visits, telephone, or through electronic or internet-based monitoring.

¹⁶ Generally, CDC issues one to two isolation orders per year (primarily for infectious tuberculosis). Prior to COVID-19, CDC issued the most recent Federal quarantine order in 1963 for a suspected case of smallpox.

¹⁷ For ill passengers, it should be assumed that all are potentially infected with an organism that could be transmitted in the health care setting and there are precautions to take based on the infectious disease's mode(s) of transmission. CDC, *Quarantine Station Communicable Disease Response Plans*, 2019.

¹⁸ The plan specifically states that some infected passengers will shed the virus asymptotically, or have mild symptoms, and it will, therefore, not be possible to identify and isolate all arriving infected or ill passengers and quarantine their fellow passengers. However, depending on the situation, screening and quarantining might slow the spread early in a pandemic, allowing additional time for implementation of other response measures, such as vaccines. HHS, *Pandemic Influenza Plan*, November 2005, p. S9-3.

¹⁹ Asymptomatic transmission occurs when an infected individual without symptoms transmits the virus to another individual. Presymptomatic transmission occurs when an infected individual who is not yet displaying symptoms transmits the virus to another individual.

²⁰ HHS, *Pandemic Influenza Plan*, November 2005, pp. S9-8 and S9-9.

²¹ *Ibid.*, pp. S8-9 through S8-11, S8-15.

²² National Security Council, *National Security Council Playbook for Early Response to High Consequence, Emerging Infectious Disease Threats and Biological Incidents*, 2016, p. 18.

²³ The law authorizes the Surgeon General, with the approval of the Secretary of HHS, to issue and enforce regulations necessary to prevent the introduction, transmission, or spread of communicable diseases from foreign countries into the United States and between States. (42 U.S.C. § 264). Regulations addressing the prevention, introduction, and spread of communicable diseases from foreign countries into the United States are found at 42 CFR § 71.

²⁴ The 15 quarantine stations were John F. Kennedy International Airport (JFK) in New York City, Los Angeles International Airport (LAX), San Francisco International Airport (SFO), O'Hare International Airport (ORD) in Chicago, Hartsfield-Jackson Atlanta International Airport (ATL), Newark Liberty International Airport (EWR), Washington Dulles International Airport (IAD), Dallas-Fort Worth International Airport (DFW), Detroit Metropolitan Airport (DTW), Seattle-Tacoma International Airport (SEA), Daniel K. Inouye International Airport (HNL) in Honolulu, Miami International Airport (MIA), Boston Logan International Airport (BOS), George Bush Intercontinental Airport (IAH) in Houston, and Fort Lauderdale-Hollywood International Airport (FLL).

²⁵ The Office of the Assistant Secretary for Health oversees the U.S. Public Health Service Commissioned Corps, which is a U.S. uniformed services branch committed to the service of health. Officers advance U.S. public health by serving in agencies, such as CDC, across the Government, as physicians, nurses, dentists, and other professionals. In this review, when we refer to HHS agency personnel by agency (e.g., CDC personnel), this includes any Commissioned Corps officers who are either temporarily or permanently stationed at and/or deployed by that agency.

²⁶ The six quarantine sites were March Air Reserve Base, Travis Air Force Base, Lackland Air Force Base, Marine Corps Air Station Miramar, Dobbins Air Force Base, and the University of Nebraska Medical Center's quarantine center. The University of Nebraska Medical Center's quarantine center is the Nation's only Federal quarantine unit and is funded by ASPR. University of Nebraska Medical Center, National Training, Simulation, and Quarantine Center (TSQC). Accessed at <https://www.unmc.edu/newsroom/2020/01/29/training-simulation-quarantine-center-now-open-at-med-center/> on July 7, 2022.

²⁷ CDC, *Hierarchy of Controls*, last updated on January 13, 2015. Accessed at <https://www.cdc.gov/niosh/topics/hierarchy/default.html> on August 31, 2021, and OSHA, *COVID-19 Hazard Recognition*. Accessed at <https://www.osha.gov/coronavirus/hazards> on August 31, 2021.

²⁸ CDC categorizes these controls as Standard Precautions that are used for all patient care and Transmission-Based Precautions, which are used in addition to Standard Precautions, for patients with known or suspected infectious diseases. CDC, *Infection Control Basics*, last updated on January 5, 2016. Accessed at <https://www.cdc.gov/infectioncontrol/basics/index.html> on July 8, 2022.

²⁹ Relevant to this review, these include OSHA standards under 1910 Subpart I regarding *Occupational Safety and Health Standards for Personal Protective Equipment*. Further, OSHA has promulgated implementing regulations at 29 CFR Parts 1960 regarding Basic Program Elements for Federal Occupational Safety and Health Programs and Related Matters (with additional relevant provisions in Part 1910). 29 CFR § 1960.16 requires each Federal Agency head to "comply with all occupational safety and health standards issued under section 6 of the [Occupational Safety and Health] Act, or with alternate standards issued pursuant to this subpart."

³⁰ 29 CFR § 1910.132(d)(1) states that "the employer shall assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment." OSHA also makes recommendations for how employers can identify and assess workplace hazards. OSHA, *Recommended Practices for Safety and Health Programs*, October 2016, p. 15.

³¹ CDC, *National Institute for Occupational Safety and Health*, 2013. Accessed at <https://www.cdc.gov/niosh/docs/2013-140/pdfs/2013-140.pdf?id=10.26616/NIOSHPUB2013140> on July 8, 2022.

³² OSHA, *OSHA Standards Development*. Accessed at <https://www.osha.gov/laws-regs/standards-development> on August 31, 2021.

³³ CDC/NIOSH, *Hierarchy of Controls*, January 13, 2015.

³⁴ 29 CFR § 1910.132(d)(1)(i) states that "the employer shall select, and have each affected employee use, the types of PPE that will protect the affected employee from the hazards identified in the hazard assessment."

³⁵ CDC/NIOSH, *Hierarchy of Controls*, January 13, 2015, and OSHA, *Hierarchy of Controls*, 2018. Accessed at [fy10_sh-20839-10_hierarchy_of_controls.pdf \(osha.gov\)](https://www.osha.gov/publications/fy10_sh-20839-10_hierarchy_of_controls.pdf) on August 31, 2021.

³⁶ OSHA, *Hazard Prevention and Control*, 2018. Accessed at https://www.osha.gov/sites/default/files/2018-12/fy11_sh-22318-11_Mod_3_HazardPrevention.pdf on May 10, 2021.

³⁷ 29 CFR § 1910.132(f)(1) outlines the training requirements for all PPE, including when and what PPE is necessary; how to properly don, doff, adjust, and wear PPE; the limitations of the PPE; and the proper care, maintenance, useful life, and disposal of the PPE.

³⁸ N95 respirators are protective devices designed to achieve a very close facial fit and very efficient filtration of airborne particles. The “N95” designation means that when subjected to careful testing, the respirator blocks at least 95 percent of very small (0.3 micron) test particles.

³⁹ 29 CFR § 1910.132(f)(2) requires employees to demonstrate an understanding of the training and the ability to use PPE properly before being allowed to perform work requiring the use of PPE. For respirators specifically, 29 CFR § 1910.134(k)(1) requires employers to ensure that employees can demonstrate knowledge of, for example, how to inspect, don, and doff the respirator.

⁴⁰ 29 CFR § 1910.132(d) mandates that an employer assess the workplace to determine whether hazards are present or likely to be present, which necessitates the use of PPE. If the assessment determines that hazards are present or likely to be present, the employer is to select and have personnel use the PPE that will protect against the hazards identified, communicate these selection decisions to personnel, and select PPE that properly fits each affected individual. The employer is to perform a written certification that identifies: (1) the workplace assessed, (2) the person certifying that the hazard assessment was performed, and (3) the dates of the hazard assessment.

⁴¹ The hazard assessment states that respirators are required as part of full PPE because CDC identified infectious aerosols or mists, such as infectious diseases, and animal dander as a potential hazard.

⁴² See Endnote 53 for more information regarding the CDC documentation and other information that we relied on to determine the PPE recommendations at quarantine stations and sites during our review period.

⁴³ GAO, *HHS Should Clarify Agency Roles for Emergency Return of U.S. Citizens During a Pandemic*, April 2021. Accessed at <https://www.gao.gov/assets/gao-21-334.pdf> on April 27, 2021.

⁴⁴ HHS-OGC, *Findings of the Immediate Office of the General Counsel's Investigation Into March Air Reserve Base and Travis Air Force Base Deployments*, November 12, 2020. Accessed at [https://osc.gov/Documents/Public%20Files/FY21/DI-20-0537/OSC%20File%20No.%20DI-20-000537%20-%20Supplemental%20Report%20with%20Addendum%20\(1\)_Redacted.pdf](https://osc.gov/Documents/Public%20Files/FY21/DI-20-0537/OSC%20File%20No.%20DI-20-000537%20-%20Supplemental%20Report%20with%20Addendum%20(1)_Redacted.pdf) on September 3, 2021.

⁴⁵ HHS-OGC recommended that: (1) roles and responsibilities be clearly defined in advance of future cross-agency missions; (2) CDC ensure preparedness for future deployments that include the type of screening and quarantine that ultimately occurred at quarantine sites; (3) CDC personnel be trained for operationalizing missions that include an infectious disease control element; (4) the National Emergency Repatriation Plan require written CDC guidance be available to all personnel; and (5) two specific HHS personnel be referred for remedial, adverse employment action due to their involvement in these matters. HHS-OGC did not indicate whether HHS concurred with or had implemented these recommendations.

⁴⁶ Beginning mid-March 2020, CDC contracted with DHS to assist with screening at quarantine stations. We did not explicitly review the controls that were recommended and implemented for DHS contractors at quarantine stations, although our findings may have implications for those personnel.

⁴⁷ ASPR's National Disaster Medical System provides personnel, equipment, supplies, and a system of partner hospitals to support an emergency response. ASPR, *National Disaster Medical System*, May 26, 2021. Accessed at <https://www.phe.gov/Preparedness/responders/ndms/Pages/default.aspx> on June 4, 2021.

⁴⁸ We selected JFK, March Air Reserve Base, and Travis Air Force Base because there were initial reports of health and safety concerns associated with these locations. Numerous personnel who deployed to these locations also deployed to other quarantine stations and sites during our review period.

⁴⁹ Of the 729 deployments that surveyed personnel reported participating in, personnel being tested for COVID-19 within 2 weeks of completing 18 of those deployments. We did not ask respondents for the results of those tests.

⁵⁰ CDC, *Update and Interim Guidance on Outbreak of Coronavirus Disease 2019*, February 28, 2020. Accessed at <https://emergency.cdc.gov/han/2020/HAN00428.asp> on March 1, 2022.

⁵¹ FDA, *In Vitro Diagnostics EUAs—Molecular Diagnostic Tests for SARS-CoV-2*. Accessed at <https://www.fda.gov/medical-devices/coronavirus-disease-2019-covid-19-emergency-use-authorizations-medical-devices/in-vitro-diagnostics-euas-molecular-diagnostic-tests-sars-cov-2> on March 1, 2022.

⁵² “Just-in-time training” is training that is administered and scoped once an immediate need is identified.

⁵³ To determine the PPE recommendations at quarantine stations and sites during our review period, we relied on CDC documentation, including a CDC role-based assessment, interviews, and survey responses. The CDC role-based assessment is a 1-page chart that indicates the skin protection, respiratory protection, and eye protection recommended for CDC personnel at quarantine stations.

⁵⁴ Although CDC was responsible for ensuring that its own personnel at quarantine stations and sites wore the PPE it recommended, CDC stated that it was not responsible for ensuring that personnel from other HHS agencies wore the PPE that CDC recommended. These other agencies reported to us that they generally ensured that their personnel wore the PPE recommended by CDC.

⁵⁵ All tertiary screeners could conduct secondary screening, but not all secondary screeners could conduct tertiary screening. Although many personnel were trained to conduct tertiary screening, due to the nature of the screening, personnel most often conducted secondary screening because few passengers actually met the criteria to go to tertiary screening.

⁵⁶ The PPE required for base personnel is outlined in CDC’s 2019 hazard assessments. Although the PPE that CDC required for tertiary screeners was different than that required for base personnel, the respiratory protection required was the same. Additionally, some personnel reported instances where enforcement of CDC’s PPE recommendations at quarantine stations was a concern; however, we did not determine that this was a widespread issue at quarantine stations. Specifically, one respondent reported being a translator that was not fit tested, so this respondent was not cleared to wear an N95 respirator. However, this respondent reported being involved in tertiary screening (i.e., a medical assessment in a closed-door room) as a translator for a potentially infected passenger without a mask.

⁵⁷ In response to this policy change, one quarantine station’s leadership reported that most secondary screeners chose to wear a respirator rather than a surgical mask. If personnel were not fitted and trained to wear a respirator prior to deploying, they were unable to obtain the fitting and training to voluntarily wear the respirator. However, by this point in time, CDC had deployed most personnel with the required fitting and training to wear a respirator.

⁵⁸ Prior OIG and GAO reports discuss potential PPE breaches at quarantine sites in detail. OIG heard similar instances described in interviews and surveys of HHS personnel at quarantine sites.

⁵⁹ For example, at 1 quarantine station, 11 of the 18 survey respondents who deployed in January raised concerns about the PPE required while performing their job duties.

⁶⁰ 29 CFR § 1910.134(c)(2) and 29 CFR § 1910.134(c)(2)(i). When respirators are not required, employers may (but are not required to) provide respirators at the request of employees or permit employees to use their own respirators, if the employer determines that a respirator will not in itself create a hazard (e.g., if the respirator is used improperly or not kept clean). OSHA also encourages respirator use, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. (29 CFR § 1910.134, App. D.)

⁶¹ This quarantine site safety officer reported that CDC’s PPE recommendations for COVID-19 deviated from prior guidance that was more protective. This safety officer reported being concerned that if a potentially infected passenger had a heart attack, safety officers would need to respond and already be wearing the proper PPE to avoid delaying patient care.

⁶² CDC’s communicable disease response plans and OSHA define PPE selection for infectious diseases by Contact Precautions, Droplet Precautions, and Airborne Precautions. Contact Precautions require gloves and may recommend gowns; Droplet Precautions require a procedure or surgical mask for close contact with a passenger, and they require gloves, gowns, and goggles if substantial spray of respiratory fluids is anticipated; and Airborne Precautions require a respirator, and they require gloves, gowns, and goggles if substantial spray of respiratory fluids is anticipated. OSHA, *Healthcare Infectious Diseases*.

Accessed at <https://www.osha.gov/healthcare/infectious-diseases> on September 7, 2021. CDC, *Quarantine Station Communicable Disease Response Plans*, last updated 2017.

⁶³ 29 CFR § 1910.134(d)(1)(iii) and 29 CFR § 1910.134(d)(2).

⁶⁴ HHS, *Pandemic Influenza Plan*, 2005, p. S4-9. Accessed at <https://www.cdc.gov/flu/pdf/professionals/hhspandemicinfluenzaplan.pdf> on July 12, 2021.

⁶⁵ Some PPE can increase core body temperature, which contributes significantly to worker fatigue. Worker fatigue may increase the risk of injuries and/or accidents, such as errors in donning and doffing PPE. In these cases, using more protective PPE could result in hazardous conditions for the worker. NIOSH and OSHA, *Preventing Worker Fatigue Among Ebola Healthcare Workers and Responders*. Accessed at <https://www.cdc.gov/niosh/topics/ebola/pdfs/preventingworkerfatigueamongebolahcw122914.pdf> on April 5, 2022.

⁶⁶ 29 CFR § 1910.132(f)(1) outlines the training requirements for all PPE, including when and what PPE is necessary; how to properly don, doff, adjust, and wear PPE; the limitations of the PPE; and the proper care, maintenance, useful life, and disposal of the PPE. Further, 29 CFR § 1910.132(f)(2) specifies the need for employees to demonstrate an understanding of the training and the ability to use PPE properly before being allowed to perform work requiring the use of PPE. Finally, for respirators specifically, 29 CFR § 1910.134(c)(1) requires employers to establish a program that includes, for example, employee training for potential respiratory hazard exposure and how to properly use respirators. Further, 29 CFR § 1910.134(k)(1) requires employers to ensure that employees can demonstrate knowledge of, for example, how to inspect, don, and doff the respirator.

⁶⁷ CDC, *Hierarchy of Controls*, January 13, 2015. Accessed at <https://www.cdc.gov/niosh/topics/hierarchy/default.html> on April 30, 2021.

⁶⁸ OSHA, *Respiratory Infection Control: Respirators Versus Surgical Masks*, 2009. Accessed at <https://www.osha.gov/sites/default/files/publications/OSHA3219.pdf> on May 6, 2021. CDC also recommends a fit-tested, NIOSH-approved N95 or higher-level respirator for airborne precautions. CDC, *Transmission-Based Precautions*, January 7, 2016. Accessed at <https://www.cdc.gov/infectioncontrol/basics/transmission-based-precautions.html> on April 30, 2021.

⁶⁹ Although CDC's respirator training included "knowledge checks" (i.e., electronic assessment of knowledge using multiple choice questions) within the training to help ensure that staff understood the training, these checks did not require employees to physically demonstrate that they knew the correct procedures for donning or doffing the respirator.

⁷⁰ CDC reported that personnel who take the respirator training are also required to pass an in-person respirator fit test where personnel are also observed donning and doffing a respirator and are provided additional training and guidance, if needed. Personnel are not cleared to wear a respirator if they cannot pass the fit test, which CDC reported included demonstration of proper use of the respirator. CDC did not report that this demonstration of proper use occurred for PPE types other than respirators. CDC also indicated that the respirator training may not be an apparent violation of 29 CFR § 1910.134(k)(1) because fit testing includes employee demonstration of the ability to properly use a respirator. However, we could not independently verify CDC's statements, such as in its documented procedures for fit testing in its *Respiratory Protection Program*, within Chapter 10 of CDC's Health, Safety, and Environmental Policy. CDC's *Respiratory Protection Program* defines a fit test as "the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual." It further states that:

"Individuals who wear a tight-fitting respirator must ensure that they have a good fit. While this is done in the fit test, it is up to the worker to take the steps to ensure their respirator is fitting properly. This can be achieved by performing the following steps: (1) individuals with facial hair must be clean shaven prior to donning a respirator; (2) workers place the respirator over their face, and adjust the straps to ensure the respirator is snug, but not uncomfortably tight; (3) a negative pressure check is performed. The worker inhales deeply. A respirator with a good fit will collapse slightly against the face; (4) a positive pressure check is performed. The worker exhales and covers the outlet valves if the respirator has them, or the entire respirator itself in the case of an N95. Air should not escape. Supervisors will develop their own workplace specific protocols for doffing their respirator. They will also develop protocols for decontaminating non-disposable respirators. Supervisors who need assistance with this are encouraged to contact the OLSS Biosafety Team or the OHSO IH Team." CDC, Chapter 10—Respiratory Protection, 2020 (draft version), pp. 3; 7–8.

We could not find any other reference within CDC's *Respiratory Protection Program* or other evidence describing how employees demonstrate an understanding of how to inspect, don, and doff the respirator prior to using it.

⁷¹ Based on COVID-19 CDC safety assessments at quarantine stations, well-ventilated isolation rooms (an example of an engineering control) were necessary but were not always available during, at a minimum, tertiary screening. For example, a safety officer found that the ventilation in the Detroit quarantine station's tertiary screening rooms was not adequate. In another example, a safety officer reported concerns that part of the air from the tertiary screening room was being recirculated to the rest of the building within the Dallas–Fort Worth quarantine station.

⁷² Each airport receiving international passengers in the United States must provide "suitable office, isolation, and other exclusive space" for CDC to carry out its duties to prevent the introduction and spread of communicable diseases." (42 CFR § 71.47). CDC reported that this authority does not extend to common space used by all airport tenants (including Federal agencies), airport employees, and travelers.

⁷³ There is not a specific designation for a virus that has pandemic potential. However, by the end of February 2020, WHO began alerting the world that COVID-19 had pandemic potential. *STATnews*, "WHO tells countries to prepare for coronavirus pandemic, but insists it's too soon to make that call," February 24, 2020. Accessed at <https://www.statnews.com/2020/02/24/who-tells-countries-prepare-coronavirus-pandemic-too-soon-to-make-call/> on July 22, 2020.

⁷⁴ Homeland Security Council, *Pandemic Influenza Implementation Strategy*, 2006, p. 40. Accessed at <https://www.cdc.gov/flu/pandemic-resources/pdf/pandemic-influenza-implementation.pdf> on July 9, 2021.

⁷⁵ CDC, *Community Mitigation Guidelines to Prevent Pandemic Influenza—United States*, April 21, 2017. Accessed at <https://www.cdc.gov/mmwr/volumes/66/rr/rr6601a1.htm> on August 31, 2021.

⁷⁶ This study found that the rate of asymptomatic cases increased from 0 to 28.6 percent as the outbreak spread and there was increased surveillance and contact tracing. This study reports that early in the course of any outbreak, severe cases are recognized first and then less severe (i.e., mild or asymptomatic) cases are detected as the outbreak spreads. The study was originally published in 2018, with an additional article posted in February 2020 due to the COVID-19 outbreak. The 2020 publication was accessed at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7102602/#:~:text=The%20occurrence%20of%20asymptomatic%20individuals,to%2028.6%25%20%5B1%5D> on March 24, 2022. The original publication was accessed at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7110966/> on March 24, 2022.

⁷⁷ The authors attributed this difference to: (1) the novelty of the pathogen and (2) SARS having minimal genetic relatedness to other coronaviruses, which reduces immunity and may have caused more symptomatic cases. Wilder-Smith, A., Telesman, M. et al., *Asymptomatic SARS coronavirus infection among healthcare workers, Singapore*, 2005. Accessed at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3371799/pdf/04-1165.pdf> on March 24, 2022.

⁷⁸ A CDC team leader reported to OIG that personnel at quarantine sites were told to carry PPE with them in case they needed to interact with a potentially infected passenger. However, we did not find any documentation indicating that this was required and/or conveyed to quarantine site personnel.

⁷⁹ Personnel deployed to other quarantine stations and sites were not included in this guidance.

⁸⁰ This campaign advised individuals in the United States to stay home, avoid gathering in groups, forgo discretionary travel, and discontinue eating in restaurants and bars for 15 days. Accessed at <https://www.justice.gov/doj/page/file/1258511/download> on July 14, 2021.

⁸¹ This system was implemented for all individuals involved with the COVID-19 response. CDC, *Text Illness Monitoring One Pager*, March 18, 2020.

⁸² It was not recommended that this individual self-quarantine based on the guidance available at that time. This individual reported not quarantining despite PPE breaches because this individual believed that the chances of the passengers being infectious were small.

⁸³ If any personnel developed symptoms while quarantining, they were instructed to contact CDC's Occupational Health Clinic for next steps.

⁸⁴ A version of this policy dated a few days earlier advised that personnel deployed to Travis Air Force Base should remain at home or in a comparable setting to the extent possible and practice physical distancing. Additionally, it advised that personnel should not report to work for 14 days from the day of arriving home. This policy did not apply to personnel at other quarantine stations or sites.

⁸⁵ Regulations to control communicable diseases are found at 42 USC § 264. Regulations addressing the prevention, introduction, and spread of communicable diseases from foreign countries into the United States are found at 42 CFR Part 71.

⁸⁶ The first U.S. case associated with probable community spread was identified on February 26, 2020, in Solano County, California, which is the county where the Travis Air Force Base quarantine site was located. CDC, *Epidemiologic Findings from Case Investigations and Contact Tracing for First 200 Cases of Coronavirus Disease, Santa Clara County, California, USA*, May 2021. Accessed https://wwwnc.cdc.gov/eid/article/27/5/20-4876_article on September 24, 2021.

⁸⁷ Passenger screening and quarantining at quarantine sites also expanded during this time period. Passengers continued to arrive at quarantine sites between March 10 and March 12, 2020. By March 23, 2020, however, all quarantine orders for passengers at quarantine sites were rescinded and no new quarantine sites were opened.

⁸⁸ CDC, *Federal Government Adjusts COVID-19 Entry Strategy for International Air Passengers*, September 9, 2020. Accessed at <https://www.cdc.gov/media/releases/2020/s-0909-covid-19-entry-strategy-air-passengers.html> on October 8, 2021.

⁸⁹ CDC, *Federal Government Adjusts COVID-19 Entry Strategy for International Air Passengers*, September 9, 2020.

⁹⁰ CDC leadership continued: "[A]ll of that data taken together has led CDC to make evidence-based recommendations, and this has been driven from the perspective of CDC by scientifically evidence-based recommendations." CDC, *Transcript for CDC Media Telebriefing: Update on 2019 Novel Coronavirus (2019-nCoV)*, January 31, 2020. Accessed at <https://www.cdc.gov/media/releases/2020/t0131-2019-novel-coronavirus.html> on March 16, 2022.

⁹¹ *The Hill*, "The coronavirus can spread without signs of symptoms," January 31, 2020. Accessed at <https://thehill.com/changing-america/well-being/prevention-cures/480891-the-coronavirus-can-spread-without-signs-of> on March 23, 2022.

⁹² BBC, "China coronavirus spreads before symptoms show," January 26, 2020. Accessed at <https://www.bbc.com/news/world-asia-china-51254523> on March 23, 2022.

⁹³ Li, Ruiyan et al., *Substantial undocumented infection facilitates the rapid dissemination of novel coronavirus (COVID-19)*, February 17, 2020. Accessed at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7239048/pdf/nihpp-2020.02.14.20023127.pdf> on March 23, 2020.

⁹⁴ CDC, *Risk Assessment and Management of COVID-19 Among Travelers Arriving at Designated U.S. Airports, January 17–September 13, 2020*; November 13, 2020.

⁹⁵ CDC's *Morbidity and Mortality Weekly Report* does not include discussion on quarantine sites or the implications of its findings on HHS personnel health and safety. CDC, *MMWR: Risk Assessment and Management of COVID-19 Among Travelers Arriving at Designated U.S. Airports, January 17–September 13, 2020*; November 13, 2020. Accessed at https://www.cdc.gov/mmwr/volumes/69/wr/mm6945a4.htm#T1_down on February 9, 2021.

⁹⁶ Eurosurveillance, *Effectiveness of airport screening at detecting travelers infected with novel coronavirus (2019-nCoV)*, February 2020. Accessed at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7014668/pdf/eurosurv-25-5-2.pdf> on December 2, 2021.

⁹⁷ Beyond identifying symptomatic passengers, another intended public health benefit of passenger screening was for the passengers' contact information to be collected and shared with State public health authorities for followup in the event that passengers became ill after traveling. However, State public health authorities received only approximately two-thirds of passengers' information. CDC reported sending State public health authorities contact information for approximately 68 percent of screened passengers. CDC, *MMWR: Risk Assessment and Management of COVID-19 Among Travelers Arriving at Designated U.S. Airports, January 17–September 13, 2020*; November 13, 2020. Accessed at

<https://www.cdc.gov/mmwr/volumes/69/wr/mm6945a4.htm>. Further, GAO released a report in July 2022 that highlighted similar challenges. GAO found that although CDC has taken some action, it is not positioned to efficiently analyze and disseminate data to inform public health policies and respond to disease threats. Also, CDC is not positioned to evaluate its performance in collecting and sharing quality passenger information. GAO, *CDC's Data System Needs Substantial Improvement*, July 2022. Accessed at <https://www.gao.gov/assets/gao-22-105018.pdf> on July 21, 2022.

⁹⁸ CDC, *Federal Government Adjusts COVID-19 Entry Strategy for International Air Passengers*, September 9, 2020. Accessed at <https://www.cdc.gov/media/releases/2020/s-0909-covid-19-entry-strategy-air-passengers.html>.

⁹⁹ Homeland Security Council, *National Strategy for Pandemic Influenza*, November 2005. Accessed at <https://www.cdc.gov/flu/pandemic-resources/pdf/pandemic-influenza-strategy-2005.pdf> on September 27, 2021. Homeland Security Council, *National Strategy for Pandemic Influenza: Implementation Plan*, May 2006. Accessed at <https://www.cdc.gov/flu/pandemic-resources/pdf/pandemic-influenza-implementation.pdf> on September 27, 2021. HHS, *Pandemic Influenza Plan*, November 2005. Accessed at <https://www.cdc.gov/flu/pandemic-resources/pdf/hhsPandemicInfluenzaPlan.pdf> on September 27, 2021.

¹⁰⁰ The 2006 planning outlines six stages for a pandemic response by the Federal Government: Stage 0: New Domestic Animal Outbreak in At-Risk Country, Stage 1: Suspected Human Outbreak Overseas, Stage 2: Confirmed Human Outbreak Overseas, Stage 3: Widespread Human Outbreaks in Multiple Locations Overseas, Stage 4: First Human Case in North America, Stage 5: Spread Throughout the United States, and Stage 6: Recovery and Preparation for Subsequent Waves. The stages are built on a framework provided by the World Health Organization (WHO), which has defined six phases before and during a pandemic, that are linked to the characteristics of a new influenza virus and its spread through the population. See Endnote 104 for further discussion of WHO phases. Homeland Security Council, *National Strategy for Pandemic Influenza: Implementation Plan*, May 2006, pp. 31 and 32.

¹⁰¹ In a 2014 *MMWR*, CDC updated its framework for describing influenza pandemic progression using six intervals and eight domains. CDC reported doing this on the basis of experience from influenza responses between 2006 and 2014 and that “this updated framework provides greater detail and clarity regarding the potential timing of key decisions and actions aimed at slowing the spread and mitigating the impact of an emerging pandemic.” From OIG’s perspective, these updates did not add any additional specificity to screening and quarantining planning. CDC, *MMWR: Updated Preparedness and Response Framework for Influenza Pandemic*, September 26, 2014. Accessed at <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6306a1.htm> on November 10, 2021.

¹⁰² Homeland Security Council, *National Strategy for Pandemic Influenza: Implementation Plan*, May 2006, p. 38.

¹⁰³ *Ibid.*, p. 41.

¹⁰⁴ WHO defines the six phases as follows: Phase 1: no new influenza virus subtypes detected and existing virus subtypes risk is considered low; Phase 2: no new influenza virus subtypes, but a circulating virus subtype poses a substantial risk of human disease; Phase 3: human infection, but no human-to-human spread, or at most, rare instances of spread to a close contact; Phase 4: small cluster(s) with limited human-to-human transmission, but spread is highly localized; Phase 5: larger cluster(s), but human-to-human spread is still localized but has substantial pandemic risk; and Phase 6: pandemic phase, where there is increased and sustained transmission in the general population. Homeland Security Council, *National Strategy for Pandemic Influenza: Implementation Plan*, May 2006, p. 31.

¹⁰⁵ HHS, *Pandemic Influenza Plan*, November 2005, pp. 33–40.

¹⁰⁶ *Ibid.*, p. 38.

¹⁰⁷ *Ibid.*, p. S8-3.

¹⁰⁸ *Ibid.*, p. S8-9.

¹⁰⁹ *Ibid.*, p. S9-3.

¹¹⁰ *Ibid.*

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- ¹¹¹ Homeland Security Council, *National Strategy for Pandemic Influenza: Implementation Plan*, May 2006, p. 76. Accessed at <https://www.cdc.gov/flu/pandemic-resources/pdf/pandemic-influenza-implementation.pdf> on September 27, 2021.
- ¹¹² HHS, *Entry Procedures for Travelers at Air Ports of Entry in the Event of a Severe Influenza Pandemic: Concept of Operations*, March 2009, and HHS, *U.S. Public Health Entry Screening of Arriving International Travelers at Airports During an Influenza Pandemic: Standard Operating Procedures*, March 2009.
- ¹¹³ HHS, *Entry Procedures for Travelers at Air Ports of Entry in the Event of a Severe Influenza Pandemic: Concept of Operations*, March 2009, Section 8.2, p. 13.
- ¹¹⁴ *Ibid.*, Section 8.1, p. 11.
- ¹¹⁵ *Ibid.*, Section 8.1, p. 12, and Section 8.2, p. 13.
- ¹¹⁶ *Ibid.*, pp. 4–5.
- ¹¹⁷ The 2009 CONOPS also states that screening and quarantining measures, specific to slowing the spread of a pandemic influenza virus to the United States, will cease once there is no longer a public health benefit from conducting such measures, based on the recommendation of the Secretary of Health and Human Services, in conjunction with the Secretary of Homeland Security. *Ibid.*, pp. 4–5.
- ¹¹⁸ National Security Council, *National Security Council Playbook for Early Response to High Consequence, Emerging Infectious Disease Threats and Biological Incidents*, 2016.
- ¹¹⁹ *Ibid.*, p. 8.
- ¹²⁰ *Ibid.*, pp. 8 and 31.
- ¹²¹ *Ibid.*, p. 18.
- ¹²² OSHA and CDC issued rules and guidance specific to COVID-19 and non-health care and health care settings during and after the period of our review. OSHA's rules are based on the requirements of the OSH Act. For example, OSHA, *Interim Final Rule: Occupational Exposure to COVID-19, Emergency Temporary Standard*, 86 FR 32376, June 21, 2021. Accessed at <https://www.federalregister.gov/documents/2021/06/21/2021-12428/occupational-exposure-to-covid-19-emergency-temporary-standard> on November 9, 2021. CDC, *COVID-19 Information for the Workplace*. Accessed at https://www.cdc.gov/niosh/emres/2019_ncov_default.html on November 3, 2021.
- ¹²³ CDC, *Engineering Controls*, last updated January 14, 2015. Accessed at <https://www.cdc.gov/niosh/engcontrols/default.html> on July 15, 2021.
- ¹²⁴ *Ibid.*
- ¹²⁵ CDC, *Prevention Strategies for Seasonal Influenza in Healthcare Settings*. Accessed at <https://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm>
- ¹²⁶ *Ibid.*
- ¹²⁷ OSHA, *Guidance on Preparing Workplaces for an Influenza Pandemic*, 2009, pp. 17 and 33. Accessed at <https://www.osha.gov/sites/default/files/publications/OSHA3327pandemic.pdf> on November 18, 2021.
- ¹²⁸ *Ibid.*, pp. 15 and 29.
- ¹²⁹ OSHA, *Hazard Prevention and Control*, 2018. Accessed at https://www.osha.gov/sites/default/files/2018-12/fy11_sh-22318-11_Mod_3_HazardPrevention.pdf.
- ¹³⁰ OSHA, *Guidance on Preparing Workplaces for an Influenza Pandemic*, 2009, p. 19.
- ¹³¹ *Ibid.*, p. 19.
- ¹³² *Ibid.*, p. 14.
- ¹³³ *Ibid.*

¹³⁴ Ibid., p. 19.

¹³⁵ Ibid., p. 15.

¹³⁶ CDC, *Prevention Strategies for Seasonal Influenza in Healthcare Settings*.

¹³⁷ CDC, *2007 Guidelines for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings*, updated July 2019, p. 51.

¹³⁸ OSHA, *Hazard Prevention and Control*, 2018.

¹³⁹ Ibid., pp. 52–53.

¹⁴⁰ CDC, *Guidance on Personal Protective Equipment (PPE) To Be Used By Healthcare Workers during Management of Patients with Confirmed Ebola or Persons under Investigation (PUIs) for Ebola who are Clinically Unstable or Have Bleeding, Vomiting, or Diarrhea in U.S. Hospitals, Including Procedures for Donning and Doffing PPE*, August 30, 2018. Accessed at <https://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance.html> on September 25, 2020.

¹⁴¹ CDC, *Considerations for Selecting Protective Clothing used in Healthcare for Protection Against Microorganisms in Blood and Body Fluids*. Accessed at <https://www.cdc.gov/niosh/npptl/topics/protectiveclothing/default.html> on September 25, 2020.

¹⁴² CDC, *2007 Guidelines for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings*, updated July 2019, p. 53.

¹⁴³ Ibid., p. 55.

¹⁴⁴ Ibid., pp. 54–55.

¹⁴⁵ Ibid., p. 51.

ABOUT THE OFFICE OF INSPECTOR GENERAL

The mission of the Office of Inspector General (OIG), as mandated by Public Law 95-452, as amended, is to protect the integrity of the Department of Health and Human Services (HHS) programs, as well as the health and welfare of beneficiaries served by those programs. This statutory mission is carried out through a nationwide network of audits, investigations, and inspections conducted by the following operating components:

The Office of Audit Services (OAS) provides auditing services for HHS, either by conducting audits with its own audit resources or by overseeing audit work done by others. Audits examine the performance of HHS programs and/or its grantees and contractors in carrying out their respective responsibilities and are intended to provide independent assessments of HHS programs and operations. These audits help reduce waste, abuse, and mismanagement and promote economy and efficiency throughout HHS.

The Office of Evaluation and Inspections (OEI) conducts national evaluations to provide HHS, Congress, and the public with timely, useful, and reliable information on significant issues. These evaluations focus on preventing fraud, waste, or abuse and promoting economy, efficiency, and effectiveness of departmental programs. To promote impact, OEI reports also present practical recommendations for improving program operations.

The Office of Investigations (OI) conducts criminal, civil, and administrative investigations of fraud and misconduct related to HHS programs, operations, and beneficiaries. With investigators working in all 50 States and the District of Columbia, OI utilizes its resources by actively coordinating with the Department of Justice and other Federal, State, and local law enforcement authorities. The investigative efforts of OI often lead to criminal convictions, administrative sanctions, and/or civil monetary penalties.

The Office of Counsel to the Inspector General (OCIG) provides general legal services to OIG, rendering advice and opinions on HHS programs and operations and providing all legal support for OIG's internal operations. OCIG represents OIG in all civil and administrative fraud and abuse cases involving HHS programs, including False Claims Act, program exclusion, and civil monetary penalty cases. In connection with these cases, OCIG also negotiates and monitors corporate integrity agreements. OCIG renders advisory opinions, issues compliance program guidance, publishes fraud alerts, and provides other guidance to the health care industry concerning the anti-kickback statute and other OIG enforcement authorities.