PARAS PROGRAM FOR APPLIED RESEARCH IN AIRPORT SECURITY

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Pandemic Response, Recovery, and Preparedness for Airport Security Operations

Phase 2 – Communicable Disease Planning Guidance

National Safe Skies Alliance, Inc.

Sponsored by the Federal Aviation Administration

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SUMMARY

A team consisting of Ross & Baruzzini, Tidal Basin, and TransSolutions conducted research in two phases to: 1) identify lessons learned during the COVID-19 pandemic; and 2) provide preparedness guidance for communicable disease response and recovery in airport security operations. Phase 1 research focused on lessons learned from the COVID-19 pandemic with respect to passenger impacts, employee/badge holder impacts, Airport Security Program impacts, compliance with evolving COVID-19 guidance, and coordination of response and recovery. Research findings identified during Phase 1 are summarized in an Improvement Plan to assist airports in infectious disease and pandemic preparedness.

Building on Phase 1, Phase 2 research was conducted to provide guidance to support communicable disease response and recovery planning for airport security operations, and to facilitate preparedness in coordination with existing response and recovery protocols in Airport Emergency Plans. Phase 2 research focused on:

- **Emergency Management** – Use of the Incident Command System and the National Incident Management System to support strategic and tactical preparedness and define coordination needs
- **Structure for Communicable Disease Response** – A Concept of Operations addressing response and recovery for: 1) one or a small number of individuals presenting with symptoms from a single flight; 2) a regionalized disease outbreak requiring local measures; and 3) an epidemic or pandemic requiring coordinated national and international response
- **Procedures for Communicable Disease Response** – Airport security operations–specific procedures addressing: 1) queueing and reducing congestion at passenger screening and employee inspection locations; 2) equipment cleaning and disinfection in areas used for passenger screening, employee inspections, and access control points; and 3) staffing and badge holder procedures to support exposure control and to maintain the workforce
- **Technology** – Use of technology for regulatory security processes and to support response and recovery operations while reducing potential exposure
- **Pathogenic Research** – Pathogen-specific information to support customized exposure control measures for a broad base of communicable diseases.

Guidance that informed recommendations provided in this document is summarized in a Literature Review in Appendix A. Appendix B provides a planning outline, and Appendix C provides checklists and tools that support tactical response and recovery procedures for communicable disease scenarios in airports.

PARAS ACRONYMS

ACRP	Airport Cooperative Research Program
AIP	Airport Improvement Program
AOA	Air Operations Area
ARFF	Aircraft Rescue & Firefighting
CCTV	Closed Circuit Television
CFR	Code of Federal Regulations
DHS	Department of Homeland Security
DOT	Department of Transportation
FAA	Federal Aviation Administration
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FSD	Federal Security Director
GPS	Global Positioning System
IED	Improvised Explosive Device
IT	Information Technology
MOU	Memorandum of Understanding
RFP	Request for Proposals
ROI	Return on Investment
SIDA	Security Identification Display Area
SOP	Standard Operating Procedure
SSI	Sensitive Security Information
TSA	Transportation Security Administration

ABBREVIATIONS, ACRONYMS, INITIALISMS, AND SYMBOLS

AAR	After-Action Report
ACI	Airports Council International
AEP	Airport Emergency Plan
CBP	Customs and Border Protection
CDC	Centers for Disease Control and Prevention
CDRRP	Communicable Disease Response and Recovery Plan
CONOPS	Concept of Operations
CPG	Comprehensive Preparedness Guide
EMS	Emergency Medical Services
EOC	Emergency Operations Centers
ESF	Emergency Support Function
GBAC	Global Biorisk Advisory Council
HHS	Department of Health and Human Services
HSEEP	Homeland Security Exercise and Evaluation Program
ICAO	International Civil Aviation Organization
ICS	Incident Command System
IMT	Incident Management Team
IP	Improvement Plan
JIC	Joint Information Center
LEMA	Local Emergency Management Agency
LPHA	Local Public Health Agency
LWP	Local Warning Point
NIMS	National Incident Management System
NIPP	National Infrastructure Protection Plan
NPG	National Preparedness Goal

NPS	National Preparedness System
NRF	National Response Framework
PIO	Public Information Officer
POD	Point of Distribution
POE	Point of Entry
PPE	Personal Protective Equipment
PTEN	Proximity Tracing and Exposure Notification
SD	Security Directive
SEA	Seattle-Tacoma International Airport
SEMA	State Emergency Management Agency
SNS	Strategic National Stockpile
THD	Traveler Health Declaration
TSO	Transportation Security Officer
VHF	Viral Hemorrhagic Fever

SECTION 1: INTRODUCTION

A team consisting of Ross & Baruzzini, Tidal Basin, and TransSolutions conducted a two-phased research project to support communicable disease response, recovery, and preparedness for airport security operations. The Phase 1 research, completed in January 2022, provides lessons learned during the COVID-19 pandemic using principles for developing After-Action Reports (AAR) and Improvement Plans (IP), including the Homeland Security Exercise and Evaluation Program[1] (HSEEP) and After-Action Review Technical Guidance.[2] Phase 2 research focuses on developing a Communicable Disease Response and Recovery Plan (CDRRP) for airport security operations.

This guidance document recommends a Concept of Operations (CONOPS) and tactics for responding to communicable disease scenarios within airport security operations. In addition, best practices for leveraging technology, pathogen-specific considerations, and recovery measures are described to customize measures for a variety of scenarios. The conclusion also provides best practices for maintaining CDRRPs and supporting overall preparedness for response and recovery. The information is organized in Sections 2–7 as outlined below:

- Section 2: Concept of Operations
  - 2.1 Command and Control
  - 2.2 Operational Approach
  - 2.3 Termination and Recovery
- Section 3: Tactics for Communicable Disease Response
  - 3.1 Social Distancing
  - 3.2 Health Assessment and Contact Tracing
  - 3.3 Cleaning and Disinfection
  - 3.4 Medical Countermeasures
  - 3.5 Airline and Tenant Tactical Coordination
  - 3.6 Personal Protective Equipment
  - 3.7 Risk Communications
  - 3.8 Staff and Badge Holder Considerations
  - 3.9 Point Source Response
- Section 4: Leveraging Technology
  - 4.1 Mobile Applications
  - 4.2 Camera Systems, Facial Recognition, and Infrared Technology
  - 4.3 Touchless Technology and Biometrics
  - 4.4 Virtual Queuing
  - 4.5 Robotics
  - 4.6 Voice Assistants
  - 4.7 Virtual Emergency Management

[1] Homeland Security Exercise and Evaluation Program, U.S. Department of Homeland Security, January 2020, https://www.fema.gov/sites/default/files/2020-04/Homeland-Security-Exercise-and-Evaluation-Program-Doctrine-2020-Revision-2-2-25.pdf.
[2] After-Action Review Technical Guidance, U.S. Agency for International Development (USAID), PN-ADF-360, February 2006, https://pdf.usaid.gov/pdf_docs/pnadf360.pdf

- Section 5: Pathogen-Specific Considerations
- Section 6: Recovery
  - 6.1 Demobilizing and Restoring Processes and Resources
  - 6.2 After-Action Reviews and Improvement Planning
  - 6.3 Financial and Operational Recovery
- Section 7: Plan Implementation and Maintenance
  - 7.1 Developing Competencies
  - 7.2 Plan Review
  - 7.3 Change Management

A Literature Review was conducted to identify sources of information regarding infectious diseases, emergency preparedness and public health response and recovery standards, and airport-specific emergency preparedness best practices. Details of the Literature Review are provided in Appendix A. To support CDRRP development in airports, a Planning Template and Tactical Response and Recovery Checklists are provided in Appendices B and C, respectively.

1.1 Purpose, Scope, and Objectives

This Phase 2 document builds on Phase 1 to provide specific strategic and tactical concepts to facilitate preparedness for a host of communicable diseases that may be encountered in airport security operations. This includes identifying specific constructs and procedures to support exposure control and management of these communicable diseases in an airport environment.

The scope of Phase 2 research includes pandemic scenarios as described in Phase 1, as well as regional outbreaks or epidemics and single-point or isolated cases of communicable diseases. As we have learned with COVID-19, pandemics are likely to require medium- to long-term implementation of exposure control measures throughout the travel continuum. Similarly, regional outbreaks or epidemics may require exposure control measures in affected airports, which may also entail restricting travel to areas outside of the affected region. Single or limited cases, which may be identified on a single aircraft, require focused procedures to prevent them from spreading.

In addition to geographic scope, Phase 2 research includes consideration of various types of pathogens, their communicability among humans, and symptoms and severity of illnesses they cause. Understanding these factors assists in planning for a full range of communicable disease response and recovery needs.

1.2 Planning Assumptions

In the early stages of communicable disease planning within airports, it is important to identify and validate assumptions to support procedural development for response and recovery. Communicable disease preparedness requires consideration of jurisdiction and capabilities among various support agencies. Assumptions in communicable disease response and recovery planning are provided below:

- A communicable disease outbreak may result from a natural or technological disaster, biological event, terrorism using a biological weapon, or an infected individual coming through a point of entry. Communities across a wide geographic area may be impacted simultaneously and a significant population may be affected.

- A communicable disease response within an airport may result from the presence of: 1) one or a small number of individuals from a single flight presenting with symptoms; 2) a regionalized outbreak of a disease; or 3) an epidemic impacting a nation or nations, or a worldwide pandemic requiring coordinated national and international response.
- Controlling the spread of a disease is largely dependent on its communicability. Airport-specific plans may be implemented to support local, state, and federal efforts to mitigate transmission of a communicable disease.
- Communicable disease response is generally led at the local level by the local Public Health Agency (LPHA) in coordination with the local Emergency Management Agency (LEMA), both of which may report to similar county and/or state agencies for coordination and resourcing purposes. Airport communicable disease planning should be performed in coordination with local jurisdictional public health and emergency management agencies.
- Emergency Operations Centers (EOC) and Unified Command may be established to support interagency response and recovery coordination in accordance with the Incident Command System (ICS). Airports should maintain a liaison to communicate and coordinate with the public health and emergency management agencies. These concepts are describe in Section 2, Concept of Operations.
- Particularly for epidemics and pandemics, airports and local jurisdictions may not be able to rely on mutual aid or state assistance to support local response efforts. Communities across wide geographic areas may be impacted simultaneously and mutual aid may be limited.
- Emergency Medical Services (EMS) may face extremely high call volumes for several weeks as well as a 25%–35% reduction in available staff.
- Significant disruption of public and privately owned critical infrastructure may occur including transportation, commerce, utilities, public safety, agriculture, and communications. Supply chain disruptions may result and impact the availability of household goods, food, fuel, and other critical supplies and resources.
- The effects of epidemics and pandemics on individual communities will be relatively prolonged (e.g., weeks to months) compared to the span of most other natural disasters.
- Preventative strategies aimed at reducing the spread of infection may be implemented, such as closing schools, community centers, and other public gathering points, and canceling public events.
- Some people will be unable or unwilling to comply with isolation directives. For others, preventative strategies may be less feasible (e.g., populations experiencing homelessness who live in congregate settings).
- The general public should be provided with continuous updates on the status of a communicable disease event, impacts on essential functions, and steps people can take to protect themselves.
- Airports may be requested to serve as Points of Distribution (POD) for vaccines and other medical countermeasures during widespread communicable disease events. Procedural considerations are provided in Section 3.4, Medical Countermeasures.
- The Centers for Disease Control and Prevention (CDC), Division of Global Migration and Quarantine is responsible for preventing communicable diseases from being introduced through U.S. Points of Entry (POE) and from spreading between states.

1.3 Planning Concepts

Recommendations provided in this document are premised on key planning concepts, including emergency preparedness doctrine, public health emergency preparedness guidance, and infectious disease-specific information. Key planning concepts are summarized below.

1.3.1 Emergency Preparedness Doctrine

In response to the terrorist attacks of September 11, 2001, the federal government implemented the National Preparedness System (NPS),[3] which provides guidance to support integrated preparedness, response, and recovery at all levels of government. The NPS has evolved as a result of lessons learned from incidents of national significance. Key components of the NPS used throughout this document include the National Preparedness Goal (NPG), National Response Framework (NRF), National Incident Management System (NIMS), Federal Emergency Management Agency (FEMA) Comprehensive Preparedness Guide (CPG) 101, *Developing and Maintaining State, Territorial, Tribal, and Local Government Emergency Plans*, and HSEEP. Each of these components is summarized below.

- **National Preparedness Goal** – The NPG defines preparedness for all types of emergencies based on five mission areas: 1) Prevention; 2) Protection; 3) Mitigation; 4) Response; and 5) Recovery. The NPG also describes Core Capabilities that are critical to the five mission areas. Core Capabilities encompass functions necessary to support effective response and recovery, and provide targets that can be adapted for infectious disease preparedness within airports.
- **National Response Framework** – The NRF provides a national strategy for building, sustaining, and delivering response Core Capabilities identified in the NPG. The NRF describes 15 Emergency Support Functions (ESF) and the federal agencies assigned to lead and support each ESF. Most federal ESFs support a number of the response Core Capabilities. Large-scale infectious disease response, such as for an epidemic or pandemic, may require coordination with federal ESFs to implement effective exposure control measures. Also, many local and state agencies are organized in ESFs, though they they may differ slightly from the federal level in scope and assignees.

  At the federal level, ESF 8 – Public Health and Medical Services, directed by the Department of Health and Human Services (HHS), leads communicable disease response and recovery. HHS coordinates provision of public health services, medical surge support, behavioral health services, and mass fatality management in response to actual or potential public health emergencies. Within local and state governments that are organized using an ESF structure, ESF 8 is generally managed by local and state health departments.
- **National Incident Management System** – NIMS provides a standardized tactical approach to multijurisdiction and multidiscipline coordination during complex emergency operations. Structures within NIMS include the ICS, which provides a management system to direct and control emergency response operations. The ICS strategy for response and recovery is used throughout this document to support CDRRP recommendations.
- **FEMA CPG 101** – *Developing and Maintaining State, Territorial, Tribal, and Local Government Emergency Plans*[4] provides guidance to support response and recovery planning and integrates lessons from real emergencies and concepts from the NPG, NRF, NIMS, and

[3] National Preparedness System, https://www.fema.gov/emergency-managers/national-preparedness/system.
[4] Developing and Maintaining Emergency Operations Plans, Comprehensive Preparedness Guide 101, Version 3, FEMA, September 2021, (fema.gov), https://www.fema.gov/sites/default/files/documents/fema_cpg-101-v3-developing-maintaining-eops.pdf.

National Infrastructure Protection Plan (NIPP). CPG 101 also describes how state and local planning integrates with federal and tribal planning. Principles described in CPG 101 are used throughout this document to support planning structure.

- **Homeland Security Exercise and Evaluation Program** – Understanding roles and responsibilities during an emergency in concert with established plans requires specialized training. HSEEP establishes procedures for planning, designing, and conducting training and exercises. HSEEP also provides guidelines for developing Multi-Year Integrated Preparedness Plans focusing on a three- to five-year window to establish a step-wise, graduated training and exercise program. HSEEP principles are used in this document to describe training and exercises necessary to build competencies for communicable disease response. In addition, the After Action Report (AAR) and Improvement Plan (IP) concepts from HSEEP are used for post-incident review recommendations.

1.3.2 Public Health Emergency Preparedness Guidance

The CDC issued *Public Health Emergency Preparedness and Response Capabilities, National Standards for State, Local, Tribal, and Territorial Public Health*[5] to establish standards for capabilities to support public health emergency preparedness at the local and state levels. The standards support the NPS and NPG as they relate to public health emergencies and address communicable disease outbreaks and coordination needs among a broad base of partners and stakeholders.

The CDC identifies 15 distinct capabilities to support a national capability-based framework for ESF 8 at the local, state, and federal levels. While these capabilities are focused on public health, airports may benefit from understanding the planning parameters under which public health agencies operate. The 13 capabilities that the research team identified as relevant to airports are summarized below:

- **Community Preparedness** – The ability of a community to prepare for, withstand, and recover from public health incidents in both the short and long term.
- **Community Recovery** – The ability to identify critical assets, facilities, and other services within public health and other relevant industries to support recovery operations.
- **Emergency Operations Coordination** – The ability to coordinate with emergency management and to direct and support incidents with public health or healthcare implications through a standardized, scalable system of oversight, organization, and supervision consistent with jurisdictional standards and NIMS.
- **Emergency Public Information and Warning** – The ability to develop, coordinate, and disseminate information, alerts, warnings, and notifications to the public and incident management personnel.
- **Information Sharing** – The ability to conduct multijurisdictional and multidisciplinary exchange of health-related information and situational awareness data among local, state, and federal levels of government and the private sector. This capability includes routine information sharing as well as public health alerts for incidents of public health significance.
- **Medical Countermeasure Dispensing and Administration** – The ability to provide medical countermeasures to targeted populations to prevent, mitigate, or treat the adverse health effects

[5] Public Health Emergency Preparedness and Response Capabilities: National Standards for State, Local, Tribal, and Territorial Public Health, Centers for Disease Control and Prevention, October 2018, https://www.cdc.gov/cpr/readiness/00_docs/CDC_PreparednesResponseCapabilities_October2018_Final_508.pdf.

of a public health incident per public health guidelines. This capability focuses on dispensing and administering medical countermeasures (vaccines, antiviral drugs, antibiotics, and antitoxins).

- **Medical Materiel Management and Distribution** – The ability to acquire, manage, transport, and track medical materiel during a public health incident, and the ability to recover and account for unused resources such as pharmaceuticals, vaccines, gloves, masks, ventilators, or medical equipment after an incident. Federal resources such as the Strategic National Stockpile (SNS) (medical supplies) will be shipped via aircraft in most cases. Airports may be asked to support receipt of materiel, coordinate security, and escort public health personnel.
- **Medical Surge** – The ability to provide adequate medical evaluation and care during events that exceed the limits of the normal medical infrastructure of an affected community. It includes the ability to support public health services including disease surveillance, epidemiological inquiry, laboratory diagnostic services, and environmental health assessments.
- **Nonpharmaceutical Interventions** – The ability to implement actions that can help slow the spread of illness or reduce adverse impacts of public health emergencies. This capability focuses on communities, community partners, and stakeholders implementing nonpharmaceutical interventions, which may include isolation/quarantine, restrictions on movement and travel advisories or warnings, social distancing, external decontamination, hygiene, and other precautionary protective behaviors.
- **Public Health Laboratory Testing** – The ability to detect, characterize, and confirm public health threats, as well as report timely data, provide investigative support, and use partnerships to address exposure to infectious agents. This capability supports passive and active surveillance when preparing for, responding to, and recovering from public health threats and emergencies.
- **Public Health Surveillance and Epidemiological Investigation** – The ability to create, maintain, and support routine surveillance and detection systems and epidemiological investigation, particularly in response to incidents of public health significance.
- **Responder Safety and Health** – The ability to protect public health and other emergency responders during pre-deployment, deployment, and post-deployment.
- **Volunteer Management** – The ability to coordinate with emergency management and partner agencies to identify, recruit, register, verify, train, and engage volunteers to support public health preparedness, response, and recovery during pre-deployment, deployment, and post-deployment.

The infectious disease preparedness parameters described above provide airport authorities with insight as to the types of services that can be coordinated through public health agencies in support of effective exposure control among passengers, employees, and other stakeholders.

1.3.3 Pathogen-Specific Considerations

With support from state and local agencies, the CDC monitors over 120 notifiable diseases and conditions at the national level to detect disease outbreaks, track the spread of disease, identify geographic areas of concern, assist state and local public health departments in controlling disease, and evaluate and fund disease control activities. Using the CDC National Notifiable Disease Surveillance System,[6] the research team identified 78 pathogen and disease types[7] and studied their characteristics to

[6] National Notifiable Disease Surveillance System, Surveillance Case Definitions for Current and Historical Conditions, https://ndc.services.cdc.gov/, accessed between January 15 and February 14, 2022.

[7] Those diseases not applicable to airport environments, such as sexually transmitted diseases, were eliminated from the review; others, such as certain hemorrhagic fever viruses, are grouped which reduced the overall number of applicable pathogen and disease types to 78.

support communicable disease planning in airports (see Appendix A1). Three primary factors of infectious diseases are important to support ongoing planning within airports:

1. Communicability
2. Symptoms and Severity
3. Geographic Range and Travel Patterns

Understanding communicability and symptoms that are abnormal relative to locally prevalent infectious diseases and tracking passenger travel patterns, in collaboration with public health officials, may assist in identifying foreign or novel diseases. Unique symptoms and passenger travel history may be valuable in identifying potential non-endemic disease cases in airports. Data provided in Appendix A1 is useful to support infectious disease planning within airports for point source scenarios as well as broader community transmission. Pathogen-specific considerations are also addressed in Section 5.

SECTION 2: CONCEPT OF OPERATIONS

As described in FEMA CPG 101, the CONOPS outlines the airport planning team's intent regarding emergency operations, and provides a concept and methodology for how an airport and stakeholders accomplish a mission or set of objectives to reach a desired end state. The CONOPS addresses the interface between field operations and EOCs that may be activated, and may also address direction and control, alert and warning, and continuity. The CONOPS should describe:

- Who has the authority to activate the CDRRP
- Processes for declaring an emergency and how it is coordinated with stakeholders
- How legal and policy questions are resolved, including liability protection
- How coordination will occur with relevant appropriate agencies and political divisions
- How the CDRRP accounts for physical, programmatic, and communications needs of individuals with disabilities, individuals with access and functional needs, and cultural considerations
- Additional response/support agency plans that directly support airport response and recovery

Recommendations for developing an airport CONOPS for communicable disease response and recovery are provided below. Structures and functions are scalable to address various sizes of airports, as well as varying scopes of communicable disease response.

2.1 Command and Control

Generally, the LPHA and LEMA share responsibility for communicable disease response and recovery, and will support resourcing through mutual aid with local jurisdictions, regional and state resources, Emergency Management Assistance Compacts among states, and federal agency support as needed and available. Within the local jurisdictional EOC and among other local response agencies, NIMS serves as the standard operating guideline for all incidents, using the ICS as the standard organizational structure for incident management.

For communicable disease response, a Unified Command structure may be used to organize leadership within key agencies to implement specific tasks. External resources that may be available to airports in support of response and recovery are identified in Table 2-1.

Table 2-1. Response Resources and Process for Access

Resource	Responsibility
Local and Regional Resources	
Local Warning Point (LWP)	An LWP can be contacted 24/7 by airport personnel and other agencies. The Incident Commander or designee should notify the LWP about any potential communicable disease outbreaks.
Fire and Rescue/Emergency Medical Services (EMS)	Fire and rescue and EMS resources can be accessed via 911 or other established and pre-planned emergency communication measures to support medical transport of potentially infected people.
Law Enforcement	Law enforcement can be accessed via 911 or other established and pre-planned emergency communication measures to provide security, perimeter protection, or escorts for ill persons being transported to hospital facilities, as needed and if available.

Resource	Responsibility
Local Emergency Management Agency (LEMA)	The LEMA is available to support emergencies via direct requests for resources; serve as a conduit to mutual aid, regional, and state resources; and support public warning and information distribution.
Local Public Health Agency (LPHA)	Most jurisdictions have LPHAs that are available on an emergency basis via EOC request to provide medical personnel, epidemiologists, and other staff to evaluate patients, identify disease and progression, and provide medical countermeasures and quarantine capabilities.
State Resources	
State Warning Point	Some states have a State Warning Point or similar construct that serves as a 24/7 communications and dispatch center that can be contacted by the LWP, state and local agencies, emergency organizations, and federal agencies to maintain efficient and effective communication on incidents that may escalate to major emergencies.
State Emergency Management Agency (SEMA) / State Emergency Response Team	The SEMA supports emergencies via direct requests for resources. Resources and logistical support are available via SEMAs and State Emergency Response Teams.
State Public Health Agency	During a communicable disease outbreak in which local resources and capabilities are outpaced by needs, State Public Health Agencies can provide personnel, medical countermeasures, and other support to local health authorities.
Federal Resources	
ESF 8 – Public Health and Medical Services	Via HHS, with support from other federal agencies, ESF 8 coordinates assistance in response to communicable diseases, including a full range of public health services, medical surge support, and medical supplies (including the SNS). ESF 8 resources must be requested at the state level.
CDC Quarantine Stations	CDC Quarantine Stations have specific functions in a communicable disease outbreak, and will provide quarantine capability for up to 72 hours, experts to identify the disease, surge capacity, and medical countermeasures if needed. The CDC operates Quarantine Stations in the following locations: 1. Anchorage 2. Atlanta 3. Boston 4. Chicago 5. Dallas 6. Detroit 7. El Paso 8. Honolulu 9. Houston 10. Los Angeles 11. Miami 12. Minneapolis 13. New York 14. Newark 15. Philadelphia 16. San Diego 17. San Francisco 18. San Juan 19. Seattle 20. Washington, DC

2.1.1 Coordination with Local Agencies

To develop an effective airport CDRRP, coordination with relevant local agencies is vital. In most jurisdictions, the LEMA and LPHA have specific and critical roles in communicable disease response and recovery. Benefits of pre-event planning and coordination among local agencies include:

- Facilitates an effective working relationship among airports, agencies, and organizations during a real incident
- Assists in resolving jurisdictional concerns in advance
- Assists all parties in understanding roles and responsibilities of local, state, and federal agencies

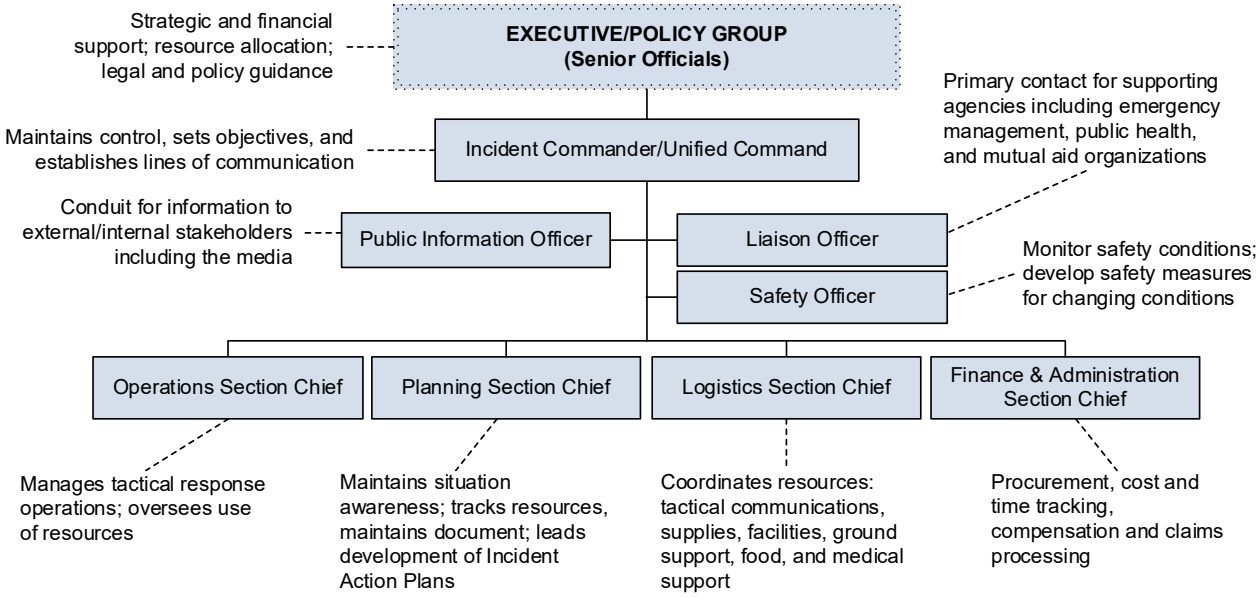
- Assists in determining lead and support agencies and incident command roles based on function and legal jurisdiction
- Supports relationship building and information sharing among designated agency contacts
- Assists with identifying local- and region-specific risks or concerns that may require specialized approaches, processes, or equipment
- Provides an opportunity to define trigger points for EOC activation and other response measures among all agencies

In addition to pre-planning and coordination, airports and LPHAs indicated that an effective training program for all response partners is essential to understanding how to work together. Conducting exercises with mutual aid partners also supports more effective and efficient response and develops competencies among non-public health assignees.[8] Additional information regarding training and exercises is provided in Section 7.1, Developing Competencies.

2.1.2 Airport Command and Control

Command and control of communicable disease emergencies within airports should be accomplished using an ICS structure that is properly scaled to meet the needs of the emergency and is consistent with the Airport Emergency Plan (AEP). ICS command and general staff positions are described in Figure 2-1. These positions support management of response operations, including internal and external coordination, as well as communications and resourcing.

Figure 2-1. ICS Command and General Staff Positions



Jurisdictional and resourcing challenges are common in communicable disease response and recovery. The Command and General Staff positions described in Figure 2-1 are responsible for addressing questions regarding policy, legality, finances, and resource allocation. The Executive/Policy Group is intended to provide strategic direction to the Incident Commander or Unified Command, and also resolves discrepancies that may arise regarding jurisdiction, resources, or other policy concerns.

[8] Smith, James F., and Greenberg, Joshua, ACRP Synthesis 83, Preparing Airports for Communicable Diseases on Arriving Flights, Airport Cooperative Research Program, 2017, pages 82–83.

An Operations Section to support tactical response during a communicable disease emergency at an airport is discussed in Section 2.2, Operational Approach. The Operational Approach section defines strike teams that are devised specifically for communicable disease response needs at an airport. The Command and General Staff positions and strike teams are referred to as the Incident Management Team (IMT).

2.1.3 Activation

An airport CDRRP should be activated based on defined triggers, and should occur consistently with procedures in the AEP. Activation involves recognizing that an event may occur or has occurred, notifying the relevant authorities, and determining the activation level. An individual within airport leadership is designated to serve as an Incident Commander who will oversee functions described in the CDRRP in consultation with external agencies (generally the LPHA and LEMA).

2.1.3.1 Activation Levels

Emergency planning can benefit from establishing activation levels to signify the extent of an emergency and to establish automatic triggers for response actions such as EOC activation. Recommended activation levels for communicable disease events are provided in Table 2-2.

Table 2-2. Recommended Activation Levels for Communicable Disease Response

Level and Criteria	Emergency Response Actions
Level 1 Activation	
• Epidemic or pandemic impacting local area is confirmed • Traveling public is likely to be broadly impacted	• Fully activate the airport EOC and IMT (virtual as required) • Establish Unified Command and coordination with the LEMA and LPHA • Activate all strike teams (see Section 2.2) • Establish contact with all airport stakeholders • Request local resources as needed • Issue notices to inform the public of airport conditions
Level 2 – Partial Activation	
• A communicable disease is confirmed within the U.S. *or* a point source or limited number of ill passengers arriving at the airport • Traveling public may be aware but not directly impacted locally	• Partially activate airport EOC (virtual as required) and IMT • Establish coordination with LEMA and LPHA; Unified Command may be established • Notify strike team leaders and place on standby as needed • Provide preliminary situation report to relevant airport stakeholders • Begin to develop resource requests if local impact is anticipated

Level and Criteria	Emergency Response Actions
Level 3 – Enhanced Monitoring	
• A communicable disease of concern is possible within the U.S. • Health officials are monitoring a specific communicable disease • An airport outside the U.S. has confirmed passengers with a communicable disease of concern	• Airport Liaison Officer establishes and maintains contact with public health and emergency management officials • Assigned Operations Section Chief or designee monitors airport trade associations and other sources of airport-specific information • Assigned Operations Section Chief or designee monitors news and data sources regarding international airports and the potential for communicable disease transmission among passengers • Airport Liaison Officer and/or Operations Section Chief or designee alerts airport leadership and/or assigned Incident Commander of relevant information and intelligence
Level 4 – Normal	
• No known communicable disease outbreak	• Normal operations; no response measures activated

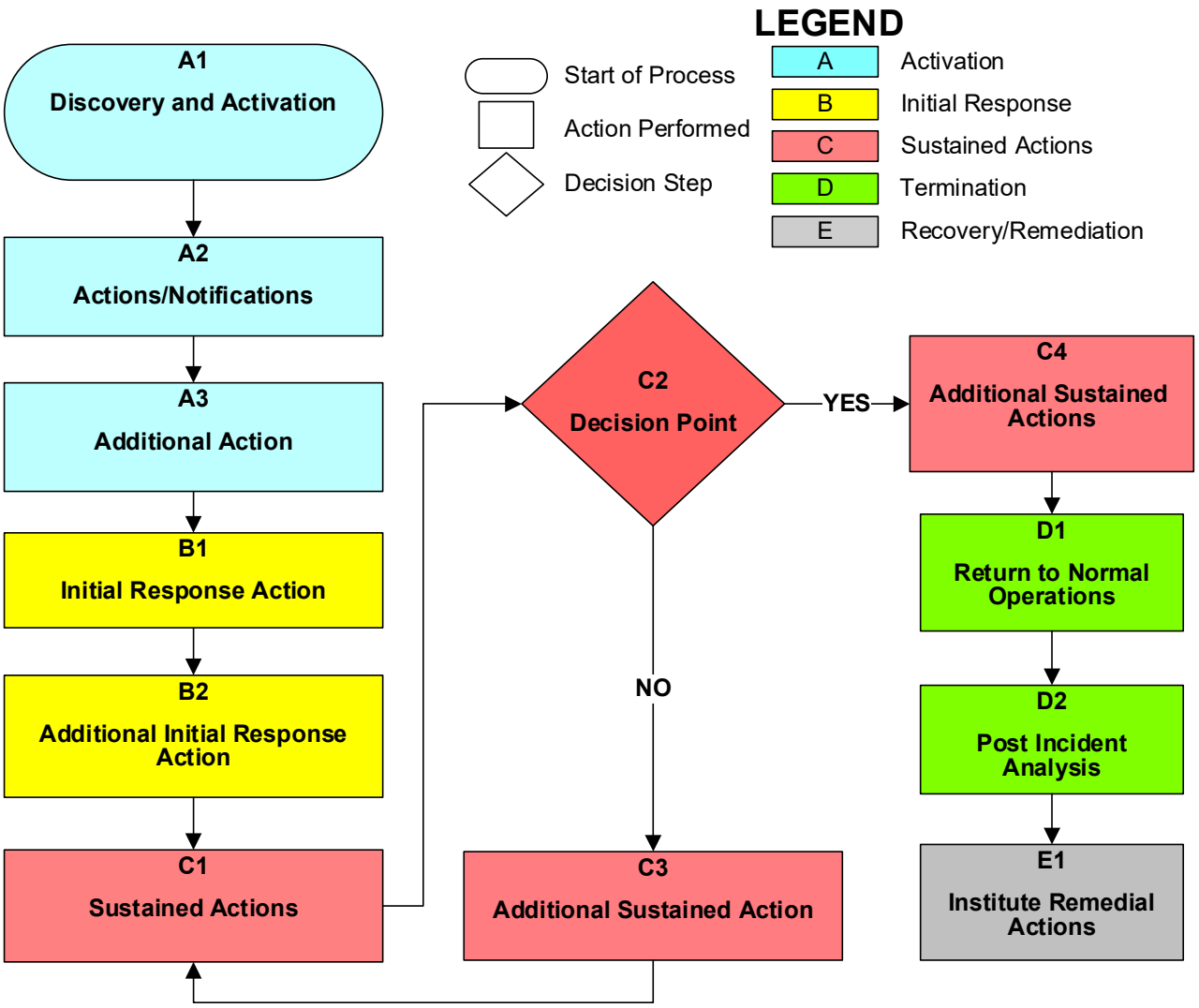
2.1.3.2 Process Flow

Following initial response, sustained actions continue until the negative impact of the event has been addressed. Once sustained actions are complete, the Incident Commander or Unified Command will terminate operations. Termination involves returning impacted areas or operations to normal and conducting a post-incident analysis. Finally, based on the post-incident analysis, short- and long-term recovery may commence, which generally involves cost recovery and improving preparedness measures for communicable diseases. Use of standard ICS[9] forms throughout response and recovery aids in documenting resources used and supports cost recovery.

A response flow diagram and checklist to support communicable disease response is provided in Appendix C1, and is designed around the concepts of Activation, Initial Response, Sustained Actions, Termination, and Recovery/Remediation described in the flow diagram in Figure 2-2.

[9] https://training.fema.gov/icsresource/icsforms.aspx

Figure 2-2. Generic Response Flow Diagram



2.1.4 Emergency Operations Centers

EOCs are the physical locations where information and resources to support incident management activities are coordinated. An EOC may be a temporary facility, or it may be located in a centralized or permanent facility. In most locations, the primary EOC is operated by the LEMA with discipline-based (e.g., fire, law enforcement, public health, medical services) EOCs reporting up to the LEMA. EOCs are also organized by jurisdiction (e.g., federal, state, regional, tribal, city, county). EOCs primarily handle emergency response and short-term recovery efforts. Generally, EOCs have limited full-time personnel and augment staff during periods of crisis or EOC activation.

Airports can benefit from establishing an EOC to serve as the command and control location for monitoring response and recovery. Ideally, radio and cellular communications and technology systems (e.g., video cameras, building and communications control) are available to support situational awareness and expedited response. During emergency response operations, Command and General Staff functions should be conducted in the EOC using relevant technology. If the EOC is activated, the following steps should be implemented:

1. Based on the activation level, the Incident Commander should request an EOC Manager and/or pre-determined IMT members to report to the EOC
2. The Incident Commander should direct the EOC Manager and assigned personnel to ensure that work stations for each IMT member are operational and include a working computer and network access, a landline telephone, and copies of the CDRRP
3. The EOC Manager, in consultation with the Incident Commander, should provide a situational briefing to incoming IMT members

Once the EOC is activated, the Incident Commander, EOC Manager, and other IMT members should assess the severity of the emergency and determine if a change in activation level is necessary. Contact with LEMA and LPHA EOCs should also occur based on activation level.

VIRTUAL EOCS

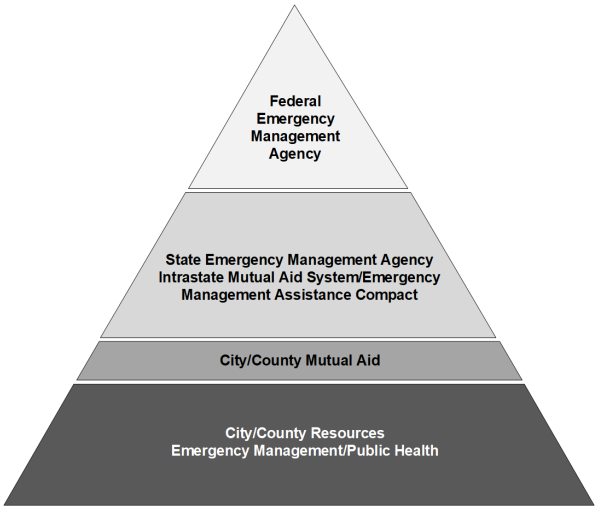
Remote coordination using a virtual EOC has become prominent at airports due to space and technology constraints as well as convenience. While there are substantial benefits to in-person interactions, virtual EOCs are used successfully to coordinate response and recovery for a variety of emergencies. For communicable disease response, using a virtual EOC provides an important and potentially necessary benefit in keeping people distanced, thereby limiting the possibility of exposure among key command and general staff participants.

Operating a virtual EOC requires electrical power, telecommunications equipment (telephone, radio, computer, etc.), and internet connection for optimal performance. Additional information regarding technology to support use of a virtual EOC is provided in Section 4, Leveraging Technology.

2.1.5 Logistics and Resourcing

AEPs require coordination with emergency response stakeholders for tactical response as well as management of response and recovery operations. Through EOC-to-EOC coordination, airports can organize equipment, supplies, and other resource needs as requested by the Incident Commander, Operations Section Chief, or other agency performing response and recovery operations.

Figure 2-3. Resource Support Pyramid



Considerable resources and capabilities are available through disciplinary agencies, mutual aid agreements that promote the prompt transfer of resources across jurisdictional boundaries, and a hierarchy of outreach from city to county, county to state, and state to federal, as depicted in Figure 2-3. For public health response, federal resources are available as described in Appendix A3, Public Health Emergency Preparedness Guidance.

2.1.6 Legal and Regulatory Issues

For most airport emergencies, legal, regulatory, and jurisdictional guidance and protocols are well-defined. Communicable disease events, particularly epidemics and pandemics, may present legal challenges with respect to instituting widespread or compulsory exposure control measures such as:

- Closing areas of the airport to limit exposure and separate populations
- Prohibiting non-ticketed passengers from entering public areas of the airport
- Prohibiting passenger pick-up inside the terminal
- Requiring masks or other PPE
- Enforcement of exposure control measures by law enforcement

In some jurisdictions, exposure control measures identified in Section 3, Tactics for Communicable Disease Response, may require coordination with airport or jurisdictional legal counsel, and may include enacting emergency ordinances to provide a legal basis for implementation. A model ordinance for implementing exposure control measures in airports is provided in Appendix C2, Tool to Develop Emergency Temporary Ordinance.[10]

2.2 Operational Approach

Steps taken to control exposure to communicable diseases typically include:

1. **Testing** – Depending on the pathogen, testing of symptomatic and potentially asymptomatic people provides information as to the extent of infection, illness, and other important data.
2. **Contact Tracing** – Testing and other case validation allows contact tracing to identify those exposed to known cases.
3. **Isolation and Quarantine** – For known cases or close contacts, isolation can be implemented to contain the spread of the pathogen. Ideally, this is followed up with confirmation testing.
4. **Social Distancing** – To mitigate the spread among asymptomatic and untested persons, social distancing can be implemented during daily functions. This may include telework and distancing between persons required to be at a single location
5. **Cleaning and Disinfection** – To mitigate the spread via surfaces and objects, use of effective cleaning solutions can be utilized congruent with health department recommendations.
6. **Personal Protective Equipment** – Face coverings help to mitigate human-to-human transmission, which is the most likely mode of transmission for most pathogens.

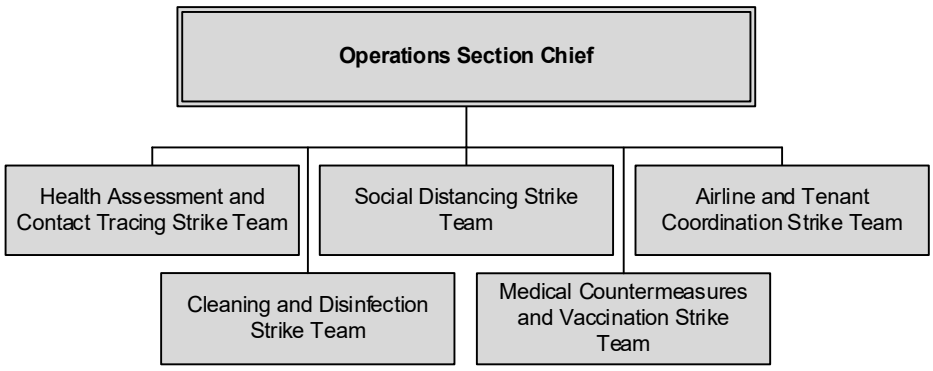
These interventions, supported by risk communication and education programs, are consistent with established best practices and serve as the primary means of pathogenic exposure control when pharmaceutical countermeasures (e.g., medications or vaccinations) are not available. In addition to the command and control concepts detailed in Section 2.1, this operational approach addresses the known measures needed to control exposure and adjust to changing conditions.

2.2.1 Operations Section

The general function of each ICS position is similar regardless of the type of incident, with the exception of the Operations Section. Operational response to a communicable disease event at an airport requires customized functions. The Operations Section structure provided in Figure 2-4 accommodates this and uses strike teams to support functions that may be required during a communicable disease event at an airport.

[10] Appendix C2 is adapted from an amendment used by Portland International Airport during the COVID-19 pandemic.

Figure 2-4. Operations Section for Communicable Disease Response



Under this structure, the Operations Section Chief commands strike team leaders for each of the strike teams identified below. In addition to the strike team functions, all strike teams should assist in enforcement of PPE requirements, particularly face coverings and masks.

- **Social Distancing Strike Team** – This strike team supports exposure control via social distancing in common areas and ground transportation. Social distancing can occur in several ways including:
    - Physical distancing markers – Use of signs and signifiers of appropriate distance in queues
    - Separating populations – Redefining layouts and functions to maintain separation between the public and personnel and/or between airport personnel
    - Minimizing contact – Use of barriers and contactless technology to eliminate or minimize contact between people and surfaces

  Recommended procedures and considerations for the Social Distancing Strike Team are described in Section 3.1.
- **Health Assessment and Contact Tracing Strike Team** – This strike team may support airport stakeholders in performing health assessments of passengers and personnel (questionnaires, temperature screening, or pathogen-specific testing). In addition, while contact tracing of passengers is generally conducted by public health agencies at the local, state, and federal levels, in some cases, localized contact tracing among airport employees can be used to identify and isolate those who have potentially been exposed to the pathogen. Procedures for health assessment and contact tracing are described in Section 3.2.
- **Cleaning and Disinfection Strike Team** – This strike team maintains information regarding effective pathogen-specific cleaning and disinfection methods for personnel and surfaces throughout the airport, and for implementing effective strategies through resource acquisition, training, and quality control. Procedures for cleaning and disinfection are described in Section 3.3.
- **Medical Countermeasures and Vaccination Strike Team** – This strike team provides logistical support to healthcare workers and providers in their efforts to deploy medical countermeasures (e.g., medications and vaccinations). Procedures to support medical countermeasure distribution are described in Section 3.4.
- **Airline and Tenant Coordination Strike Team** – This strike team coordinates airline and tenant resource needs, assesses concerns, and enforces measures implemented by the airport to support exposure control and safe operations. This team may be asked to communicate and reinforce airline- and tenant-focused recommendations. Procedures to support this strike team are described in Section 3.5.

In addition to these customized positions and functions within the Operations Section, communicable disease response may require special considerations for each of the command staff officers as summarized in the sections below.

2.2.2 Safety Officer

Particularly during response to a novel or unknown pathogen, the airport's assigned Safety Officer should maintain current information regarding PPE, including safe and effective eye, hand, and respiratory hygiene and other safety measures. While most response operations have critical safety needs, communicable disease events are unique. For point source scenarios, knowledge of the pathogen will be limited and universal precautions against exposure should be employed.

During a novel pathogenic outbreak scenario, knowledge is likely to advance rapidly, which may have dramatic impacts on effective safety measures as studies progress. It is also important for the Safety Officer to monitor press releases for information, keeping in mind that they may not be entirely accurate, and to relay appropriate information to the Incident Commander for communication throughout the response organization. The Safety Officer is generally responsible for implementing procedures set forth in Section 3.6, Personal Protective Equipment, and should monitor conditions throughout the airport to identify emerging safety issues and compliance shortfalls.

2.2.3 Liaison Officer

While the general functions of the Liaison Officer are similar to other response operations, during a communicable disease event (particularly a pandemic), the Liaison Officer is likely to interact with agencies typically not involved in other types of emergencies. Establishing liaison with the LEMA and LPHA is vital for understanding state and local health protocols pursuant to the pathogen of concern. It is possible that local, state, and/or federal officials may have conflicting priorities or points of emphasis. It is important to identify those potential conflicts as early as possible and elevate them to the Incident Commander and Executive Group to adjudicate discrepancies in policies.

In addition to the traditional Liaison Officer roles identified in the ICS, communicable disease scenarios can benefit from pre-established relationships with aviation sector associations and peer airports to exchange information and discuss lessons learned. Throughout the response to COVID-19, airports benefited greatly from use of peer-to-peer coordination and association forums to identify effective measures for exposure control throughout the travel continuum.

For response to point source scenarios, tactical operations are likely to be short in duration and the Liaison Officer's role may be limited.

For longer duration or large scale events, airports may wish to create a specialized Communicable Disease Coordinator role to monitor disease-specific information from aviation, government, and health organizations. This position provides a single point of contact for relevant information and coordination, thereby reducing duplication of efforts, misinformation, and multiple communication channels. A minimum of two individuals assigned to this role is recommended to allow for multiple shifts. During Phase 1 focus groups, airports identified this position as valuable in maintaining and understanding the latest research and tactical measures.

2.2.4 Public Information Officer

As with the Safety and Liaison Officers, Public Information Officer (PIO) duties during an epidemic or pandemic require extra attention to local, regional, state, national, and international conditions. Public information regarding the status of flights, protective requirements, and other disease and operational information is likely to change more frequently than in other types of emergencies.

Effective implementation and maintenance of exposure control measures among passengers requires outward messaging to the general public regarding how the communicable disease event is affecting airport operations and flights. Procedures and issues discussed in Section 3.7, Risk Communications, apply to PIO functions.

2.3 Termination and Recovery

When communicable disease operations can be discontinued and normal operations can be resumed within airport facilities, response operations are officially terminated by the Incident Commander, in consultation with the Executive Group as needed. Termination and recovery activities include:

- Returning all assets to their proper locations and restocking perishable items used during response operations
- Obtaining inspections and/or certifications that may be required before facilities can be returned to service (e.g., for assets that may have been used to support testing, medication/vaccine distribution, or other response activities)
- Identifying permanent operational changes that may be implemented as a result of the incident, and ensuring impacted staff members are trained in those changes
- Documenting and compiling applicable records of response operations for permanent storage
- Conducting a review of response activities, including all responders and stakeholders, drafting an AAR/IP, and holding an After-Action Conference consistent with guidelines set forth in HSEEP[11]
- Conducting targeted public outreach to establish public expectations of the recovery transition timeline and any permanent operational changes
- Updating training programs, the CDRRP, and other SOPs as needed, based on lessons learned during response operations

Additional information regarding recovery is provided in Section 6.

[11] Homeland Security Exercise and Evaluation Program, U.S. Department of Homeland Security, January 2020, https://www.fema.gov/sites/default/files/2020-04/Homeland-Security-Exercise-and-Evaluation-Program-Doctrine-2020-Revision-2-2-25.pdf

SECTION 3: TACTICS FOR COMMUNICABLE DISEASE RESPONSE

This section builds on the organizational model described in Section 2 to provide tactics for pathogenic exposure control and safe operations. The details provided support tactical implementation of the strike teams described in Section 2.2.1, and provide procedural support for response operations.

The tactics described below are intended to be used in a layered approach to maximize exposure control and minimize the spread of a communicable disease. Generally, the probability of contracting a communicable disease is governed by three primary factors: 1) Duration of exposure; 2) Distance between people who may be infected; and 3) Dose or amount of viral loading conveyed in a particular area. The measures described are intended to address these factors, not as individual components but as a collective program of exposure control.

3.1 Social Distancing

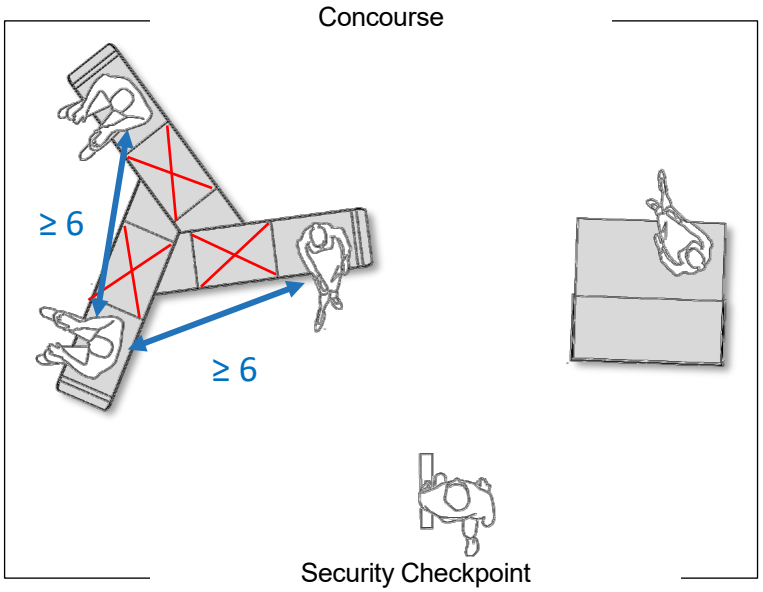
Social distancing and minimizing contact are vital exposure control measures. The methods of social distancing summarized below are also addressed in the Social Distancing Checklist in Appendix C3, which can be used by the Social Distancing Strike Team to implement, maintain, and enforce social distancing concepts upon activation of a CDRRP.

3.1.1 General Social Distancing Measures

Guidance and health advisories for COVID-19 and other pathogens indicate the following general social distancing measures:

- Help people to stay socially distanced in shared spaces via appropriate measures such as floor markings, blocking terminal or gate area seating, and placing seating the proper distance apart (Figure 3-1).
- Use measures that support maintaining six feet of distance between families/social units.
- Use similar strategies for ground transport (trains, buses, etc.).
- Inform passengers when it may not be possible to meet social distancing expectations, and emphasize the importance of observing other preventive measures, including strict hand hygiene, respiratory etiquette, and wearing a face mask.

Figure 3-1. Social Distancing Concept



The CDC and other public health authorities recommend a minimum social distance of six feet for limiting spread of COVID-19 as well as other pathogens. It is important to follow health authority guidelines for specific pathogens.

3.1.2 Separating Populations

In addition to social distancing, separating airport workers from the general public, when possible, reduces the likelihood of exposure. Measures include:

- Expediting air crews and aviation workers through shared screening areas, separate from the general public
- Providing separate on-airport transport options
- Requiring use of masks, particularly when it is not possible to maintain the recommended six-foot distance between persons

3.1.3 Minimizing Contact

In cases where airport workers and the traveling public must interact, measures to reduce exposure potential include:

- Minimizing document exchanges between passengers and aviation workers; for example, contactless, electronic document exchanges may be enabled during check-in, at the screening checkpoint, and when boarding aircraft.
- Installing barriers to maintain separation between passengers and aviation workers, and requiring workers to wear face coverings and gloves when touching or transferring passenger items such as baggage, documents, money, and credit cards.
- Discouraging sharing of pens and other writing implements.
- Providing workers with easy access to a sufficient supply of new gloves and hand sanitizer, and requiring hand sanitizing after glove removal.

3.1.4 Common Areas and Ground Transportation

Recommendations to facilitate social distancing in specific common areas are summarized below:

- **Concessions, Shopping, and Restaurants:**
  - Enforce social distancing at counters, tables, and in public areas.
  - Implement increased cleaning of high-touch areas.
  - Install acrylic transmission barriers at cashier counters.
  - Limit contact points and encourage contactless payment.
  - Offer PPE items for sale at retail shops.
  - As needed, limit hours of operation to reduce exposure.
  - As needed, temporarily close underutilized venues to reduce exposure.
  - Follow capacity limits based on local and state guidelines.
  - Comply with all other local and state health requirements and guidelines.
- **Contactless Check-in:**
  - Encourage use of online check-in options to reduce use of kiosks or ticket agent interactions.
  - Install barriers to maintain social distance when passengers must consult with ticket agents.
  - Enforce use of gloves among agents and others when touching passenger documents.

  - Enforce use of masks among agents and other public workers, even if behind barriers.
  - Encourage participation in DHS biometrics and seamless and touchless passenger facilitation programs to increase contactless check-in and passenger flow.

- **Airport Security Checkpoints:**
  - Promote use of digital boarding passes and biometrics when feasible.
  - Promote increased allowances (up to 12 fl. oz., increased from 3.4) of hand sanitizer in passenger education materials and signage.
  - Work with the TSA to promote new practices in passenger education materials and signage, including PPE requirements for Transportation Security Officers (TSO) and passengers, use of acrylic shield barriers, increased separation from passengers, new screening procedures to limit touching of passengers, enforcement of PPE and social distancing requirements, updated training and safety guidance, and increased cleaning of high-touch surfaces.
  - Support passenger metering through the checkpoint by directing traffic and enforcing distancing between passengers and TSOs at all stages of the security screening process.
  - Work with TSA to promote practices to minimize wait times in passenger education materials.
  - Work with TSA to adopt and promote new technologies in passenger education materials and signage. New checkpoint technologies include continued deployment of Credential Authentication Technology (CAT) units that minimize touch during passenger travel document check.
- **Baggage Claim:**
  - Prohibit access of persons waiting for arriving passengers in the baggage claim area unless special accommodations are needed.
  - Use signage and floor markings to reinforce procedures.
- **Ground Transportation:**
  - Work with rental car and taxi companies to implement low and no-touch operations, including advance check in and curbside service.
  - Use passenger spacing strategies (e.g., floor marking, blocking seats) to encourage social distancing while queuing for and traveling on airport ground transport.
  - Regulate passenger loads and increase the number of transport vehicles in use to reduce the passenger volume for each vehicle, if possible.

3.2 Health Assessment and Contact Tracing

Historically, pandemic planning in the U.S. has been premised on the authority of the CDC and state and local health officials to perform pathogen-specific testing or other forms of health assessment to diagnose or presume illnesses resulting from a pathogen of concern. Testing and/or health assessments lead to additional steps for exposure control, including contact tracing and public health measures such as isolation, quarantine, social distancing, cleaning and disinfection, use of PPE, and other medical and non-medical countermeasures.

Prior to the COVID-19 pandemic, airport-driven health assessments had not been fully contemplated. Lessons learned to date suggest that further research and political consideration are needed regarding the role of airports in supporting public health and medical functions relative to infectious disease response. This section discusses procedures to support health assessment and contact tracing in the travel

continuum. Implementation of these procedures requires resources and approvals from entities outside of most airport authorities. Coordination with the LPHA, LEMA, and elected and appointed officials is recommended prior to implementing health assessment or contact tracing measures. Primary measures described herein include:

- **Health Attestations** – Health attestations, or Traveler Health Declarations (THD), are questionnaires that qualitatively assess the potential carrier status of a traveler based on recent travel destinations and current reported health.
- **Symptom Screening** – For many communicable diseases, symptom screening focuses on taking the subject's temperature, but other measures such as visual observation and pulse oximetry have also been used.
- **Pathogen-Specific Testing** – For novel pathogens, specific tests are not likely to be immediately available, and when they are, the initial testing may lack accuracy and will be in short supply. As tests are further developed, or if they are immediately available, pathogen-specific tests can be very helpful to support health screening in an airport environment.
- **Contact Tracing** – As a secondary screening tool, contact tracing is used to identify and notify people who have been in contact with or are presumed to have a communicable disease based on public health guidance.

Each of these measures is described below. In addition, tools to support health assessment and contact tracing are provided in Appendix C4.

3.2.1 Health Attestations

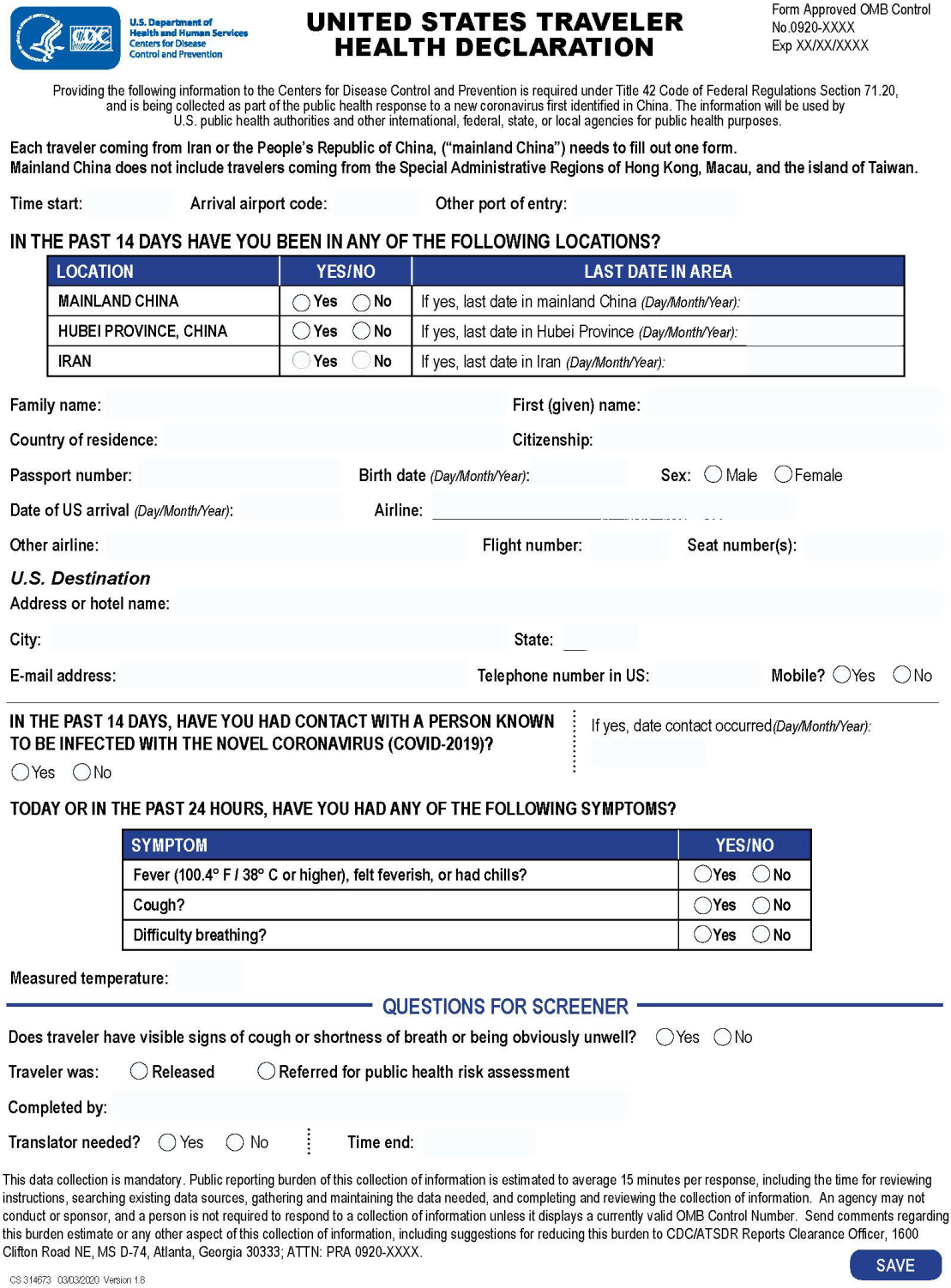
The United States has utilized pathogen-specific THDs to affirm passenger health. Generally, government-mandated THDs are an airline responsibility. The following guidelines apply:

- THDs are meant to reinforce the expectation that passengers will not travel when ill or at a higher risk of developing and/or spreading a communicable disease.
- THDs should be presented at the earliest opportunity at check-in, and should require the passenger to affirm awareness and willingness to follow required measures while on the aircraft (mask use, following crew instruction, etc.).
- THDs should reference exposure to a person or persons with a communicable disease in the past 14 days.
- It is recommended that passengers who identify themselves unfit to fly through this process should be allowed to rebook without penalty.
- Airlines should provide passengers with information on health safety requirements at their destination.
- Passengers should be directed to check local, state, and/or national websites of their travel destination to determine what requirements or restrictions are in place for arriving passengers so they can plan appropriately.
- Airports should provide information in their exit areas regarding local requirements per LPHA guidance.

Health attestations have weaknesses. For many communicable diseases, people may be asymptomatic for a period of time. In addition, health attestations or THDs rely on the passenger to recollect and provide accurate information. For these reasons, health attestations should be viewed as one tool to perform health assessment and should be used with other measures if possible. An example of a health

attestation form is provided in Figure 3-2.[12] To the extent feasible, health attestation forms should be specific to the communicable disease event with respect to the pathogen of concern, symptoms, geography, and other factors.

Figure 3-2. CDC Traveler Health Declaration Form



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

UNITED STATES TRAVELER HEALTH DECLARATION

Form Approved OMB Control No.0920-XXXX
Exp XX/XX/XXXX

Providing the following information to the Centers for Disease Control and Prevention is required under Title 42 Code of Federal Regulations Section 71.20, and is being collected as part of the public health response to a new coronavirus first identified in China. The information will be used by U.S. public health authorities and other international, federal, state, or local agencies for public health purposes.

Each traveler coming from Iran or the People's Republic of China, ("mainland China") needs to fill out one form.
Mainland China does not include travelers coming from the Special Administrative Regions of Hong Kong, Macau, and the island of Taiwan.

Time start: Arrival airport code: Other port of entry:

IN THE PAST 14 DAYS HAVE YOU BEEN IN ANY OF THE FOLLOWING LOCATIONS?

LOCATION	YES/NO	LAST DATE IN AREA
MAINLAND CHINA	◯ Yes ◯ No	If yes, last date in mainland China *(Day/Month/Year)*:
HUBEI PROVINCE, CHINA	◯ Yes ◯ No	If yes, last date in Hubei Province *(Day/Month/Year)*:
IRAN	◯ Yes ◯ No	If yes, last date in Iran *(Day/Month/Year)*:

Family name: First (given) name:

Country of residence: Citizenship:

Passport number: Birth date *(Day/Month/Year)*: Sex: ◯ Male ◯ Female

Date of US arrival *(Day/Month/Year)*: Airline:

Other airline: Flight number: Seat number(s):

U.S. Destination

Address or hotel name:

City: State:

E-mail address: Telephone number in US: Mobile? ◯ Yes ◯ No

IN THE PAST 14 DAYS, HAVE YOU HAD CONTACT WITH A PERSON KNOWN TO BE INFECTED WITH THE NOVEL CORONAVIRUS (COVID-2019)?

◯ Yes ◯ No

If yes, date contact occurred *(Day/Month/Year)*:

TODAY OR IN THE PAST 24 HOURS, HAVE YOU HAD ANY OF THE FOLLOWING SYMPTOMS?

SYMPTOM	YES/NO
Fever (100.4° F / 38° C or higher), felt feverish, or had chills?	◯ Yes ◯ No
Cough?	◯ Yes ◯ No
Difficulty breathing?	◯ Yes ◯ No

Measured temperature:

QUESTIONS FOR SCREENER

Does traveler have visible signs of cough or shortness of breath or being obviously unwell? ◯ Yes ◯ No

Traveler was: ◯ Released ◯ Referred for public health risk assessment

Completed by:

Translator needed? ◯ Yes ◯ No Time end:

This data collection is mandatory. Public reporting burden of this collection of information is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB Control Number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC/ATSDR Reports Clearance Officer, 1600 Clifton Road NE, MS D-74, Atlanta, Georgia 30333; ATTN: PRA 0920-XXXX.

SAVE

CS 314673 03/03/2020 Version 1.8

[12] **CDC.gov:** https://www.reginfo.gov/public/do/DownloadDocument?objectID=99315701

3.2.2 Symptom Screening

Guidance and lessons learned from the COVID-19 pandemic are useful in considering symptom screening protocols in airports and throughout the travel continuum. It is important that symptom screening measures follow available public health guidance and are specific to the pathogen of concern. Specific guidance is provided below:

- A symptom and health screening algorithm should be used that is specific to the pathogen of concern and developed by or with input from the LPHA or other public health authority.
- While temperature screening is a common parameter for a variety of communicable diseases, it should not be relied upon as a standalone public health measure.
- Temperature screening may serve as a general deterrent for passengers who may have otherwise considered traveling when ill.
- Any pre-travel health screening of passengers should be conducted in accordance with relevant health authority protocols, and should not create significant passenger flow delays or crowding, which can create additional exposure risks.
- Health screening should include the passenger health attestation, and may include visual observations conducted by trained health professionals.
- Health screening could occur upon arrival at the airport well in advance of the security checkpoint.
- If an airport, airline, or other authority decides that it will bar those with symptoms from flying, the policy should be transparent and posted in advance, and all passengers should be directly notified of the policy before deciding whether they will attempt to fly.
- The policy should note that a health assessment does not necessarily verify that a person does or does not have a communicable disease.
- Persons with chronic health issues that result in elevated body temperature should not be blocked from air travel if their illness does not threaten public health and they can provide appropriate medical documentation.

Pulse oximetry is another non-invasive test that may serve as a broad indicator of health status, when used in consultation with public health professionals. Absent a pathogen-specific test, health parameters such as temperature and pulse oximetry combined with health attestation can be an alternative health screening method. Appendix C4-1 provides a Symptom Screening Flow Diagram with steps that can be customized for specific communicable diseases. Stations for symptom screening should be located prior to ticketing, and screening algorithms should be customized for the communicable disease of concern.

3.2.3 Communicable Disease Testing

If available, disease-specific testing is the best method to screen positive passengers out of the flight queue and control exposure throughout the air travel continuum. Widespread testing provides an opportunity to restore confidence of the traveling public. However, it also presents logistical challenges for airport and airlines. Challenges include the availability of test kits, accuracy of testing, and timing of results. Consultation with the LPHA is recommended to facilitate safe, effective, and efficient testing. Testing considerations include:[13]

[13] Communicable Disease Testing Procedures developed based on input from San Francisco International Airport, Los Angeles International Airport, and Hartsfield-Jackson Atlanta International Airport.

- Some travel destinations may require evidence of a negative test as a prerequisite for entry or relief from other restrictions.
- Reliable and timely testing prior to departure may help facilitate domestic and international travel. Procedures and requirements for testing should be communicated to travelers ahead of time.
- Generally, testing capacity in airport settings can range from 100–1,000 tests per day or 40–50 tests per hour. Public health models for mass distribution and treatment should be consulted to support expedited testing.
- Use of a reservation system for testing is recommended. For COVID-19 testing, average wait times at various testing locations ranged from 3–45 minutes during peak times.
- Different test types may have a wide range of wait times for results (e.g., 15–60 minutes or 24–48 hours). Generally, rapid tests are less accurate.
- Optimal testing sites include parking lots and garages, and pre-security public areas. Indoor locations require consideration for social distancing and ventilation.
- Results should be reported electronically to reduce contact and support patient privacy.
- Administration of testing may occur through a private health organization, state or local health department, third-party contractor, air carrier, or concessionaire.
- Procedures for positive tests include:
    - Initiate contact tracing, which should be conducted by qualified personnel from the LPHA or other entity.
    - Segregate passengers who test positive and provide them with information regarding medical transport and treatment as needed.
    - Notify the LPHA, LEMA, CDC, and other airport stakeholders.

A Communicable Disease-Specific Testing Checklist is provided in Appendix C4-2.

3.2.4 Contact Tracing

Contract tracing is a vital public health function during a communicable disease outbreak. In concert with health screening and/or testing, contact tracing supports identifying people who may have been exposed to a communicable pathogen to achieve three primary goals:

1. Identifying people who should be tested (if a test is available)
2. Identifying people who may require treatment
3. Identifying people who should be isolated

Broad contact tracing requires training and can be an arduous process. It is typically performed by epidemiologists and public health officials equipped with the proper tools. However, airports and airlines may find it useful to conduct contact tracing among employees, particularly in a pandemic scenario. Guidance specific to the airport environment is provided below.

AIRLINES

Contact tracing requirements for airlines—which during the COVID-19 pandemic applied to international flights only—is summarized below:

1. **International Departures** – Prior to international flight departures, airlines collect passenger and crew contact information and disseminate it to destination health authorities to support public health mitigation measures.

2. **International Arrivals** – The following information is collected from passengers on arriving international flights:
    a. Name
    b. Address while in the U.S.
    c. Email address
    d. Primary and secondary telephone numbers

3. **Dissemination** – Provide information to the U.S. Government in electronic format within 24 hours of an order by the CDC Director.

The data collection described above was implemented specifically for the COVID-19 pandemic. However, the information requests are standard for health-related travel protocols and may be requested for other communicable disease scenarios.

AIRPORT PERSONNEL

While contact tracing in the general public should be performed by public health officials, contact tracing among transportation workers at an airport may be valuable as a method of maintaining the health and safety of frontline employees. Combined with health screening and/or testing, contact tracing can be used to isolate potentially exposed employees during the established incubation time, which will vary among pathogens.

If using contact tracing in an airport, it is recommended that frontline supervisors support contact tracing within their own crews to minimize the number of personnel that any single person has to monitor. Supervisors also typically understand workflows and probable exposures should an employee test positive or present with symptoms. Frontline working groups for whom contact tracing may be beneficial include ARFF, law enforcement, paramedics and EMS, maintenance, operations, badging, and other staff who cannot work remotely.

A contact tracing form designed for use among airport employees is provided in Appendix C4-3. Consultation with the LPHA is recommended before using this form, as it may require customization for specific pathogens.

DIGITAL CONTACT TRACING TOOLS

Manual contact tracing requires extensive resources and human capital. During the COVID-19 pandemic, both public and private organizations developed mobile applications (apps) for contact tracing. These apps rely on a range of technologies such as WiFi, Bluetooth, and GPS to track individuals who have come in close contact with identified COVID-19 patients. Google and Apple partnered to develop a framework that provides privacy for the users and contact tracing information for public health authorities. These apps do not collect location data or share user identities. The effectiveness of contact tracing programs increases as more people agree to participate.

While many systems and vendors are available, the two primary types of technology that can support the contact tracing process at airports are electronic case management tools and Proximity Tracing and Exposure Notification (PTEN) tools.[14]

Electronic case management tools expedite contact tracing by streamlining the capture and management of patient and contact data, and integrating workflows with surveillance systems or other workforce

[14] Digital Contact Tracing Tools, Centers for Disease Control and Prevention, accessed November 22, 2022, https://www.cdc.gov/coronavirus/2019-ncov/php/contact-tracing/contact-tracing-plan/digital-contact-tracing-tools.html

management tools. These tools improve the efficiency of contact tracing and medical monitoring. Case management tools are used in coordination with the LPHA and generally have the following capabilities:

- Facilitate data security and confidentiality of passenger information to maintain trust and support participation
- Provide interoperability to receive input from a variety of sources including local, state, and federal public health authorities
- Document known contacts of passengers with a communicable disease via manual entry and self-reporting
- Communicate with users (passengers and contacts) via manual and/or automated means to:
    - Notify contacts of their exposure and a time window for when exposure may have occurred
    - Survey passengers and contacts regarding symptoms
    - Provide clear instructions on how to monitor symptoms and health status and guidelines for reporting
    - Provide public safety messages to identified contacts and educate them about the pathogen, common signs and symptoms, and prevention strategies (e.g., self-quarantine, social distancing)
- Send notifications in multiple formats such as voice messages, emails, and text
- Facilitate appropriate follow-up for presence of symptoms and health status

PTEN tools identify more contacts than traditional contact tracing alone using opt-in tools. PTEN tools typically use Bluetooth or GPS to estimate the proximity and duration of exposure to patients diagnosed with a communicable disease. Mobile device applications can alert a large number of people who have been in the vicinity of an individual experiencing symptoms of a communicable disease.

Together, case management and PTEN tools can provide expedient and effective contact tracing functions, including patient identification and follow-up, contact identification, contact notification, and contact follow-up.

3.3 Cleaning and Disinfection

While respiration is the primary means of communicable disease transmission, transference from surfaces to the hands and face also serves as a mode of pathogenic transmission. Procedures provided below are intended to be used for routine cleaning, cleaning when known exposure has occurred, and to support general hygiene among employees and travelers.

To support consistent and effective cleaning and disinfection, a Cleaning and Disinfection Process is provided in Appendix C5 and includes a Cleaning and Disinfection Checklist (C5-1) and a Cleaning and Disinfection Log (C5-2) to enable documentation of cleaning activities. In addition, a checklist in Appendix C5-3 provides recommendations for heating, ventilation, and air conditioning systems to reduce exposure to airborne pathogens. The Cleaning and Disinfection Strike Team Leader should use the materials in Appendix C5 to develop and maintain an operational plan during communicable disease or pandemic response.

3.3.1 Personal Hygiene

As the primary pathogenic source, cleaning and disinfection should begin with people. It is important to practice effective hand washing using soap and water for at least 20 seconds. Hand sanitizer containing at least 60% alcohol may also be used. However, because hand washing is generally considered more effective than hand sanitizer, hand sanitizer should only be used when hand washing is not possible or practical.

Wall-mounted hand sanitizer dispensers are recommended throughout airports and particularly near building entrances, bathrooms, and high-traffic areas. Risk communications should also advise people to avoid touching their eyes, nose, and mouth with unwashed hands. The CDC maintains current information regarding handwashing and personal hygiene.[15]

3.3.2 Routine Cleaning and Disinfection

Airports and airlines should require all areas with potential for human contact and transmission to be disinfected per defined schedules as recommended by the CDC. Other best practices also suggest the need for hand sanitizer stations and disinfecting wipes in common areas where passengers frequently touch surfaces. In addition, special attention should be given to increasing the frequency of cleaning high-touch surfaces such as door handles, armrests, elevator buttons, escalator and stair handrails, and kiosks. Procedures for routine cleaning include:

- **Basic Elements:**
  - Wear disposable non-fabric gloves (e.g., latex, nitrile) and follow PPE guidelines defined in the Safety Plan.
  - Clean prescribed areas on a regular schedule using detergent or soap and water as appropriate for surfaces and finishes.
  - Use an EPA-registered disinfectant[16] in accordance with the manufacturer's directions, and wear additional PPE as suggested by the manufacturer.
  - Following initial cleaning, disinfect all high-contact solid surfaces in the area, including but not limited to handrails, door knobs and push plates, desks and work surfaces, keypads, computer mice, light switches, elevator buttons, bathroom sinks, toilet and paper dispensers, kitchenette countertops, and water cooler controls. Allow the disinfectant to remain on surfaces until air dry.
- **Kiosks:**
  - Provide hand sanitizer stations and disinfecting wipes nearby.
  - Clean kiosks frequently with a disinfectant approved for the pathogen of concern.
- **Ground Transportation:**
  - Work with rental car agencies and taxi services to implement sanitizing measures in vehicles with special attention to high-touch areas.
  - Require fogging of vehicles on a daily or periodic basis as needed.

[15] **CDC.gov:** https://www.cdc.gov/handwashing/when-how-handwashing.html
[16] **EPA.gov:** List N tool: COVID-19 Disinfectants: https://cfpub.epa.gov/wizards/disinfectants/
List Q: Disinfectants for Emerging Viral Pathogens: https://www.epa.gov/pesticide-registration/disinfectants-emerging-viral-pathogens-evps-list-q

3.3.3 Post-Exposure Cleaning and Disinfection

Areas where exposure is known to have occurred should undergo immediate cleaning and disinfection using EPA-registered disinfectants. Post-exposure cleaning and disinfection should occur under the following circumstances:

- Cases of a communicable disease are confirmed or assumed-confirmed.
- Symptomatic individuals have traveled recently (within 14 days) to a location of a known outbreak.
- Symptomatic individuals have been in direct contact with a person who is confirmed to be infected with a communicable disease.

Post-exposure cleaning and disinfection procedures include:

- Any area meeting post-exposure criteria should be emptied of occupants and closed for up to 24 hours, as determined in consultation with the LPHA.
- Perform cleaning and disinfection using products that are EPA-registered or approved, and as directed by the product's manufacturer for the surface type.[17]
- Wear PPE as appropriate for the specific cleaners and disinfectants used. Safety glasses and disposable suits or gowns (e.g., Tyvek) may be required in addition to non-fabric disposable gloves (e.g., latex, nitrile).
- Following closure of the area, open any available windows and doors to ensure adequate ventilation throughout the cleaning and disinfection period.
- Clean surfaces with detergent or soap and water.
- Following cleaning, disinfect by wiping solid surfaces in one direction. Surfaces may include handrails, door knobs and push plates, desk or work surfaces, keypads, computer mice, light switches, elevator buttons, bathroom sinks, toilet and paper dispensers, kitchenette countertops, water cooler controls, etc.
- Clean and disinfect all high-contact porous surfaces, such as carpets and partitions.
- All disinfectants should remain on surfaces until air dry.
- When cleaning and disinfection of the area is complete, remove and dispose of gloves and other PPE, being careful not to contaminate the wearer or other surfaces. Dispose of all used PPE and cleaning materials in a sealed plastic bag.

3.3.4 HVAC Systems

On October 19, 2021, the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) released the document, *Core Recommendations for Reducing Airborne Infectious Aerosol Exposure*, which provides guidance developed by the ASHRAE Epidemic Task Force to achieve exposure reduction goals using ventilation, filtration, and air cleaners. The checklist provided in Appendix C5-3, Ventilation, Filtration, and Air Cleaner Maintenance Checklist was developed based on the ASHRAE guidance, and can be used by the Cleaning and Disinfection Strike Team Leader to reduce airborne pathogen exposure.

[17] **EPA.gov:** List N tool: COVID-19 Disinfectants: https://cfpub.epa.gov/wizards/disinfectants/
List Q: Disinfectants for Emerging Viral Pathogens: https://www.epa.gov/pesticide-registration/disinfectants-emerging-viral-pathogens-evps-list-q

3.3.5 Cleaning and Disinfection During Recovery and Beyond

Restoring and maintaining confidence of travelers and other stakeholders during the recovery phase of a communicable disease outbreak may benefit from use of standards-based cleaning and disinfection practices. Beyond recovery, these standards-based practices may also be used to modify normal operating procedures to support ongoing reduction of exposure to communicable diseases among travelers and employees. Known standards-based programs to support cleaning and disinfection are described below:

- **Airports Council International (ACI) Airport Health Accreditation**[18] – ACI has developed the Airport Health Accreditation Program to provide an airport-centric approach to common health preparedness and prevention needs, including cleaning and disinfection. The program is intended to align with International Civil Aviation Organization (ICAO) recommendations and best practices.
- **British Institute of Cleaning Science**[19] – The British Institute of Cleaning Science provides an accredited training program for cleaning services that focuses on protecting individuals through provision of a clean and safe environment, preserving critical assets, promoting sustainability, and developing best practices for communicable disease–related cleaning and disinfection.
- **Global Biorisk Advisory Council (GBAC)**[20] – GBAC, a division of the International Sanitary Supply Association, offers the STAR Accreditation. GBAC STAR is a cleaning industry facility accreditation program for outbreak prevention, response, and recovery. The program is designed to help public and commercial facilities establish and maintain cleaning, disinfection, and infectious disease prevention programs to minimize risks associated with infectious agents and biohazards. GBAC STAR is a performance-based program that is based on quality management system principles such as ISO 9001.

Each of these programs provides tactical procedures to support cleaning and disinfection that are based on research and assessment of practical usability. Airports may publicize implementation of any of these standards-based programs to instill confidence in the traveling public.

3.4 Medical Countermeasures

Under severe epidemic or pandemic conditions, airport authorities may have a vested interest in providing medical countermeasures, such as vaccines, to facilitate business continuity. Moreover, government stakeholders may request support in receiving, staging, storing, and administering medical countermeasures. Considerations for logistics regarding medical countermeasures are provided below and address receipt, provision to employees, and distribution. Tools to support vaccine operations are provided in Appendix C6, Medical Countermeasures Checklists.

3.4.1 Receipt of Medical Resources

Many federal public health and emergency resources are transported via air and are configured for specific purposes, including mass care and treatment for diseases. As an example, the SNS, managed by the CDC, consists of various packs of medical resources and pharmaceuticals to be deployed in an

[18] **ACI.aero:** https://aci.aero/about-aci/priorities/health/aci-airport-health-accreditation-programme/
[19] **BICS.org.uk:** https://www.bics.org.uk/accredited-training-membership/
[20] **GBAC.ISSA.com:** https://gbac.issa.com/gbac-star-overview/

expedited manner to airports throughout the U.S. As such, airports can play a vital role in receipt of critical supplies during a pandemic or other medical emergency.

In recognition of the unique role of airport operators in transporting medical resources to the public, on December 11, 2020, the FAA released guidance to airport operators regarding COVID-19 vaccine transport. The guidelines are not directive, but present considerations that airport operators may find useful to prepare for an aircraft carrying medical resources to their airport. Planning considerations include:

- **ARFF Coverage** – Part 139–certified airports generally have adequate ARFF personnel and equipment for aircraft transporting medical resources. However, some aircraft used for medical resource shipment may be larger than aircraft used for passenger flights that typically serve an airport. Thus, an airport operator may opt to have extra ARFF coverage available for such flights.
- **Snow Removal** – If applicable, snow removal equipment and procedures to clear runways/taxiways for aircraft transporting medical resources should be considered. The airport operator may choose to have additional equipment and personnel available to assist with timely snow removal operations.
- **Parking Areas** – Adequate aircraft parking areas should be provided to support the types and numbers of aircraft involved (e.g., parking areas with sufficient pavement strength, clearance areas). Airport operators may want to coordinate with other users on the airport so that appropriate parking locations are available for medical resource transport aircraft when needed.
- **Air Traffic Control Tower (ATCT) Coordination** – Airport operators should work with local ATCT facilities before and during movement of any medical resources transport on the airfield. Alert ATC of any changes or modifications of medical supply logistics plans.
- **Law Enforcement Coordination** – Coordinate with the TSA, Customs and Border Protection (CBP), and/or local law enforcement as needed for:
    - Awareness of any credible threats to shipments
    - Extra security needs, including at vehicle and pedestrian gates
    - Minimizing customs clearance delays for shipments crossing international borders
    - Vehicular traffic control measures
    - Facilitating timely completion of any TSA or CBP, hazardous cargo, or security inspections that may be required
- **Priority Access** – Provide freight vehicles with priority access to the airfield to safely move shipments of medical resources off airport. Airport operators may consider landside vehicle control and a possible staging area for freight vehicles awaiting their cargo.
- **Media Response** – An airport operator may establish a media meeting area where updates regarding medical resources shipments can be provided to the press. Coordinate with relevant agency PIOs to support consistent messaging.
- **Airport Operations Staff** – Assess Airport Operations staffing needs to assist in managing transport of shipments (e.g., “Follow-Me” vehicles). Activate additional staff as needed.
- **Contingency Plans** – Identify backup measures in case the shipment cannot proceed according to the anticipated schedule. An airport operator may want to consider backup storage locations as well as aircraft parking and freight vehicle parking areas.

If an airport is requested to support medical resource staging and storage, facilities used for these operations should be isolated and secure. Specialized storage capabilities such as refrigeration may be

required and should be supported by the LPHA. A checklist for receiving medical resources is provided in Appendix C6-1.

3.4.2 Providing Medical Countermeasures to Airport Personnel

Under the NIPP, airports are designated as critical infrastructure. As such, workers who are vital to airport operations may be eligible to receive priority vaccination or medical treatment. To support priority provision of medical countermeasures, the first step is to establish priorities for vaccination among airport personnel based on criticality of functions to airport operations, exposure to the public, and ability to work remotely. The tiers below provide guidance for assigning priority:[21]

- **Tier 1 – Critical:** Personnel required to work on-site who maintain daily airport functionality and respond to immediate critical needs. This group may interact directly with the traveling public or other airport employees outside of their workgroup, or may be confined to a shared workspace with multiple colleagues.
- **Tier 2 – Forward Facing:** Personnel who work on-site (full time or hybrid) who interact directly with the traveling public or other airport employees. This tier may include employees working in a confined area with colleagues where an outbreak may easily occur.
- **Tier 3 – On-site, Limited Public Interaction:** On-site personnel who provide service to the traveling public or airport employees, but do not do so in a direct interaction or forward-facing environment.
- **Tier 4A – Operations and Regulatory Compliance (Work from Home):** Staff working exclusively at home who may have a regulatory or minimum facility operations responsibility.
- **Tier 4B – Tier 1 Staff Household Members:** Individuals who live within a Tier 1 employee's household.
- **Tier 5 – Non-Regulatory Off-site Personnel:** Staff able to perform the entirety of their job function off-site and who have no regulatory or minimum facility operations responsibilities.
- **Tier 6 – All Staff Household Members:** Household members of any airport employee.

Airport authorities should also coordinate with on-site federal partners (CBP, FAA, TSA, etc.) to determine if they should be included in prioritization tiers.

Once the airport-specific prioritization is established, Step 2 is to coordinate with the LPHA and LEMA to identify available medical countermeasures and establish distribution parameters. Points to consider in consultation with the LPHA and LEMA include:

- **Location of Point of Distribution (POD** – Coordinate POD options; if it is to occur at the airport, a drive-through model is recommended (see Section 3.4.3 for more details).
- **Coordinate Quantities** – Consult the tiered distribution model to establish the quantity of medical countermeasures needed and an approximate schedule.
- **POD Planning and Logistics** – Coordinate to identify personnel and resource needs.
- **Establish Responsibilities** – Identify POD positions and staff for training.
- **Training and Exercises** – Provide various types of training, including position-specific training (as needed) and just-in-time training (for greeters and non-medical staff); conduct a drill prior to beginning distribution of medical countermeasures to evaluate and improve the process.

[21] Adapted from *Airport COVID-19 Vaccine Closed Point of Dispensing*, Denver International Airport, January 5, 2021.

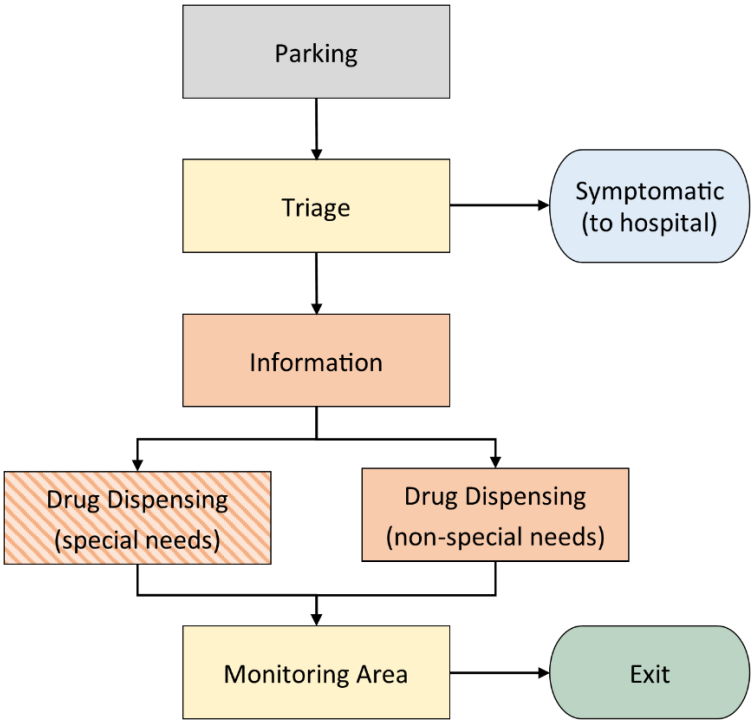
- **Employee Communications** – Provide employees with web links for updates and additional information, as needed; prior to mass notification of airport employees, validate messaging with the LPHA and LEMA.
- **Tracking and Privacy** – If possible, track distribution of medical countermeasures via existing human resource systems to maintain confidential records.
- **Staff Counsel** – Work proactively with human resources and staff counsel to address legal issues and any necessary waivers.
- **Language/Special Needs** – Address language barriers and accessibility needs.
- **POD Worker Priority** – Provide vaccinations to POD workers prior to POD activation.

Once plans are established and vaccine availability is confirmed, the next step is to communicate with employees and their supervisors to begin scheduling. A checklist to support planning for providing medical countermeasures to airport personnel is provided in Appendix C6-2.

3.4.3 Medical Countermeasure Point of Distribution

A drive-through POD model is preferred to support safety during an epidemic or pandemic, and offers a relatively simple method to distribute the greatest amount of medical countermeasures. A drive-through POD may use airport parking lots to distribute medical countermeasures to vehicle occupants pre-authorized to receive it. Staging areas will also be necessary to support material storage, registration, patient education, dispensing, and patient counseling. Bottlenecks and gaps may be created by not having an adequate flow pattern. A general POD flow diagram is provided in Figure 3-3.

Figure 3-3. POD Flow Diagram



Operational considerations are described below.

INITIAL OPERATIONAL CONSIDERATIONS

Parameters that support ease of operation, expedited distribution, and safety include:

- Require pre-registration and accept patients by appointment only.
- Pre-registration enables monitoring and planning for upcoming patient flow.
- Gather information during pre-registration to expedite processing.
- A separate process should be employed if subsequent doses are required or recommended.
- This model is dependent on weather conditions; consider shelter for staff and storage for equipment and medications.

TRAFFIC CONTROL

While pre-registration and appointments should improve traffic control, the following measures should also be considered to address vehicular traffic control:

- Traffic control points should be stationed at the beginning of the POD flow so that traffic can be routed to the proper entrance.
- Traffic control points should have signs directing patients to different lines depending on needs of the individuals in the vehicle (e.g., language, special needs).
- Traffic flow should be maintained at a pace that does not cause bottlenecks.
- Traffic control points should be stationed at the end of the POD flow to direct traffic to the monitoring area and exit.
- Provisions should be made for medical emergencies and for cars running out of gas.

DRUG STORAGE

Vaccines and other medications require special storage, which may include extreme refrigeration. While storage issues should be managed by the LPHA, the following considerations may be important to airport authorities:

- Drug storage needs are an important priority, and power, networking, and space needs must be accommodated
- Two types of storage are necessary:
  1) bulk supply storage away from traffic
  2) supplies for each station
- Security is necessary at all storage locations

TRIAGE

While risk communication should indicate to patients that they should not attend a POD if feeling ill, triage should be available. Medical personnel should be available to perform initial assessment for every vehicle, and procedures should be in place to ensure that symptomatic patients go to the nearest hospital.

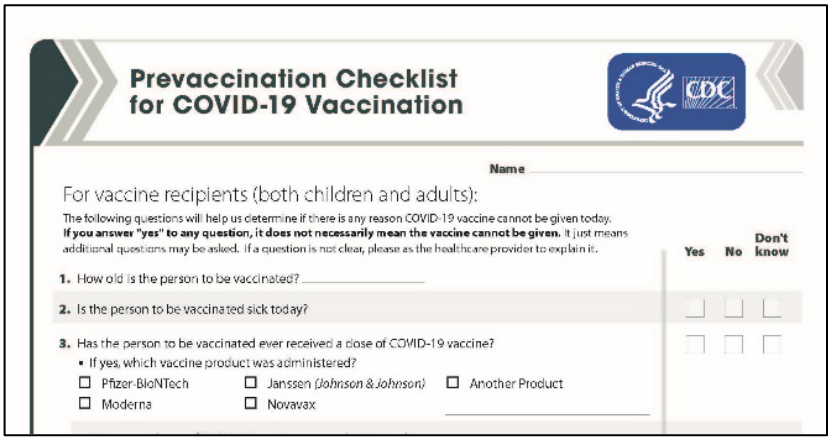
DRUG DISTRIBUTION

Drug distribution stations generally require completed pre-vaccination checklist forms, which may be similar to the example in Figure 3-4. Procedures for registration and drug distribution include:

- Pre-distribution checklists will be required from all recipients.
- Medication will be provided along with the drug information sheets.
- A pharmacist will be present to oversee the dispensing operation.

- Confidential logs may be kept on who received medication.
- Staff will review all documentation.
- Personnel will monitor those receiving medications for a specified period of time for onset of side effects or allergic response in accordance with LPHA guidelines.
- Security should be posted at each distribution station for crowd control.

Figure 3-4. Example Pre-Vaccination Checklist



Prevaccination Checklist for COVID-19 Vaccination

Name

For vaccine recipients (both children and adults):

The following questions will help us determine if there is any reason COVID-19 vaccine cannot be given today. **If you answer "yes" to any question, it does not necessarily mean the vaccine cannot be given.** It just means additional questions may be asked. If a question is not clear, please ask the healthcare provider to explain it.

	Yes	No	Don't know
1. How old is the person to be vaccinated? _____			
2. Is the person to be vaccinated sick today?	☐	☐	☐
3. Has the person to be vaccinated ever received a dose of COVID-19 vaccine?	☐	☐	☐

▪ If yes, which vaccine product was administered?

☐ Pfizer-BioNTech ☐ Janssen (Johnson & Johnson) ☐ Another Product

☐ Moderna ☐ Novavax _____

- The number of stations for drug dispensing will be dependent on the number of staff available.

PATIENTS WITH SPECIAL NEEDS

The POD should include plans to dispense medication to the following special needs groups:

- Physically disabled
- Chemically dependent
- Illiterate
- Frail elderly
- Sight impaired
- Hearing impaired

SECURITY

Security considerations include:

- All operations staff should be badged to clearly identify them and their access to specific areas and/or functions.
- Security should be posted at traffic control points to ensure that security issues do not arise between patients.
- Security should be posted at the triage area to prevent patients from bypassing the station.
- Security should be posted at all entrances and exits.
- Security should be posted near drug storage areas.
- Roving security patrols should be present throughout the POD to assist staff as needed.

SAFETY

Given the inherent risks of a communicable disease event, the following safety measures should be employed at PODs:

- Conduct just-in-time safety training for all volunteers based on LPHA guidelines.
- Ensure a plentiful supply of PPE, including high-visibility vests for those in high traffic areas.
- Do not transfer documents by hand.
- Ensure that appropriate types of waste disposal are available for PPE and contaminated articles.
- Interface with public health officials regarding safe handling of medications/vaccines.

GENERAL OPERATIONAL EQUIPMENT

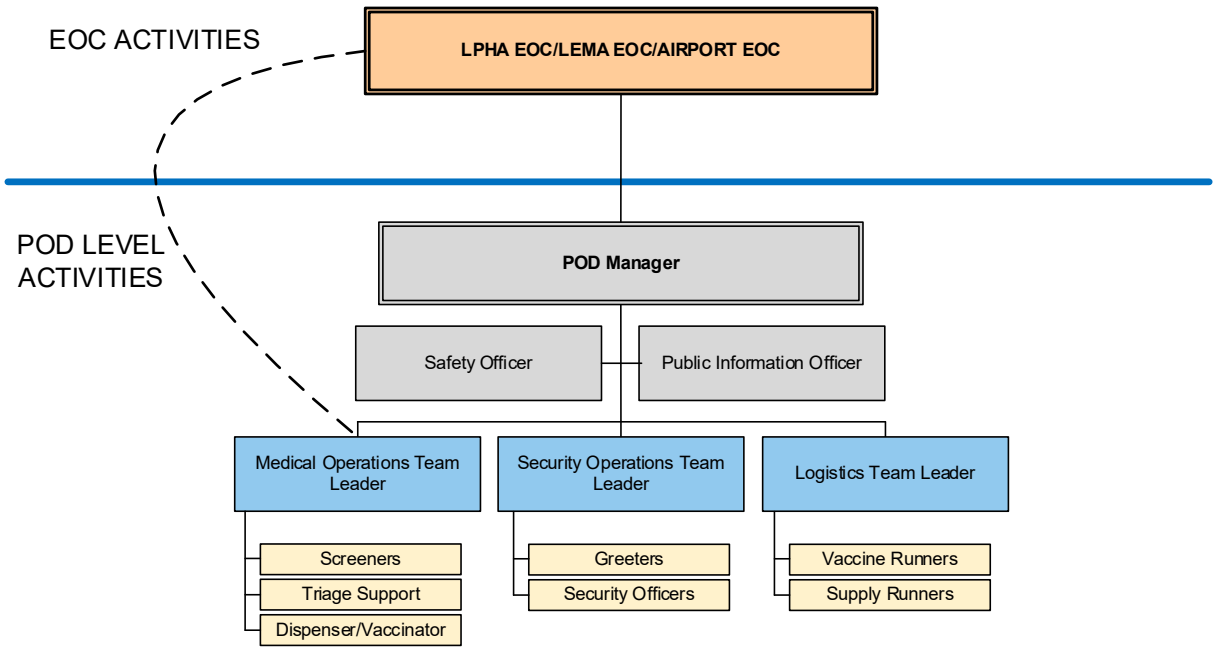
Operational equipment typically found at a POD is provided in the list below. The LPHA, LEMA, and/or healthcare providers should provide most of the equipment. Additional medication-specific needs, such as level of refrigeration, should be addressed on a case-by-case basis in accordance with manufacturer requirements. POD operational equipment generally includes:

- General information signs for the POD
- Triage signs directing people to appropriate lines
- Barriers to direct people into the triage area and entrance
- High-visibility vests for traffic control personnel
- Office supplies
- Public information sheets in multiple languages, including fact sheets on the communicable disease, and specific information sheets on medical conditions
- Communications equipment, including 2-way radios for internal communication, radios for communication with the EOC, and telephones
- Generators, exterior outlets for generators, exterior lights, flashlights
- Sanitation supplies, cleaning supplies, garbage cans, and biohazard bags
- Shelters, water, and coolers
- Reliable internet/Wi-Fi connection
- Dispensing supplies
- PPE – Masks, disposable gowns, disposable gloves
- Tables and chairs
- Fax machines, copier machines

STAFFING REQUIREMENTS FOR DRIVE-THROUGH POD

An example POD staff organizational chart is provided in Figure 3-5. The positions described in the chart support the functions described above, and allow for coordination with jurisdictional EOCs among health officials, emergency management, and airports.

Figure 3-5. POD Staff Organizational Chart



Based on the organizational chart above, Table 3-1 provides a staffing model to support POD operations. Coordination with the LPHA and LEMA will enable more precise determination of staffing needs.

Table 3-1. Staffing Model, Five Lane Drive Through POD[22]

POD Position	Staff Per Shift
POD Manager	1
Safety Officer	1
Public Information Officer	1
Medical Operations Team Leader	1
Screeners	5
Triage Support	5
Dispensers/Vaccinators	5
Translator	1
Security Operations Team Leader	1
Greeters	5
Security Officers	12
Logistics Team Leader	1
Vaccine Runners	5
Supply Runners	5
TOTALS	**49**

This staffing model may expand or decrease in number and scope depending on the size of the event and the limitations of the POD's physical area. A checklist for medical countermeasure distribution and POD operations is provided in Appendix C6-3.

3.5 Airline and Tenant Tactical Coordination

Preparedness guidance and lessons learned indicate the need for coordination between airport authorities, airlines, tenants, and passengers in support of communicable disease response. Information is provided below regarding opportunities for coordination and education, as well as assessment of ongoing exposure control measures to facilitate a safe environment for passengers and employees. Airport stakeholder coordination tools are provided in Appendix C7.

3.5.1 Airline Measures

Measures taken to control exposure to communicable diseases in airports have the best opportunity to be effective if they are applied consistently within the departure airport, throughout air travel, and at the destination airport. The recommendations below focus on airlines and measures taken on aircraft. They and summarized here as items that airport authorities may want to discuss with airlines to coordinate exposure control throughout the air transport continuum. Specific issues focusing on aircraft and airline operations include:

[22] Adapted from *Airport COVID-19 Vaccine Closed Point of Dispensing*, Denver International Airport, January 5, 2021.

SEAT ASSIGNMENT PROCESSES:

- Maximum risk reduction results from maintaining a social distance consistent with public health guidelines.
- Airlines should consider limiting seat availability to enable passengers to maintain social distance from each other during the flight.
- When social distancing cannot be practiced on a flight, passengers should be made immediately aware and be offered alternative flight options without penalty.
- If physical distancing is not achieved in flight due to passenger load, seat configuration, crew dead-heading, or other operational constraints, crew members should ensure that passengers onboard the aircraft adhere to all other preventive measures, including wearing masks, strict hand hygiene, and respiratory etiquette.

ADJUSTED BOARDING PROCESSES

- Airlines should board passengers in ways that reduce the likelihood of passengers having to pass or wait in close proximity to each other (e.g., board all window seats first, board from the back of the aircraft forward), as long as the boarding process is consistent with FAA weight and balance requirements.

LIMIT/SUSPEND ONBOARD CUSTOMER SERVICES

- Limit or discontinue food and beverage service on short-haul flights, or require dispensing in sealed, prepackaged containers.
- Suspend unnecessary in-flight services that require crew/passenger interactions, such as duty-free item sales.
- Continue to comply with disability access requirements such as providing boarding or deplaning assistance, on-board wheelchairs, assistance to the aircraft lavatory, and opening food packages for people with disabilities as needed.

SEGMENT LAVATORY ACCESS

- Designate passenger lavatory use based on seat assignment to limit cabin movement.
- Provide disinfectant wipes in lavatories for passengers and crew to wipe down high-touch surfaces before and after use.

PPE FOR CREW AND ILL PASSENGERS

- Ensure crew have adequate onboard PPE to mitigate communicable disease exposure.
- Equipment should include Universal Precaution Kits that contain adequate protection in cases of suspected communicable disease-related illness for both crew and passengers.
- Provide necessary PPE and training to enable crew to follow CDC guidelines for responding to a sick passenger with communicable disease symptoms:
    - Have protocols in place for isolating potentially ill passengers discovered during flight.
    - Train all crewmembers on those protocols.
    - Use additional standard procedures to prevent spread of diseases on commercial aircraft as described in CDC guidance.[23]

[23] **CDC.gov:** https://www.cdc.gov/quarantine/air/managing-sick-travelers/commercial-aircraft/infection-control-cabin-crew.html

ADDITIONAL CREW PROTECTIONS:

- Assigned crewmembers should provide service only to specific sections of the cabin to the maximum extent possible.
- To the extent consistent with FAA regulations, cabin crewmembers should be seated in passenger seats if necessary to improve social distancing.
- Crewmembers should not share equipment used for safety demonstrations without adequate sanitization.

DISEMBARKATION PROCEDURES:

- Airlines should prohibit passenger queueing in the aisle when departing the aircraft.
- Passengers should be required to stay seated until it is their turn to depart.

AIRCRAFT DISINFECTING:

- Airlines should ensure aircraft cabins are disinfected between each flight segment when passengers and/or crew change.
- Personnel should use appropriate PPE and cleaning supplies to clean frequently touched surfaces in the cabin between each flight, including the galley, arm rests, tray tables, screens, seatbelt buckles, etc.
- Lavatories must be cleaned between each flight.
- The flight deck should be cleaned between each crew change.
- Airlines should consult with aircraft manufacturers to ensure cleaning products and processes do not damage aircraft equipment.

CBP CLEARANCE (AS NEEDED)

Airlines and airports should work locally with CBP to support and promote the following measures:

- Separate passengers within the CBP queuing space to adhere to social distancing practices.
- Limit the number of passengers allowed into the Federal Inspection Station (FIS) area at any one time to the extent possible.
- Consider expanding existing facial biometrics capabilities for primary processing to limit the need to handle documents and to maintain separation between the public and officers.
- Consider expanding ways to verify traveler documentation to enable maximum social distancing.
- Streamline local processes and passenger flows for the rescreening of passengers with connecting flights.
- Develop necessary infrastructure changes to implement modified egress, enable installation of Plexiglas barriers at locations not currently available, and eliminate any potential choke points upon exiting the FIS area.
- Encourage participation in CBP's Global Entry program for crew and passengers, which provides expedited inspection and clearance, thereby reducing lines and congregation in the FIS area.
- Default to verbal customs declarations where appropriate.

An Airline Coordination Checklist is provided in Appendix C7-1.

3.5.2 Passenger and Personnel Education

Internal and external communications strategies should include education regarding proper travel etiquette and exposure control measures among passengers, crewmembers, and airport workers of all kinds. Education materials should do the following:

- Discourage symptomatic or ill passengers, crewmembers, airport workers, and those with known exposure to a person diagnosed with a communicable disease from coming to the airport in accordance with public health guidance.
- Enhance education for passengers on what to do and what to expect before, during, and after travel, including the additional time and responsibilities they should expect to incur (screening, social distancing, masks, etc.).
- Provide passengers with all available information regarding local conditions, including any restrictions on travel via as many communication channels as possible.

Also see Section 3.7, Risk Communications, for more guidelines regarding external communication.

3.5.3 Daily/Routine Reporting

Throughout the course of a communicable disease event, it may be useful to conduct daily assessment and reporting of activities, issues, and potential hazards at the airport, including:

- PPE breaches
- Shortages of cleaning materials
- Incidents involving passengers and airport workers
- Concession/contractor non-compliance with policies and requirements

This approach is consistent with near-miss reporting and other risk-based monitoring of health, safety, and compliance issues. A Daily Report Form is provided in Appendix C7-2. Airport authorities may find it useful to assign responsibility for this form to supervisory personnel. The form may also be shared with other airport stakeholders for their use in reporting and communicating among their employees and with the airport authority. When compliance deficiencies or hazards are found, best practices and recommended actions for mitigation should be followed.

3.6 Personal Protective Equipment

For most pathogens, the probability of contracting a communicable disease is determined by 1) Duration of exposure; 2) Distance from infected party; and 3) Dose or amount of pathogen to which a person is exposed. These factors are important in choosing PPE, particularly respiratory protection such as masks. During an outbreak, and particularly under epidemic and pandemic conditions, certified respirators[24] may be in short supply, and are likely to be reserved for healthcare workers. For this reason and due to practical considerations, the CDC recommended the use of cloth masks throughout the COVID-19 pandemic to support respiratory protection in the general public.

Additional considerations for PPE selection and use are discussed below. A PPE checklist is provided in Appendix C8.

[24] In the U.S., respiratory protection and other PPE devices are approved by the National Institute for Occupational Safety and Health (NIOSH) and all devices are marked as such with the NIOSH logo, approval number, and efficacy rating.

3.6.1 Risk-Based Approach

Traditional occupational safety and health guidelines suggest a risk-based approach to choosing and using respiratory protection and other PPE. The CDC definition for a "close contact" relative to transmission of COVID-19 is when a person is within six feet of an infectious individual for a total of 15 minutes in any 24-hour period.[25] However, scientists' understanding of viral transmission continues to evolve, and there is nothing concrete about six feet of distance or 15 minutes of exposure. These are general criteria for indicating risk on a relative scale.

For most pathogens or toxins in a workplace or public setting, the onset of an illness is predicated on duration, distance, and dose. The matrix in Table 3-2 characterizes a risk-based approach to PPE use, which assumes that viral loading (dose) is highest when there are many people in an area. This approach supports determinations regarding which employees within an airport may require higher levels of respiratory protection and other PPE, if available.

Table 3-2. Risk Matrix for Personal Protective Equipment

Distance*	Duration of Exposure in 24 Hours*		
	< 15 minutes	15 minutes	> 15 minutes
> 6 feet	Low risk	Low Risk	Moderate Risk
6 feet	Low risk	Moderate Risk	High Risk
< 6 feet	Moderate Risk	High Risk	High Risk

*Distance and duration are consistent with many pathogens and may be used as default measures in consultation with public health officials. However, if information is available, it is important to adjust distance and duration based on latest data regarding the specific pathogen of concern.

In an airport setting, other forms of relevant PPE generally include eye protection and gloves. While the primary source of exposure that may lead to infection is respiratory, additional barriers to the eyes, face, and hands can also reduce exposure in concert with hygiene and social distancing.

Table 3-3 outlines PPE recommendations based on employee risk category. When exposure potential cannot be verified, PPE decisions should err on the side of caution.

Table 3-3. COVID-19 PPE Recommendations by Employee Risk Category

	Employee Risk Category		
Recommendation	**High Risk** High Traffic, High Touch, High Contact Areas	**Moderate Risk** Probable/Sporadic Public Exposure	**Low Risk** Limited or No Normal Public Exposure
N95 respirator*	Yes, if available	No	No
Mask/Face Covering**	Yes, if N95 is unavailable	Yes	Yes
Eye Protection	Yes	Yes	No, unless function otherwise requires it
Gloves***	Yes	Yes	No, unless function otherwise requires it

*NIOSH approved; consult CDC guidelines for current recommendations for specific pathogens.

**Masks/face coverings should have two or more layers of washable, breathable fabric, completely cover the nose and mouth, and fit snugly against the sides of your face without gaps.

***Hand hygiene required before donning and after removing gloves.

[25] Contact Tracing, Appendices, Centers for Disease Control and Prevention, October 19, 2021, https://www.cdc.gov/coronavirus/2019-ncov/php/contact-tracing/contact-tracing-plan/appendix.html#contact

3.6.2 Procedural Considerations

If the communicable disease event requires PPE, the following policies should be considered:

- Passengers and airport employees should correctly wear a mask over their nose and mouth at all times while in the air transportation system. Requirements are likely to differ for children under two years old, those with applicable medical conditions, or those who are unable to remove a mask without assistance.
- Airports, airlines, and service providers should have masks available for passengers and airport workers who may arrive without one or require a replacement.
- While mask usage should be enforced at all times, it is critically important to enforce wearing a mask any time social distancing cannot be maintained.
- Reasonable accommodations will be made for persons with disabilities or ailments who cannot wear masks. However, exposure to others should be reduced with respect to time, distance, and via advanced PPE, if possible.
- Physical barriers or face shields should be used to protect employees and the public in instances where passengers and aviation workers are asked to briefly remove masks for official purposes.
- Accommodations for persons with disabilities or ailments who cannot wear masks should be considered on a case-by-case basis, and may include seating that allows social distancing from non-companion passengers.
- Brief removal of masks should be permitted for drinking or eating.

If the communicable disease is transmissible via fomites, the following policies should be considered for baggage handlers:

- Ensure baggage handlers wear gloves when handling passenger baggage.
- Train handlers on proper use of gloves and hand hygiene to prevent contamination.
- Provide handlers with an adequate supply of hand washing and sanitizing materials, disinfectant wipes, and gloves as needed.

The following should be considered for ground transportation drivers:

- Ground transportation drivers (buses, taxis, etc.) should wear a mask while transporting passengers.
- Barriers should be considered to isolate drivers from their passengers.

The PPE checklist in Appendix C8, combined with situational data, provides the Safety Officer with information to develop a risk-based Safety Plan for communicable disease response operations.

3.6.3 Public Health Mandates

Historically, there have been few instances where local, state, and/or federal agencies have issued mandates for public health purposes. Protective measures in the form of mask mandates were issued during the pandemic influenza outbreak in 1918, and in 2014 a few people were subjected to localized quarantining due to the fear of Ebola. As a result of the COVID-19 pandemic, on January 31, 2021, the TSA issued Security Directive (SD) 1542-21-01: Security Measures – Face Mask Requirements. The SD defines requirements for mask use for all airports regulated under 49 CFR § 1542.103 and airlines that have exclusive area agreements under 49 CFR § 1542.111.

In lieu of the risk-based safety process described above, public health mandates may specify necessary protective measures. Questions regarding public health mandates should be addressed to the LPHA or the CDC.

3.7 Risk Communications

Robust communication is vital for an effective response during a communicable disease scenario. The Airport PIO should work with the LHPA and LEMA to develop risk communication products and advise airport stakeholders about the nature of the communicable disease and its impact on airport operations. Key functions include:

- Establishing contact with PIOs from LEMA, LPHA, and other emergency response stakeholders to coordinate messaging and establish a Joint Information Center (JIC) as needed
- Working with the Incident Commander or their designee to establish an approval process for public messaging
- Establishing communication links with airport stakeholders, including:
  - Internal:
    - ARFF
    - Airfield service providers
    - Airlines
    - Concessionaires and retailers
    - CBP
    - EMS providers
    - FAA
    - Ground transportation providers
    - Law enforcement agencies
    - TSA
    - Other stakeholders as necessary
  - External:
    - General public
    - Hospitals and healthcare providers
    - Hotels/hotel associations
    - Media
    - Other peer airports
    - Tourism/travel organizations
    - Travelers

General PIO and crisis communication functions are addressed in Appendix C9, Risk Communications Checklist. Communication needs relative to communicable disease scenarios are described below.

3.7.1 Traveler Communication Needs

Travelers should have access to consistent and accurate information regarding requirements and restrictions for air travel during an infectious disease outbreak. Requirements and restrictions are generally determined via health authorities at the local, state, or federal levels, and may include:

- Postponing travel for those who are symptomatic or test positive for a pathogen
- Health screening measures and testing protocols to identify potentially exposed persons
- PPE requirements
- Hygiene and sanitary requirements
- Social distancing requirements

Ideally, travelers should be able to access restrictions and requirements prior to their arrival at an airport via airport and airline websites, social media, recorded telephone messages, and print media. The news

media can also serve a vital role in informing travelers of restrictions and requirements. Contacts with the media should be established so that journalists can obtain information on short notice. Notices on radio, television stations, and other forms of mass media can be very effective. Platforms recommended for traveler communications include:

- Radio and television news outlets
- Social media for updates, links, and information
- Airport website for updates, links, and information
- In-terminal messaging as a reminder of recommended guidelines for safe travel
- Overhead announcements throughout concourses and terminals
- Use of signage throughout the airport, including roadway signage if available

3.7.2 Airport Partner Coordination

Airports' local operational stakeholders should also be engaged to implement exposure control strategies. Typical strategies employed among airport partners should be included in public communications messages and conveyed via established airport-to-stakeholder communications channels (text, email, etc.). Examples of stakeholder messaging are described below:

- **Concessions: Shopping and Restaurants:**
  - Employees are required to wear masks or facial coverings.
  - Social distancing is required at counters, tables, and in public areas.
  - Increased cleaning of high-touch areas has been implemented.
  - Acrylic transmission barriers are in use at cashier counters.
  - Contact points are limited and contactless payment has been implemented.
  - Compliance with local, state, and federal health requirements and guidelines is enforced.
  - PPE items are for sale at retail shops.
  - Capacity limits are enforced based on local, state, and federal guidelines.
  - Hours of operation for some services is limited.
  - Underutilized venues may be temporarily closed.
- **Airlines:**
  - Individual airlines are addressing exposure control independently; please refer to their respective websites for information.
  - Airlines consistently follow general public health orders.
- **Ground Transportation:**
  - Rental cars:
    - Check-in and key pick-up areas are marked for social distancing.
    - Complete sanitization of rental vehicles is performed with increased focus on high-touch areas.
    - Low and no-touch experiences are in use, including advance check-in, curbside pick-up, and delivery options.
    - Each rental car company is addressing safety independently; please refer to their respective websites for information.

- Taxis/Rideshare:
  - Pick-up areas are marked for social distancing.
  - Vehicles are sanitized daily with increased focus on high-touch areas.
  - Drivers are required to wear a mask or facial covering while transporting passengers.
  - Fogging of vehicles is performed (if available).

3.7.3 Messaging

Consistent communications provide the best opportunity to convey expected behaviors among travelers. Messages should be coordinated with public health officials to ensure they align with desired exposure control measures. Messages should also be coordinated among internal stakeholders to ensure consistency within the airport environment.

In most airports, information can be provided via signage, stands, posters, and electronic displays, and public address as described below:

- Sample wording for public address messages: "For the safety of all passengers, <NAME> Airport is performing health screening for <pathogen or illness>. Travelers who may be suffering from <pathogen or illness> may/will not be permitted to board any flight. The main symptoms of XXXX are…"
- Phrasing should be adjusted according to the information to be conveyed. Symptoms should be verified through local public health officials to ensure current information.
- Public announcements and other forms of communication should be provided in languages used by persons most frequently traveling through the airport.
- To ensure public confidence, airport authorities should explain to passengers, as fully as possible, the reasons for any necessary health-related measures.

Additional messaging suggestions are provided in Table 3-4.

Table 3-4. Traveler-Focused Messaging

Timeline / Responsible Party	Communication Measure
Before Travel	
Airlines	Communicate flexible re-accommodation policies so passengers do not feel pressured to fly if they are sick or uncomfortable.
Airlines and Airports	Communicate pre-arrival information about public health practices at the airport, on the aircraft, and at the destination including CDC travel guidance, testing requirements, and screening procedures.
	Promote pre-departure testing and isolation to prevent exposure while traveling and protect fellow passengers.
	Direct passengers to travel information and resources on official websites such as FlyHealthy.gov.
Arrival	
Airlines	Provide passengers with communications on health measures and requirements for their return trip, including any post-arrival screening or testing, as well as the need for accurate contact information.
Airports	Provide information on local health measures via baggage claim and exit area signs and public announcements.

Timeline / Responsible Party	Communication Measure
Departure	
Airlines	Collect health attestation, contact information, and test results when applicable, and provide reminders of distancing protocols at check-in and boarding.
Airports	Provide signs and announcements throughout the airport reminding passengers of public health measures in place.
Travel	
Airlines	Ensure safety briefings by crew members include public health measures and expectations on the aircraft, and have crew remind passengers of practices as needed.

3.8 Staffing and Badge Holder Considerations

For epidemic and pandemic events, which require long-term consideration of risk to staff and badge holders, plans should include consideration of temporary changes in policy and staffing to reduce communicable disease exposure and promote business continuity. Possible measures to promote continuity of operations are summarized below:

- **Closure/Limited Operations** – Depending on throughput, some airports may be able to limit hours for specific departments, such as badging offices. An alternative may be to renew badges but postpone SIDA training.
- **Furloughed Employee Badges** – In some cases, authorized signatories may be allowed to securely store badges of furloughed employees pending their return to work. This measure limits the amount of processsing needed when operations restart.
- **Fingerprinting** – Utilize a full range of PPE and barriers, and require use of hand sanitizer before touching the fingerprint reader and after fingerprinting.
- **Physical Separation of Badging Office Personnel** – Segregate groups of badging office personnel from each other to avoid total staff exposure. Methods may include split shifts, alternating working days, and splitting staff between multiple offices.
- **Computer-Based Training** – Implement computer-based training to allow social distancing in training centers.
- **Defer Renewal Training** – Defer training not required by regulation to reduce badging office traffic.
- **Remote Work** – Allow staff to work from home or outside of the office
- **Appointment-Based Services** – Institute appointment requirements for all badging operations. Utilize scheduling software, if available.
- **Restaffing Considerations** – To support hiring for tenants, conduct hiring events using appropriate exposure control measures.
- **Badge Renewal with Expired ID** – If driver license issuing authorities are closed, consider allowing temporary badge renewal using an expired driver's license. Allow badge expiration extensions in consultation with TSA.
- **Assess Resiliency** – Perform pre-event planning exercises with reduced staffing or utilize virtual exercises to assess points of failure. Conducting pre-event exercises will identify functions that are most vulnerable to staffing shortages and may assist in identifying measures that can be implemented to make critical functions more resilient.

3.9 Point Source Response

A point source communicable disease event is when one or a small, isolated number of potentially infected individuals arrive at an airport. Five possible scenarios are described below for inbound international flights:

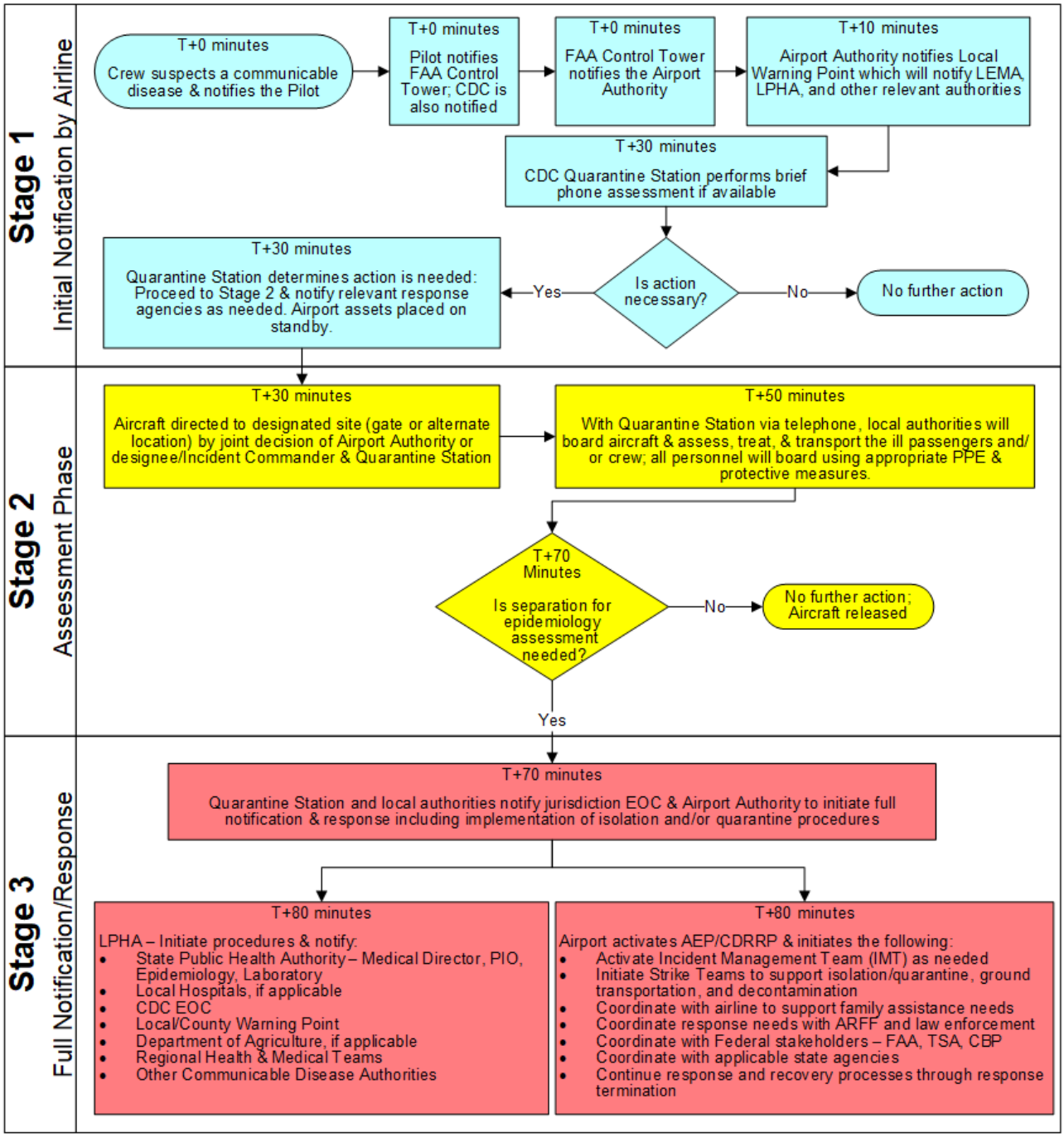
1. **Pre-Arrival Notification with Triggers** – Report of inbound ill traveler with identified triggers indicating need for isolation of the aircraft upon arrival to allow evaluation. Triggers include:
    a. Passenger exhibiting signs and symptoms listed for required or requested reporting.
    b. Passenger is coming from an area with confirmed or suspected outbreak of disease of public health importance.
2. **Pre-Arrival Notification, No Triggers** – Report of inbound ill traveler lacking information to determine cause of illness.
3. **Post-Arrival Notification Prior to Disembarkation** – Report of inbound ill traveler prior to aircraft disembarkation with identified triggers for isolation upon evaluation on the aircraft at the gate.
4. **Post-Arrival Notification After Disembarkation** – Report of ill traveler with identified triggers for isolation after disembarkation and entry into the airport.
5. **Post-Arrival Landside Entry** – Report of ill traveler with identified triggers for isolation after arrival, check-in, and/or security screening, or an airport worker with identified triggers arriving for duty at the airport.

Scenarios 1–4 above describe Point of Entry (POE) incidents under Title 42 of the Public Health Service Act,[26] under which the CDC has the authority to isolate and quarantine individuals who are known or suspected of being ill with or exposed to specific diseases.

To control the potential spread of a communicable disease within an airport and beyond, it is important that response to POE incidents is expedited. A phased approach to POE incidents is provided in Figure 3-6 to support expedited response and control of potentially infected passengers. The phased approach is intended to support activation of a CDRRP within 80 minutes, isolation and potential quarantine of an infected passenger, determination by public health officials as to the disposition of the passenger(s) in question, and decontamination and recovery of impacted areas within the airport.

[26] Title 42 – The Public Health and Welfare, Chapter 6A – Public Health Service, Subchapter II – General Powers and Duties, Part G – Quarantine and Inspection, §264 Regulations to control communicable disease.

Figure 3-6. Phased Response to Port of Entry Incidents



Procedures to support the five point source scenarios are provided below. A checklist and other tools to support point source communicable disease response are also provided in Appendix C-10.

3.9.1 Quarantine Stations

Twenty CDC Quarantine Stations are dispersed throughout the United States, and are assigned jurisdictional authority to enforce isolation and quarantine provisions of Title 42 of the Public Health Service Act.

Quarantine Stations generally act quickly to assist in preventing the spread of communicable diseases between states, and may accept state and local assistance in enforcing federal quarantine, particularly on behalf of airports without a local Quarantine Station. For those airports without a local Quarantine Station, remote consultation may be used during a communicable disease scenario.

Airports should work with the LPHA and/or state authorities to formalize the desired communication channels with the Quarantine Station to ensure expedited and effective coordination of communicable disease response measures. Contact information for all Quarantine Stations is available on the CDC website: https://www.cdc.gov/quarantine/quarantine-stations-us.html.

The CDC Quarantine Station Manual of Operations provides case definitions and internal response protocols for illnesses of public health significance or threat onboard arriving flights. These internal protocols are updated periodically as more information regarding emerging/re-emerging infectious diseases is obtained. The CDC provides the following guidance to promote expedited quarantine station personnel response:

- Upon learning of a possible communicable illness or death on board an aircraft, the pilot or designee should immediately notify the FAA ATCT and their land-based point of contact (for example, Operations Center, Flight Control, airline station manager) and provide:
    - Ill person's name, approximate age, and seat number (and seat changes, if any)
    - Symptoms
    - Point of origin and travel itinerary
    - Any additional information about the ill person that may have been collected by a volunteer, airline, or contract medical staff

  See the cockpit reference card provided in Appendix C10-2.
- Notifications of a suspected communicable disease on an aircraft can come from the FAA control tower, the airport authority, or EMS.
- Once a notification is made, the receiving office should notify the CDC Quarantine Station using the designated 24-hour phone number.
    - CDC Quarantine Station staff will help evaluate an ill person and answer other questions regarding reporting requirements.
    - If contact cannot be made with the nearest station, contact the CDC HQ Quarantine Duty Officer in Atlanta, Georgia.
- The LPHA and LEMA should be contacted within 15 minutes of notification by the pilot/captain of an arriving conveyance. EMS and local hospitals may also be contacted based on the scenario.

3.9.2 Planeside Response

Initial response to a communicable disease emergency at an airport involving planeside response should include CDC Quarantine Station Public Health Officer via teleconference, ARFF and EMS, CBP officer, law enforcement, airport operations, and an airline representative. The LPHA and LEMA may also respond.

In addition to the items listed in Section 3.9.1, information conveyed to the CDC and emergency responders should include the number of other passengers who may be exposed or are displaying symptoms.

General response procedures include:

- All agencies that interact with ill or exposed passengers will use appropriate PPE.
- Everyone on board the aircraft must remain seated until the medical assessment is complete.
- An Incident Command Post (ICP) will be established and identifiable.
- The Incident Commander will request tactical support as needed.
- All arriving responders will report to the ICP and check in with the Incident Commander.

PATIENT MANAGEMENT

Patient management should follow these general guidelines:

- If a decision is made by the CDC or designee to transport a passenger with a suspected communicable disease for which quarantine is recommended or the passenger is considered to have a disease of public health importance, the CDC or designee shall notify the hospital.
- The ill person will be transported via ambulance to the designated hospital after CBP clearance, unless there is an immediate life safety issue, in which case the ill person will be immediately transported.
- Assisted by the airline cabin crew, the relevant authority will inform the crew and passengers about the situation and the expected sequence of events (see Appendix C10-3 for Public Health Announcements).
- The designated authority will board the aircraft to perform an initial assessment to rule out the presence of a bioterrorism event or a communicable disease requiring quarantine and/or would constitute a public health threat. If bioterrorism is suspected, the FBI and TSA should be notified immediately.
- If a communicable disease emergency is suspected and the CDC Quarantine Station is not on site, the designated local authority (EMS/LPHA) will board the flight and consult with the CDC Quarantine Station officer by phone. The CDC Quarantine Station officer will direct the illness response investigation, provide PPE guidance, and direct the activities of all response staff present.
- The CDC Quarantine Station and LPHA may undertake one or more of the following in response to a report of a disease requiring quarantine or a communicable disease among passengers on an inbound aircraft:
    - LPHA will interview all passengers regarding symptoms, travel and exposure history.
    - Passengers who are acutely ill with signs and symptoms will be interviewed first utilizing the appropriate CDC form.
    - LPHA will obtain passenger information from all contact passengers, utilizing the Public Health Passenger Locator Form provided in Appendix C10-4, and passengers who require epidemiologic follow-up will be given instruction.
    - CDC Quarantine Station officers, in consultation with the Medical Officer and others, will determine the disposition of all passengers.
    - Other ill passengers will be transported to the hospital via EMS or other provider.

AIRPORT DEPLOYMENT

Once the airport authority is notified of a potential disease where quarantine is recommended, or of a bioterrorism event, notifications should occur based on the AEP, ASP, and other internal procedures. Appropriate resources should deploy to the airport as needed:

- The CDC Quarantine Station and the LPHA should respond to the ICP or other designated area and check in with the Incident Commander.
- For an international flight, the CDC Quarantine Station Medical Officer should lead the epidemiological investigation of the crew and passengers.
- For a domestic flight, the designated LPHA physician should lead the epidemiological investigation of the crew and passengers.
- Law enforcement should be notified of an arriving flight by the CDC Quarantine Station and the airport authority. Once notified, law enforcement should provide the following:
    - Dispatch a security team consisting of at least two officer with appropriate PPE.
    - Report to the ICP.
    - Refrain from entering established hot or warm zones unless there is an overwhelming life-safety issue requiring immediate attention.
    - Enforce required actions (e.g., detention) for uncooperative ill persons or persons who have been exposed to and may be contaminated by a disease requiring quarantine.
    - If necessary, board the plane with EMS/LPHA to provide security; appropriate PPE should be provided to law enforcement and EMS if necessary.
    - Establish a perimeter of the aircraft within the cold zone in conjunction with CBP.
    - Provide security both in and around any facilities used while assessment of passengers is conducted; use appropriate PPE.
    - If transportation of patients to a designated hospital is required, escort EMS and guard and follow the ambulance, and provide security for international passengers.
- The Pilot in Command of Aircraft should:
    - Report to the CDC Quarantine Station via the FAA ATCT any death or illness among passengers or crew during the flight.
    - Seek assistance from medical professionals on board the aircraft and on the ground (e.g., airline medical staff, contract medical consultants, CDC Quarantine Station Medical Officer, etc.) to make an initial assessment of the situation and communicate pertinent information to CDC Quarantine Station personnel who will coordinate the ground response prior to the aircraft's arrival.
    - Determine in consultation with medical professionals, CDC, and other governmental entities whether to proceed to the scheduled destination or divert to another airport. (Medical conditions and national transportation concerns, CDC, U.S. Department of Transportation [DOT], FAA, CBP, and TSA may directly influence the decision to divert).
    - Recommend what services may be needed at the POE upon arrival.
    - Maintain contact with the FAA ATCT and air carrier operations center, which will establish and maintain contact with the CDC Quarantine Station.
    - Direct the cabin crew to isolate the ill person to the extent possible and provide masks if available and appropriate.
    - Periodically update passengers and cabin crew on recommendations from authorities and agencies on the ground.
- Air Carrier Operations Center/On-Airport Representative should:
    - Coordinate operations and maintain communications between the captain of the aircraft and the CDC to monitor the status of the ill persons.

- Provide instructions to the crew in consultation with the airport authority, TSA, and CDC Quarantine Station officials.
- Coordinate with CDC, LEMA, and LPHA on media relations and press management through the PIO/JIC.
- Assist travelers in making alternative travel arrangements as needed due to delays caused by the public health incident.
- Instruct ground crews to delay off-loading baggage and cargo until authorized to do so by the Incident Commander or Unified Command.
- Recover and forward baggage of travelers delayed by the public health incident subject to necessary processing by CBP, TSA, or other entities as appropriate.
- Ensure air circulation is maintained and functional hygiene facilities are available on the aircraft.
- Provide appropriate aircraft decontamination when necessary.
- Ensure food and beverages are available on the aircraft and adhere to guidance provided by CDC Quarantine Station or LPHA to reduce exposure risks during consumption.
- Ensure that the pilot-in-command receives approved public health communications.
- Offer language interpreters when needed.

RESPONSIBILITIES OF THE AIRPORT AUTHORITY

To support response, the airport authority should:

- Notify CDC, ARFF, law enforcement, CBP, DOT, and TSA personnel of any inbound conveyance with reported ill person(s) on board.
- Coordinate with the FAA to provide a parking area for the aircraft.
- Coordinate appropriate notifications among relevant airport stakeholders.
- Work with the LPHA and LEMA to activate a quarantine facility as needed.
- Arrange transportation for individuals who will be quarantined off site
- Coordinate media relations and press management through the JIC with PIOs from federal, state, and local authorities.

An event involving a flight carrying a large number of sick passengers, multiple flights carrying ill passengers arriving during a condensed time period, or a single case of smallpox or other suspected bioterrorism agent may require a more extensive response involving many more agencies and personnel coordinated through the LEMA and LPHA.

3.9.3 Parking, Gates, and Isolation Areas

In the event of an incoming aircraft with sick passengers, recommended parking and gate procedures include:

- **Secure Access** – If a disease requiring quarantine is suspected, the captain of the arriving aircraft should be directed by the FAA or airport authority to secure the doors of the plane until EMS/CDC Quarantine Station personnel arrive.
- **Remote Parking** – The aircraft should be directed to a remote parking area to allow response personnel access and to isolate the aircraft, passengers, and crew from main terminals. Access to the aircraft by health and medical personnel may require an air stairs truck.

- **Designated Gate** – If remote parking is unavailable, an isolated designated gate should be used.
- **Ventilation** – Air conditioning to the aircraft cabins should be maintained at all times.
- **Maintain Passengers** – Everyone onboard the aircraft must remain onboard until medical assessment is complete.
- **Public Health Announcements** – EMS/CDC personnel, with assistance from airline cabin crew, will inform the crew and passengers as to the nature of the situation and the sequence of events (see Appendix C10-3, Public Health Announcements Scripts).

3.9.4 Disposition of Passengers in a POE Incident

Passengers are subject to three possible actions in a POE incident: 1) Unconditional release; 2) Release under epidemiological surveillance; and 3) Quarantine. These actions are described below.

UNCONDITIONAL RELEASE

If no disease requiring quarantine, communicable disease of public health significance, or bioterrorism is suspected based on public health evaluation, passengers and crew will be released at the scene with no follow-up action.

CONDITIONAL RELEASE

Under certain circumstances, the CDC Quarantine Station may conditionally release passengers who are not deemed to be close contacts of the index case, allowing them to continue their travel under the following conditions:

- Co-travelers who are not travel companions of the ill person and who will complete travel within 24 hours of first exposure may be conditionally released to continue travel. These individuals may be asked to self-quarantine for up to five days.
- Passenger locator information will be collected (see form in Appendix C10-4), health information cards may be distributed, prophylaxis medications may be administered, and state and local health departments will be notified for tracking released persons.

PERSONS REQUIRING QUARANTINE

This scenario will occur if there is a suspected presence of a disease requiring quarantine or a communicable disease of public health significance. Depending on the phase, transmissibility, and nature of the pathogen, close contacts may be quarantined in place or released for home quarantine, unless differing guidance is provided by the LPHA or CDC Quarantine Station.

In the event that quarantine is required for any passengers of an aircraft, a quarantine order will be obtained by the following steps:

- Step 1: The CDC Quarantine Station will contact the LPHA to notify the need of having a quarantine order issued.
- Step 2: The LPHA will order the quarantine pursuant to legal authorities and with support of law enforcement as needed.

The airport may be asked to provide on-site facilities for a limited time until the LPHA/LEMA arranges off-site facilities. Examples of situations that may require on-site quarantine facilities include smallpox, SARS, and other infectious diseases that are considered to be a threat to public health. Recommended procedures are as follows:

- Passengers are transported to a temporary quarantine facility. Passengers may be held at this location for up to 72 hours while the LPHA/LEMA prepares the designated community quarantine facility.
- Passengers are transported to the designated community quarantine facility once initial public health assessment has been completed.
- After assessment, if the CDC Quarantine Station determines the presence of a communicable disease requiring quarantine or a bioterrorism event, CDC Quarantine Station will initiate full notification to the CDC EOC.
- Consideration will be given to contacting the designated hospital as soon as there is any indication that passengers will require airborne isolation or acute medical care. The hospital must be notified once absolute determination is made that an ill passenger is to be transported to it.
- Depending on the type and extent of the situation, the local and/or state EOCs may be activated and additional response support may be requested from LEMA, SEMA other state agencies, FBI, TSA, and local hospitals.

3.9.5 Quarantine Operations

If a disease requiring quarantine is suspected after the initial public health assessment period is complete, the aircraft should be towed to a temporary quarantine facility. The following actions should also be initiated as the plane is transported to the designated area:

- **Law Enforcement:**
  - Provide security on the airfield while the plane is towed.
  - In collaboration with CBP, provide security at the temporary quarantine facility.
  - Provide security on the airfield if quarantined passengers need access to their luggage for medical reasons.
- **Screening/Detention** – In consultation with stakeholders, the airport authority may secure screening and additional facilities for passengers for whom detention, restriction of movement, or quarantine is warranted:
  - It is beneficial to establish a hold room or similar area that can accommodate up to 250 people for up to 72 hours.
  - If additional quarantine is required beyond 72 hours or individuals need to be moved sooner, the LEMA and LPHA should coordinate a suitable off-site facility.
- **Quarantine Facilities** – Should quarantine of passengers be required, the LPHA should work with various response agencies to plan for and activate a temporary care and quarantine facility:
  - The public health aspect of the incident will be under CDC Quarantine Station or LPHA jurisdiction until longer term quarantine facilities are warranted. In a quarantine event beyond 72 hours, authority may be relinguished to the LPHA or state agency.
  - In some instances, home quarantine may be a more desirable option than quarantine in a designated facility.
- **Surge Capacity** – In the event of a large-scale public health emergency, the CDC Quarantine Station will request assistance from mutual aid agencies to assist with medical screening and triage, health screening of ill and exposed persons, distribution of health alert notices, administration of prophylaxis, and collection of personal locator information:
  - An effective response may require a two-tiered approach. The CDC Quarantine Station will need surge response from local public health officials and other members of the

immediate healthcare community who can arrive at the airport quickly upon notification. Long-term (beyond 48 hours) sustainability of operations will require a federal response following the arrival of national assets. Deployment of federal surge response staff to the CDC Quarantine Station may take 48 hours or longer.

- Federal surge capacity resources that may be requested include CDC deployed staff, U.S. Public Health Service Commissioned Corps officers, HHS National Disaster Medical System staff, Regional Emergency Coordinators, and other regional HHS personnel.
- The CDC Quarantine Station is responsible for providing training, equipment, and overall management of surge personnel assigned to the Quarantine Station. Local surge staff would fall under the responsibility of the agency to which they are assigned. The airport authority may be asked to badge surge staff in an airport incident.

3.9.6 Post Arrival Traveler or Airport Worker Landside Entry

Ill travelers entering from landside may be reported after arrival, check-in, or security screening. The report may be issued by airline personnel, TSA personnel, or by other airport workers. Likewise, the report of an ill airport worker may also be reported by co-workers or other airport users. Technically, these scenarios are not POE incidents under Title 42 of the Public Health Service Act, therefore the CDC Division of Global Migration and Quarantine does not have authorities as described above for airline-based cases. Response measures, isolation, and decontamination considerations are described below.

RESPONSE MEASURES

In this scenario, the LPHA or state authority will have jurisdiction. The following response measures are warranted:

- **Initial Notification** – The airport authority is notified by airline personnel, TSA, or other airport stakeholder of a potentially ill traveler or airport worker. The airport authority should:
  - Encourage the notifier to isolate the potentially ill traveler or airport worker.
  - Contact the LPHA and provide details, including signs and symptoms of illness.
  - Coordinate immediate actions in consultation with the LPHA.
- **LPHA** – The LPHA should conduct the following tasks:
  - Provide guidance in the preliminary assessment of the ill person.
  - Coordinate contact tracing and CDC notifications if warranted.
  - Notify state and local medical examiner as required.
  - Coordinate with local, state, and federal entities to determine if isolation and quarantine orders are warranted.
  - Work with the airport authority and local agencies to activate a quarantine facility as needed.
  - Manage isolation and quarantine operations.
  - Provide guidance to designated hospitals and/or the quarantine site medical clinic on evaluation, diagnosis, and clinical management of ill people, including laboratory testing.
  - Provide clinical and public health information to local healthcare providers and the public.
  - Provide public health information and recommendations to local and state authorities.

  - If warranted, coordinate with the CDC Quarantine Station on public health recommendations and implementation of protective measures.
  - Collaborate with the PIO/JIC to develop and authorize messaging for the quarantined individuals, responders, the media, and the public.
- **ARFF/EMS** – ARFF and/or EMS may be asked to perform the following:
  - Assist the LPHA in conducting a preliminary public health assessment on-scene to determine if the individual requires medical treatment, and if they may be ill with a disease where quarantine is recommended.
  - Establish Unified Command as needed.
  - Transport the ill person as needed.
  - Coordinate with the JIC on media relations as needed.
- **Law Enforcement** – Law enforcement may be asked to perform the following:
  - As requested, establish a security perimeter around the isolation area used by the ill or affected persons and perform crowd control.
  - Unless there is an overwhelming life-safety issue needing immediate attention, law enforcement shall refrain from entering isolation areas.
  - Enforce required actions for uncooperative ill persons or persons who may be contaminated by a disease requiring quarantine.
  - Provide an escort to secure and enforce isolation and quarantine orders.
  - Coordinate with the JIC on media relations as needed.
- **Airport Authority** – Following initial notification of the LPHA, the airport authority should:
  - Assist in identifying initial isolation areas and coordinate with the airline or other impacted leasehold.
  - Coordinate appropriate notifications among relevant airport stakeholders to minimize exposure to the area of impact.
  - Work with the LPHA and LEMA to activate a quarantine facility as needed.
  - Arrange transportation for individuals who will be quarantined off site.
  - Coordinate media relations and press management through the JIC with PIOs from relevant local, state, and federal authorities.

ISOLATION CONSIDERATIONS

Ad hoc identification of isolation areas may be necessary to limit exposure of a potentially ill traveler from the general airport population. To the extent possible, isolation rooms or areas should be identified quickly that meet the following criteria:

- The room or area should be properly ventilated (see Appendix C5-3 for specific recommendations).
- Doors should be kept closed except when entering or leaving the room, and entry and exit should be minimized. If a room is not available, the isolation area should have an established minimum perimeter of 15 feet with sufficient security to control entry.
- Access to a restroom should be provided.
- Entrants should be provided with appropriate PPE as determined in consultation with the LPHA.
- A log of entry into the room or area should be maintained to document potential contacts.

- Potentially infected travelers transported outside of the isolation room/area should be asked to wear appropriate PPE in consultation with the LPHA.

3.9.7 Decontamination

Any aircraft or facility that requires decontamination will be prohibited from use until designated as safe. Costs for decontamination are the responsibility of the airline and facility manager. General principles for decontamination include:

- Aircraft, airport facilities, ground transportation, and other assets that may have been in contact with infected patients require disinfection using an EPA-registered disinfectant according to label instructions.
- Bagged materials should be autoclaved or incinerated as medical waste.
- For suspected pathogens that are highly contagious and/or acutely deadly, such as smallpox, areas of impact may require different cleaning and disinfection procedures and more advanced PPE to conduct those duties.

An airport-specific Cleaning and Disinfection Checklist is provided in Appendix C5-1.

SECTION 4: LEVERAGING TECHNOLOGY

Prior to the COVID-19 pandemic, advancements in digital technology were underway to address a variety of airport operations and security functions and improve the passenger experience. Due to the pandemic and resulting impacts on air travel, many airports shifted the focus of digital technology to potential uses in reducing viral exposure among passengers, employees, and other stakeholders.

It is important to note that advancements in technology occur rapidly, and many devices will require proof of operational efficacy prior to implementation. Another factor in considering technology is cost. Many of the examples provided below are costly to implement, making it especially important that airports verify they are able to achieve the desired goals or objectives prior to procurement and installation. Ease of operational use, training for end-users, maintenance and upkeep needs, and life cycle should also be considered. Known technologies and their potential use in communicable disease response and recovery in airports are described below.

4.1 Mobile Applications

Many airports and airlines have mobile applications (apps) that they use to support branding, wayfinding, access to services, and other passenger-focused services. Mobile apps support exposure control measures in the following ways:

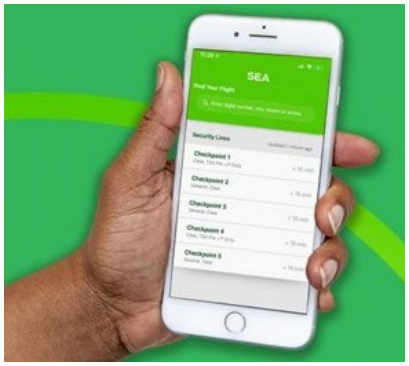
- Mobile boarding passes and coupons to print bag tags eliminate the need to touch digital kiosks and surfaces
- QR codes enable touchless transactions for ordering products and food
- Tracking cleaning and disinfection processes throughout airports
- Mobile apps focused on social distancing at the individual level allow notification of users when they are too close to others

Strong cellular signals and reliable high-speed WiFi within an airport will help ensure that apps and related systems work effectively. If an app is slow to function, passengers will stop using it, and its efficacy in support of social distancing, risk communication, and other communicable-disease response measures will be substantially reduced or eliminated entirely.

4.1.1 Wayfinding and Scheduling Features

Apps generally include a directory of airport services as well as current security checkpoint wait times, flight information, and important travel alerts. Seattle-Tacoma International Airport (SEA) implemented the flySEA mobile app, which includes an interactive map that offers indoor navigation guidance throughout the airport and displays the user's location.[27] The app also provides information regarding international arrivals, accessibility services, and ground transportation.

Figure 4-1. flySEA Application



Source: Port of Seattle

The flySEA app also supports food ordering and delivery. Passengers can order food ahead of time and pick it up at the counter

[27] Khouw, Andrew, Moving Seattle-Tacoma International to a Touch-Free Environment, Airport Magazine, AAAE, page 26, April/May 2022.

or have the order delivered to their location for a fee. The airport is also testing a robot to deliver food to maximize social distancing.

Airports have found it useful to maintain apps internally or in close consultation with vendors so that content can evolve with changes in the airport. Airport-specific apps provide a basis for implementing social distancing measures, and provide passengers opportunities to schedule services and activities, which can reduce queue times and overcrowding.

4.1.2 Contact Tracing and Location Monitoring

As discussed in Section 3.2.4, contact tracing is supported by digital technology to perform case management as well as Proximity Tracing and Exposure Notification (PTEN). Case management tools require significant support from LPHA partners. PTEN tools can be app-based and integrated with camera systems and facial recognition and other biometric systems to identify contacts and notify them of potential exposure to a communicable disease. Weaknesses of PTEN tools include dependency on travelers having and using a mobile device, and the requirement for voluntary opt-in.

4.2 Camera Systems, Facial Recognition, and Infrared Technology

In combination with camera systems, facial recognition technology, and touchless infrared temperature screening provide an opportunity to reduce physical contact during screening and processing, support contact tracing, and screen for potential illness via a body temperature reading.

Use of facial recognition for screening purposes has been used to reduce throughput time, and is useful in minimizing person-to-person contact. According to the U.S. Government Accountability Office (GAO), by the end of 2020, 27 domestic airports had implemented facial recognition technology. Some facial recognition technologies are capable of performing face scans without requiring passengers to remove face coverings.[28] As with all technology, cost, ease of use, and maintenance should be considered prior to implementation. In addition, privacy concerns regarding use of facial recognition continue to emerge.

Figure 4-2. Infrared Thermal Imaging

Infrared cameras can be used to detect passengers with elevated temperatures. However, temperature is only one symptom of illness and it is not necessarily attributable to a communicable disease. Normal human temperature varies enough between individuals to make the numeric threshold for illness difficult to identify. Moreover, variations in incubation times among pathogens make temperature sporadically useful in assessing passenger health. For communicable disease purposes, public health professionals generally recommend multifactor symptom screening and, if possible, pathogen-specific testing during outbreaks. However, infrared technology has improved to the point that touchless temperature screening is possible in a public setting as one potential health screening parameter.

4.3 Touchless Technology and Biometrics

Building on the facial recognition discussion, touchless biometric technology is being used successfully for expedited boarding and other passenger processing. Airlines are performing touchless boarding using

[28] Rosenthal, Jeffrey N., Oberly, David J., and Schrag, Andrew H., Biometric Privacy in the Era of COVID-19: Facial Recognition Compliance for Airports and Airlines, Aviation Today, February 8, 2021.

photo-based systems to verify identification and credentials. This process eliminates contact between airline employees and passengers as well as the need to scan boarding passes.

Biometrics also have a role in minimizing contact among employees for access control purposes. In addition to facial recognition, other biometric modalities for used employee access purposes include iris, retinal, and various touchless hand and fingerprint technologies.

The TSA Identity Management Roadmap[29] builds on biometric concepts to help the industry navigate emerging technologies that may be used to foster health and safety among airport workers and passengers during communicable disease scenarios. TSA now enables the use of digital identification at many locations. A large-scale pilot of a new Credential Authentication Technology (CAT-2) enables passengers to scan their driver's license, passport, or digital identification, and the system authenticates the passenger's live image against the identification provided. TSA has also developed a touchless PreCheck solution that enables passengers to verify their identity using only their face without requiring a physical identification.

Other technologies that support touchless operations include sensor and motion-based technologies:[30]

- Motion-based elevator controls allow users to indicate their desired floor by waving their hands.
- Interactive kiosks and bag drop displays allow users to perform functions via body movements.
- Self-service kiosks use sensors to monitor a passenger's temperature, heart rate, and respiratory rate to identify possibly infectious individuals.

4.4 Virtual Queuing

Virtual queuing can be used to support social distancing and crowd management for security screening and other passenger processing. For several years, Disney World[31] and other theme parks have used virtual queuing through apps to reduce wait time, control crowds, and improve the guest experience. In 2021, SEA was the first airport in the U.S. to offer a virtual queueing reservation system for security checkpoints.[32] The system allows customers to reserve a time to enter the security checkpoint either on the SEA website or via the flySEA app. The service is free and has been shown to substantially reduce wait times. Other airports are testing virtual queuing systems as well.

During the COVID-19 pandemic, airports collaborated with industry partners to pilot virtual queuing programs. Passengers can scan a QR code and wait virtually, or they can make an appointment for screening. Scheduling via virtual queuing systems provides greater clarity for airports, TSA, and passengers as to when space is available. Passengers can pick their screening time; if passenger demand exceeds screening capacity at the checkpoint at the selected time, passengers can choose a different time. This process enables airports to better regulate the passenger show-up profile.

[29] TSA Identity Management Roadmap 2022, February 2022, https://www.tsa.gov/sites/default/files/tsa_idm_roadmap_2022-03-01_508c_final.pdf.
[30] Berti, Adele, The Rise of Touchless Technology at Airports, Airport Industry Review, September 17, 2020. https://www.airport-technology.com/analysis/touchless-technology-airports/
[31] Virtual Queues - Walt Disney World (go.com), https://disneyworld.disney.go.com/guest-services/virtual-queue/
[32] Khouw, Andrew, Moving Seattle-Tacoma International to a Touch-Free Environment, Airport Magazine, AAAE, page 27, April/May 2022.

4.5 Robotics

For communicable disease response, robotics can be used for cleaning and disinfection. Contactless cleaning using ultraviolet (UV) has been widely employed, with some airports using robotics to cover large areas over long durations.

Figure 4-3. Robotic UV Floor Cleaner

Source: Avidbots Neo

In addition to cleaning and disinfection, robotics are being implemented in a wide array of airport functions including service desk support, baggage handling, and concessions, including touchless food delivery. These functions support social distancing between passengers and airline, airport, and tenant personnel.

Robots are being used at Qatar's Hamad International Airport to measure pulse rate, body temperature, and other health assessment parameters.[33] While these applications are promising, the cost of implementing robotic systems is substantial.

4.6 Voice Assistants

Voice assistants such as Amazon Alexa, Google Assistant, and Sonos Voice Control are another emerging use of technology at airports. Voice assistants provide an accessible method of obtaining airport information without using a touch device. While use cases are emerging, in combination with an airport-specific app it is possible that voice assistants could be used to provide general airport information and notifications, support virtual queuing and other social distancing functions, and provide a valuable communication tool for passengers with disabilities. Both SEA and Pittsburgh International Airport[34] are using voice assistants to improve the passenger experience and reduce wait times and crowding.

4.7 Virtual Emergency Management

A number of digital technologies exist to support emergency management through a virtual EOC. Many LEMAs use a digital system to support emergency management at the city, county, or regional level, and are often linked to statewide systems. To implement a virtual EOC, coordination with LEMAs is encouraged as it is beneficial for airports to use technology that interfaces with local and state emergency response agencies. A LEMA may also help reduce costs by adding the airport as a user to existing city- or county-based services.

Virtual emergency management software solutions vary greatly based on the provider, but generally focus on providing situational awareness to assist in preparedness, response, and recovery in a virtual setting. Virtual emergency management software solutions offer the following:

- **Around-the-Clock Operational Capacity** – Capacity for immediate access to critical data to enable airports to keep pace with ongoing operations and critical event management.
- **Passenger and Crew Tracking** – Passenger and crew manifest information is available quickly to better understand interactions during an emergency. This type of data visibility supports immediate emergency notifications to relevant parties and organization of necessary support.

[33] Youd, Frankie, The Robots Taking Over the World's Airports, Airport Industry Review, May 4, 2021.
[34] PIA Intelligent Voice Assistant For PIT Airport, https://www.youtube.com/watch?v=D5ouYUtVvS0.

- **Scenario Simulation** – The ability to model scenarios results in a better understanding of specific emergencies for planning purposes, and more realistic training scenarios and exercises to strengthen emergency preparedness.
- **Mobile Functionality** – Use of mobile devices (i.e., tablets, computers, and mobile phones) makes it possible to:
    - Connect with remote teams, including command staff and responders in the field.
    - Streamline collaboration and improve response time.
    - Improve information-sharing throughout emergency operations.
    - Provide alerts to allow real-time notification of events and resource needs.

If an emergency management–specific digital technology system is not available, it is possible to conduct EOC operations using virtual meeting platforms. If virtual meeting platforms are used in lieu of emergency management platforms, it is important to have a defined schedule and follow ICS principles and AEP procedures to ensure that ICS functions are conducted as planned. Benefits and drawbacks to virtual EOCs as described by the Cybersecurity and Infrastructure Security Agency[35] are provided below:

Benefits of Virtual EOCs	Drawbacks of Virtual EOCs
• Accommodates social distancing and other health measures • Eliminates physical space limitations – members can participate from anywhere • Ability to include personnel from a variety of disciplines • Immediate availability – no waiting for team to assemble at a physical location • Damage to or inaccessibility of physical EOC no longer a concern • Eliminates costs of a physical location	• Loss of in-person communication • Reliance on technology and utilities, which may be unavailable during a major disaster • Need for additional or augmented SOPs and training personnel • Increased potential cybersecurity vulnerabilities • Lack of proximity between groups/disciplines may limit access to quick updates • Additional expenses related to technology (e.g., hardware and software costs)

The benefits and drawbacks identified above should be considered when planning to implement a virtual EOC.

[35] Virtual Emergency Operations Centers: Lessons Learned from Hurricane Isaias, Cybersecurity and Infrastructure Security Agency, October 1, 2020, https://www.cisa.gov/sites/default/files/publications/01-13-21_Lessons%20Learned_vEOC_Checklist_508c.pdf

SECTION 5: PATHOGEN-SPECIFIC CONSIDERATIONS

The exposure control measures described in Section 3 are generally effective in addressing communicable diseases. However, differences in transmissibility, mode of transmission, and disease severity may require changes to exposure control measures, particularly with respect to health assessments, PPE, and social distancing. To address these needs and to support planning for both point source communicable disease planning and broader epidemic/pandemic scenarios, various pathogens were researched.

The CDC monitors over 120 notifiable diseases and conditions at the national level to recognize disease outbreaks, track the spread of disease, identify geographic areas of concern, assist state and local public health departments in controlling disease, and evaluate and fund disease-control activities. Highly communicable infectious diseases require intensive exposure control measures. Based on CDC data, pathogen types and diseases are categorized regarding communicability as described below:

- **Highly Communicable** – Pathogen/disease is easily transferred from person to person via:
  - Direct casual contact
  - Breathing air in proximity to an infected person
  - Infection through eyes, nose, or mouth via droplets or fomites
- **Moderately Communicable** – Pathogen/disease can be transferred from person to person but may require close and prolonged human contact or ingestion.
- **Low Communicability** – Pathogen/disease is not easily transferred from person to person.
- **Not Communicable** – Cases of person-to-person transmission have not been identified.

Using these categories for communicability, 27 moderately and highly communicable pathogens were identified:

Highly Communicable

- Chickenpox (Varicella)
- Coronavirus (COVID-19)
- German Measles (Rubella)
- Hepatitis A
- Measles (Rubeola)
- Mumps
- Pertussis (Whooping Cough)
- Poliovirus Infection
- Respiratory Syncytial Virus
- Shigella (Shigellosis)

Moderately Communicable

- Hepatitis E
- Diphtheria
- Streptococcus pneumoniae
- Tuberculosis
- Enterovirus D68
- H1N1 Influenza (2009 Pandemic)
- Marburg virus
- Middle East Respiratory Syndrome (MERS)
- Meningitis, bacterial and viral
- Severe Acute Respiratory Syndrome (SARS)
- Smallpox (Variola) (eradicated)
- Drug-Resistant Staphylococcus Aureus
- Typhoid Fever
- Viral Hemorrhagic Fever (VHF)
- Avian Influenza (H5N1)
- Lassa virus

The highly and moderately communicable pathogens described above were analyzed based on symptoms of the diseases they cause. Symptoms fell into ten categories.

1. Aches and Pains
2. Digestive/Urinary
3. Fever/Chills
4. Respiratory
5. Skin/Rashes
6. Soreness/Swelling/Bleeding
7. Neurological
8. Eye/Vision Impacts
9. Sleep Impacts
10. Senses

Understanding specific symptoms that are abnormal in relation to locally prevalent infectious diseases, and tracking passenger travel patterns may assist in identifying potentially severe diseases in collaboration with public health officials. Geographic distribution is another component to support infectious disease preparedness. The communicable diseases below are common throughout the United States regionally and/or on a seasonal basis:

- Chickenpox (Varicella)
- Coronavirus (COVID-19)
- Drug-Resistant Staphylococcus Aureus
- Enterovirus D68
- German Measles (Rubella)
- Influenza
- Hepatitis A
- Hepatitis E
- Measles (Rubeola)
- Meningitis, bacterial
- Meningitis, viral
- Mumps
- Pertussis (Whooping Cough)
- Respiratory Syncytial Virus
- Shigella (Shigellosis)
- Streptococcus pneumoniae
- Tuberculosis

Below is a list of notifiable infectious diseases that are not commonly present in the United States:

- Diphtheria
- Lassa Virus
- Marburg Virus
- MERS-CoV
- Polio
- Typhoid Fever
- Viral Hemorrhagic Fevers

While the probability of encountering these infectious diseases is low, it is important to understand the link between these disease symptoms and travel patterns. Symptoms and travel locations can be used to support identification of potential infectious diseases and allow requisite response and isolation in collaboration with public health officials. Based on this analysis, a Pathogen Assessment Checklist is provided in Appendix C11 to support correlation of unique symptoms with recent travel.

It is important to note that conditions can change rapidly due to emerging pathogens, mutation, drug resistance and other factors. The checklist in Appendix C11 should be used in consultation with public health professionals.

SECTION 6: RECOVERY

Generally, a short-term, limited communicable disease event will require little in the way of recovery once the outbreak is contained and response operations are ended. Asset restoration may be necessary in areas used for isolation and medical assessment. For larger scale events, asset restoration may also be necessary in areas used to support disease response, particularly if those areas were damaged during use. Larger scale events may also require demobilization and restoration, post-incident assessment and improvement planning, and financial recovery. A Recovery Manager may be appointed by the Incident Commander to plan and conduct recovery processes. Recovery functions are described below and a Recovery Checklist is provided in Appendix C12.

6.1 Demobilizing and Restoring Processes and Resources

For a point source communicable disease event, demobilization and restoration processes should be localized and limited to cleaning and disinfection of areas used for isolation of ill passengers. For epidemics or pandemics that require long-term modification of security operations and other airport processes, demobilizing and restoration may be more involved. In some cases, it may be prudent to maintain exposure control measures if they provide long-term benefit and do not impact normal airport processes. Section 6.2 provides procedures for evaluating the ongoing use of measures implemented during a communicable disease event.

Post-epidemic or pandemic demobilization and restoration processes and the responsible position or team are described below:

- Replace expendable or perishable materials and supplies used in the emergency (Logistics Section).
- Assess damage resulting from communicable disease response, and plan and schedule repair and replacement (Recovery Manager or strike team implemented under the Operations Section).
- Complete permanent repair and/or replacement of equipment and facilities, and restore physical infrastructure to pre-event condition (Recovery Manager or strike team implemented under the Operations Section).

6.2 After-Action Review and Improvement Planning

The HSEEP describes an after-action review process to be used for exercises to support continuous improvement of emergency preparedness capabilities. The after-action review process is also employed to evaluate real-life emergencies, and is recommended for use after communicable disease events to identify positive attributes of response as well as opportunities for improvement. The process for post-event review is summarized below:

- **Timeline Development** – Develop a timeline of activities that occurred throughout the communicable disease event. The timeline often clarifies challenges that occurred during the response and opportunities to mitigate them.
- **Develop Objectives and Capability Targets** – Identify objectives of communicable disease response specific to the actual event as a basis for evaluation of response and recovery efforts. The NPG as well as local and state public health emergency response plans may provide examples of relevant objectives and capability targets.

- **Data Collection** – Collect records of participant actions, including ICS forms, data logs, duty logs, radio activity, and other written and recorded communications that form the analytical basis for determining if critical tasks were conducted successfully and in desired timelines.
- **Data Evaluation and Analysis** – Use data to evaluate activities in relation to plans, policies, and procedures, legal authorities, and agency roles and responsibilities. Analyze decisions made, activation or implementation of processes and procedures, requests for resources, use of mutual aid agreements, and how and what information was shared among agencies and the public.
- **Root Cause Analysis** – Trace the origin of each action to earlier actions to identify respective causes using the following questions:
    - Were capability targets met? If the targets were not met, what factors contributed?
    - Did activities suggest that critical tasks were executed to meet capability targets? If not, what was the impact or consequences?
    - Do current plans, policies, and procedures support critical tasks and capability targets? Were participants familiar with these documents?
- **Draft AAR/IP** – Develop the draft AAR/IP, summarizing key information related to response and recovery operations:
    - Event, dates, location, participants, mission area(s), specific communicable disease threat, a brief description, and the name of the AAR/IP point of contact
    - Analysis of performance in relation to plans, policies, and procedures
    - Response and recovery strengths and areas for improvement
    - Develop an IP including all recommended corrective actions:
        - Identify mitigation measures (physical, technological, or procedural) to support detection, protection, prevention, response, and recovery from communicable disease scenarios within the airport
        - Identify scopes and procurement information to support mitigation
        - Devise a schedule and plan to implement mitigation measures
        - Identify training and exercises necessary for improved capabilities
        - Document all recovery activities
        - Identify lessons learned for approaching similar problems in the future
- **After-Action Meeting** – Hold an After-Action Meeting with all responding agencies and personnel to review the draft AAR/IP, identify additions and corrections, and gain consensus on findings.
- **Final AAR/IP** – Once all corrective actions have been consolidated in the final IP, the IP may be included as an appendix to the AAR. The AAR/IP is then considered final and may be distributed to participating response agencies and stakeholders.
- **Corrective Action Tracking and Implementation –**
    - Corrective actions captured in the AAR/IP are tracked and continually reported on until completion.
    - Assigned points of contact are responsible for tracking and reporting progress in implementing corrective actions.
    - Tracking corrective actions to completion yields tangible improvements in preparedness.

6.3 Financial and Operational Recovery

As a large-scale incident such as a pandemic is brought under control, and as response operations are terminated, the extensive impact on airports may require long-term recovery needs. Federal and state disaster declarations provide the opportunity to document the cost of response and recovery operations, and to seek cost recovery if it is available through FEMA or other sources. Airports should work with LEMAs and SEMAs to coordinate long-term recovery via local and state disaster recovery plans, which should provide mechanisms and phases necessary to re-establish vital community resources and bridge the gap from response operations to long-term community sustainability. In the aftermath of a communicable disease event, and in concert with the LEMA/SEMA, airports should focus on the following:

- Document all recovery activities and associated labor hours.
- Perform an impact assessment to identify the operational and financial impacts of the infectious disease response on airport operations.
- Collect and compile all ICS forms and other information to identify the cost of response operations with details to support potential applications for FEMA, insurance, or other forms of reimbursement.
- Develop a list of identified mitigation measures and their associated direct and indirect costs.

For declared emergencies, airports should work with LEMAs to coordinate reimbursement activities and assess coordination needs identified during response operations. LEMAs will have access to information regarding FEMA Stafford Act[36] procedures as well as congressional funding and other sources of recovery funding.

[36] The Robert T. Stafford Disaster Relief and Emergency Assistance Act provides statutory authority for federal disaster response activities as they pertain to FEMA and FEMA programs, https://www.fema.gov/disaster/stafford-act.

SECTION 7: PLAN IMPLEMENTATION AND MAINTENANCE

CDRRPs are living documents that should evolve with changing dynamics within the airport and based on changing conditions at the local, state, and federal levels. In addition, it is important to develop competencies in the tasks that airports choose to implement. Provisions to support implementation and maintenance of CDRRPs are provided below. A Plan Maintenance Checklist is also provided in Appendix C13.

7.1 Developing Competencies

Training and exercises should be conducted to ensure that people assigned to support response operations are familiar with their roles and responsibilities, are provided an opportunity to build competencies, and have been tested.

Training and exercises can be delivered in the classroom, in the field, or virtually such as via webinars and online classes. Airports should interface with LEMAs and LPHAs and participate in training and exercises to develop competencies in general response and communicable disease–specific procedures. Beyond the required triennial exercise required by Part 139, specific training and exercise opportunities recommended for CDRRPs include:

1. **Initial Training and Familiarization** – Review of the components of the CDRRP with a specific focus on procedures and checklists to ensure that assignees understand their roles in tactical response.
2. **Tabletop Exercises** – Periodic discussion-based exercises provide an opportunity to develop and test command and control elements in relation to the procedures set forth in the CDRRP, and provide a no-fault opportunity to act out management roles.
3. **Drills** – Drills are focused, small-group, operations-based (functional) exercises that enable development of tactical capabilities to support communicable disease response and recovery operations. Strike team–specific drills provide a focused and relatively inexpensive method of developing and evaluating tactical capabilities.

Training and exercises provide succinct opportunities to operationalize the CDRRP within budget and time constraints.

7.2 Plan Review

Airports should consider assigning a Plan Steward who is responsible for maintenance, revision, and distribution of the CDRRP. Plan Steward tasks include:

1. Leading stakeholder meetings in performing periodic plan reviews, evaluation, and modification based on identified opportunities for improvement
2. Tracking revisions and updating hard and soft copies of the CDRRP
3. Maintaining a Table of Revisions for the CDRRP
4. Disseminating revisions to relevant individuals per established document control procedures

The Plan Steward, with advisory input from relevant stakeholders, should also direct an annual review of the CDRRP to identify necessary updates. It is recommended that impacted stakeholders are provided an opportunity to review proposed modifications and suggest alternative modifications. The Plan

Steward is expected to maintain final approval authority regarding all suggested modifications to the CDRRP.

7.3 Change Management

Airport stakeholders may request non-routine revisions to the CDRRP. Circumstances under which non-routine revisions may be warranted include:

- Lessons learned during response to an actual emergency or following an exercise
- Staffing changes that may impact assignments and contact information
- Changes in communicable disease threat posture
- Altered conditions or methods of response to an incident based on construction, operation, maintenance, or other circumstances
- Changes to applicable regulations or laws

Requests for revisions should be submitted to the Plan Steward, who should review suggested changes with stakeholders. If the Plan Steward approves suggestions for non-routine revisions, the following actions will be performed:

- Update the electronic copy of the CDRRP and note the new version date in the document.
- Maintain a copy of requested changes in the CDRRP file.
- Distribute transmittal form and electronic copy to all CDRRP holders.

It is recommended that all CDRRP holders be responsible for signing a transmittal form and returning it to the Plan Steward. Document control procedures for the CDRRP should be consistent with those noted in the AEP.

REFERENCES

Airport Operations and COVID-19: Business Recovery, Version 3, ACI World, Montreal, Quebec, Canada, July 2021.

Airport Roles in Reducing Transmission of Communicable Diseases, National Academies of Sciences, Engineering, and Medicine, Washington, DC: The National Academies Press, 2019, https://doi.org/10.17226/25367.

Antibiotic/Antimicrobial Resistance, Centers for Disease Control and Prevention; https://www.cdc.gov/drugresistance/biggest-threats.html, accessed February 21, 2022.

Buck, Richard A., *A better approach to managing COVID-19 and its effects*, Journal of Emergency Management, Volume 18, No.7, https://wmpllc.org/ojs/index.php/jem/issue/view/311.

CDC's Response to the 2014-2016 Ebola Epidemic – West Africa and the United States, Morbidity and Mortality Weekly Report, Supplement, Volume 65, No. 3, Centers for Disease Control and Prevention, July 8, 2016, https://stacks.cdc.gov/view/cdc/40216.

COVID Restart Risk Assessment, V1.0, International Civil Aviation Organization, 2022.

COVID-19: TSA Could Better Monitor Its Efforts to Reduce Infectious Disease Spread at Checkpoints, Report to Congressional Committees, United States Government Accountability Office, GAO-21-364, June 2021, https://www.gao.gov/assets/gao-21-364.pdf.

Developing and Maintaining Emergency Operations Plans, Comprehensive Preparedness Guide 101, Version 3, FEMA, September 2021, (fema.gov), https://www.fema.gov/sites/default/files/documents/fema_cpg-101-v3-developing-maintaining-eops.pdf.

FAA Advisory Circular 150/5200-31C, Airport Emergency Plan, U.S. Department of Transportation. May 1, 2010. https://www.faa.gov/documentLibrary/media/150_5200_31c_chg1.pdf.

Health Information for International Travel, CDC Yellow Book 2020, Centers for Disease Control and Prevention, https://wwwnc.cdc.gov/travel/page/yellowbook-home-2020.

Health Topics: Smallpox, World Health Organization, Smallpox, https://www.who.int/health-topics/smallpox#tab=tab_1, accessed February 16, 2022.

Homeland Security Exercise and Evaluation Program, U.S. Department of Homeland Security, January 2020, https://www.fema.gov/sites/default/files/2020-04/Homeland-Security-Exercise-and-Evaluation-Program-Doctrine-2020-Revision-2-2-25.pdf.

Hussy, Meghan, *The Evolution of Airport Queuing – Go Virtual*, ACI Insights, Airport Operations, April 12, 2021, https://blog.aci.aero/the-evolution-of-airport-queuing-go-virtual/.

National Preparedness Goal, Mission Areas and Core Capabilities, Second Edition, September 2015, https://www.fema.gov/sites/default/files/2020-06/national_preparedness_goal_2nd_edition.pdf.

National Preparedness System, https://www.fema.gov/emergency-managers/national-preparedness/system.

Our Risk for Infectious Diseases is Increasing Because of Climate Change, National Center for Emerging and Zoonotic Infectious Diseases, January 18, 2022, https://www.cdc.gov/ncezid/pdf/climate-change-and-infectious-diseases-H.pdf

Public Health Emergency Preparedness and Response Capabilities: National Standards for State, Local, Tribal, and Territorial Public Health, Centers for Disease Control and Prevention, October 2018, https://www.cdc.gov/cpr/readiness/00_docs/CDC_PreparednesResponseCapabilities_October2018_Final_508.pdf.

Receiving, Distributing, and Dispensing Strategic National Stockpile Assets: A Guide for Preparedness, Centers for Disease Control and Prevention, March 28, 2014, https://stacks.cdc.gov/view/cdc/77036.

Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended, USC Title 42, The Public Health and Welfare, Chapter 68, Disaster Relief, May 2019, https://www.fema.gov/sites/default/files/2020-03/stafford-act_2019.pdf.

Runway to Recovery: the United States Framework for Airlines and Airports to Mitigate the Public Health Risks of Coronavirus, Version 1.1, Jointly Issued by the U.S. Departments of Transportation, Homeland Security, and Health and Human Services, December 2020, https://www.transportation.gov/sites/dot.gov/files/2020-12/Runway_to_Recovery_1.1_DEC2020_Final.pdf.

Surveillance Case Definitions for Current and Historical Conditions, National Notifiable Disease Surveillance System, https://ndc.services.cdc.gov/, accessed between January 15, 2022 and February 14, 2022.

Travel Industry Pandemic Influenza Planning Checklist, Centers for Disease Control and Prevention, March 2007, https://www.cdc.gov/flu/pandemic-resources/pdf/travelchecklist.pdf

Zoonoses Fact Sheet, World Health Organization, https://www.who.int/news-room/fact-sheets/detail/zoonoses, accessed February 21, 2022.

Disease-Specific References, Centers for Disease Control and Prevention, accessed between January 15, 2022 and March 1, 2022:

Acanthamoeba: https://www.cdc.gov/parasites/acanthamoeba/index.html

Acute Flaccid Myelitis: https://www.cdc.gov/acute-flaccid-myelitis/index.html

Amebiasis: https://www.cdc.gov/parasites/amebiasis/index.html

Anaplasma phagocytophilum: https://www.cdc.gov/anaplasmosis/

Anthrax: https://www.cdc.gov/anthrax/index.html

Arboviruses: https://ndc.services.cdc.gov/case-definitions/arboviral-diseases-neuroinvasive-and-non-neuroinvasive-2015/

Avian Influenza (H5N1): https://www.cdc.gov/flu/avianflu/h5n1-people.htm

Babesiosis: https://www.cdc.gov/parasites/babesiosis/

Balamuthia mandrillaris: https://www.cdc.gov/parasites/balamuthia/index.html

Blastomycosis: https://www.cdc.gov/fungal/diseases/blastomycosis/index.html

Botulism: https://www.cdc.gov/botulism/

Brucellosis: https://www.cdc.gov/brucellosis/

Campylobacteriosis: https://www.cdc.gov/campylobacter/

Candida auris: https://www.cdc.gov/fungal/candida-auris/

Chickenpox (Varicella): https://www.cdc.gov/chickenpox/index.html

Cholera/Vibriosis: https://www.cdc.gov/cholera/

Coccidioidomycosis (Valley Fever): https://www.cdc.gov/fungal/diseases/coccidioidomycosis/index.html

Coronavirus (COVID-19): https://www.cdc.gov/coronavirus/2019-ncov/index.html

CP-CR Enterobacteriaceae: https://www.cdc.gov/hai/organisms/cre/index.html

Cryptococcosis (C. gattii, C. neoformans): https://www.cdc.gov/fungal/diseases/cryptococcosis-gattii/index.html

Cryptosporidiosis: https://www.cdc.gov/parasites/crypto/index.html

Diphtheria: https://www.cdc.gov/diphtheria/index.html

Ehrlichiosis: https://www.cdc.gov/ehrlichiosis/index.html

Enterovirus D68: https://www.cdc.gov/non-polio-enterovirus/about/ev-d68.html

Escherichia coli: https://www.cdc.gov/ecoli/

German Measles (Rubella): https://www.cdc.gov/rubella/

Giardiasis: https://www.cdc.gov/parasites/giardia/

H1N1 Influenza (2009 Pandemic): https://www.cdc.gov/flu/pandemic-resources/2009-h1n1-pandemic.html

Hansen's Disease (Leprosy): https://www.cdc.gov/leprosy/index.html

Hantavirus: https://www.cdc.gov/hantavirus/

Hantavirus: https://www.cdc.gov/hantavirus/surveillance/index.html

Hepatitis A: https://www.cdc.gov/hepatitis/

Hepatitis E: https://www.cdc.gov/hepatitis/hev/index.htm

Histoplasmosis: https://www.cdc.gov/niosh/topics/histoplasmosis/

Kawasaki Syndrome: https://www.cdc.gov/kawasaki/about.html

Lassa virus: https://www.cdc.gov/vhf/lassa/

Legionellosis: https://www.cdc.gov/legionella/index.html

Leptospirosis: https://www.cdc.gov/leptospirosis/

Listeriosis: https://www.cdc.gov/listeria/

Lujo virus: https://www.cdc.gov/vhf/lujo/

Lyme Disease: https://www.cdc.gov/lyme/index.html

Malaria: https://www.cdc.gov/parasites/malaria/index.html

Marburg virus: https://www.cdc.gov/vhf/marburg/index.html

Measles (Rubeola): https://www.cdc.gov/measles/

Melioidosis (Whitmore's Disease): https://www.cdc.gov/melioidosis/

Meningitis, bacterial: https://www.cdc.gov/meningitis/bacterial.html

Meningitis, viral: https://www.cdc.gov/meningitis/viral.html

Middle East Respiratory Syndrome (MERS)-CoV: https://www.cdc.gov/coronavirus/mers/

MRSA: https://www.cdc.gov/hai/organisms/mrsa-infection.html

Mumps: https://www.cdc.gov/mumps/index.html

Naegleria fowleri: https://www.cdc.gov/parasites/naegleria/general.html

New World Arenavirus: https://www.cdc.gov/vhf/virus-families/arenaviridae.html

Ornithosis/ Psittacosis: https://www.cdc.gov/pneumonia/atypical/psittacosis/index.html

Pertussis (Whooping Cough): https://www.cdc.gov/pertussis/index.html

Plague (Yersinia pestis): https://www.cdc.gov/plague/index.html

Poliovirus Infection: https://www.cdc.gov/polio/index.htm

Q Fever: https://www.cdc.gov/qfever/index.html

Rabies: https://www.cdc.gov/rabies/index.html

Respiratory Syncytial Virus: https://www.cdc.gov/rsv/index.html

Reye syndrome: https://ndc.services.cdc.gov/case-definitions/reye-syndrome-1990/

Rheumatic Fever: https://www.cdc.gov/groupastrep/diseases-public/rheumatic-fever.html

Rocky Mountain Spotted Fever (RMSF) (Rickettsiosis): https://www.cdc.gov/rmsf/index.html

Salmonellosis: https://www.cdc.gov/salmonella/

Severe Acute Respiratory Syndrome (SARS): https://www.cdc.gov/sars/index.html

Severe Acute Respiratory Syndrome: https://www.cdc.gov/sars/index.html, accessed February 16, 2022.

Shigella (Shigellosis): https://www.cdc.gov/shigella/index.html

Smallpox (Variola): https://www.cdc.gov/smallpox/index.html

Staphylococcus Aureus: https://www.cdc.gov/hai/organisms/staph.html

Streptococcus pneumoniae: https://www.cdc.gov/pneumococcal/index.html

Swine Flu (variants): https://www.cdc.gov/flu/swineflu/index.htm

Tetanus: https://www.cdc.gov/tetanus/index.html

Trichinellosis/Trichinosis: https://www.cdc.gov/parasites/trichinellosis/

Tuberculosis: https://www.cdc.gov/tb/default.htm

Tularemia: https://www.cdc.gov/tularemia/index.html

Typhoid Fever: https://www.cdc.gov/typhoid-fever/index.html

Viral Hemorrhagic Fever: https://www.cdc.gov/vhf/

VISA/VRSA: https://www.cdc.gov/hai/organisms/visa_vrsa/visa_vrsa.html

West Nile Virus: https://www.cdc.gov/westnile/index.html

Yellow Fever: https://www.cdc.gov/yellowfever/index.html

Zika: https://www.cdc.gov/zika/

APPENDIX A: LITERATURE REVIEW

This literature review focuses on specific communicable diseases, emergency planning guidance, public health guidance, and airport-specific literature. Documents summarized in this appendix were used to support development of this guidance document.

To augment Phase 2 research, the team reviewed four primary sources of literature:

1. Infectious disease literature
2. Emergency preparedness doctrine
3. Public health guidance
4. Airport-specific literature

Documents were reviewed to identify tactics for infectious disease preparedness, response, and recovery in airport security operations. Infectious disease–specific considerations combined with accepted emergency preparedness and public health best practices provide the information necessary to support effective infectious disease response and recovery planning within the airport community.

A1 Infectious Disease-Specific Literature

The Centers for Disease Control and Prevention (CDC) monitors over 120 notifiable diseases and conditions at the national level. The research team reviewed the CDC National Notifiable Disease Surveillance System[37] to identify the full list of reportable conditions and diseases. From an operational standpoint, three primary criteria regarding infectious diseases are important to support ongoing planning within airports:

1. Communicability
2. Symptoms and Severity
3. Geographic Range and Travel Patterns

Each of these criteria are described below in relation to relevant infectious diseases, and to support infectious disease preparedness, response, and recovery.

A1-1 Communicability

Highly communicable infectious diseases require intensive exposure-control measures. Pathogen types and diseases are categorized regarding communicability as described in Table A-1.

Table A-1. Communicability Definitions

Communicability	Mode of Transmission
Highly Communicable	Pathogen/disease is easily transferred from person to person via: • Direct casual contact • Breathing air in proximity to an infected person • Infection through eyes, nose, or mouth via droplets or fomites
Moderately Communicable	Pathogen/disease can be transferred from person to person but may require close and prolonged human contact or ingestion

[37] National Notifiable Disease Surveillance System, Surveillance Case Definitions for Current and Historical Conditions, https://ndc.services.cdc.gov/, accessed January 15 – February 14, 2022.

Communicability	Mode of Transmission
Low Communicability	Pathogen/disease is not easily transferred from person to person
Not Communicable	Cases of person-to-person transmission have not been identified

A1-2 Symptoms and Severity

Based on the categories for communicability described in Table A-1, 27 moderately and highly communicable infectious diseases are described in Table A-2. Understanding symptoms and severity of these diseases assists in training airport personnel to be able to identify potential cases and to react accordingly based on pre-incident planning.

Table A-2. Infectious Disease Summary: Highly and Moderately Communicable Diseases

Infectious Disease and Type	Transmission, Symptoms, and Severity[38]
Highly Communicable	
Chickenpox (Varicella) Type: Viral	Transmitted via contact. Symptoms include rash/fluid-filled blisters, fever, tiredness, loss of appetite, headache; serious in babies and people who are immunocompromised.
Coronavirus (COVID-19) Type: Viral	Transmitted via contact, infection through eyes, nose, or mouth via droplets or fomites. Symptoms include fever or chills, cough, shortness of breath or difficulty breathing, fatigue, muscle or body aches, headache, new loss of taste or smell, sore throat, congestion or runny nose, nausea or vomiting, diarrhea. 2–3% mortality rate.
German Measles (Rubella) Type: Viral	Transmitted via contact. Most have few noticeable symptoms. First symptom is a red rash on face spreading to the rest of the body. Other symptoms: low-grade fever, headache, mild pink eye, swollen lymph nodes, cough, and runny nose. 25–50% of people experience no symptoms.
Hepatitis A Type: Viral	Transmitted via food and water and contact. Symptoms include fatigue, nausea, stomach pain, and jaundice lasting up to 2 months. Most do not have long-lasting illness.
Measles (Rubeola) Type: Viral	Transmitted via contact. Symptoms: 7–14 days: high fever, cough, runny nose, and watery eyes; measles rash appears 3–5 days after the first symptoms. Potentially severe in immunocompromised and children.
Mumps Type: Viral	Transmitted via contact. Symptoms include puffy cheeks, tender, swollen jaw resulting from swollen salivary glands referred to as parotitis. Prior to parotitis, symptoms may include fever, headache, muscle aches, tiredness, and loss of appetite. Rarely, severe complications may include inflammation of varies organs.
Pertussis (Whooping Cough) Type: Bacterial	Transmitted via contact. Initial symptoms include runny nose, low-grade fever, mild occasional cough, apnea. Late-stage (1–2 weeks) symptoms include paroxysms of many rapid coughs followed by a high-pitched “whoop” sound, vomiting, and exhaustion. Potentially deadly for babies.
Poliovirus Infection Type: Viral	Transmitted via contact. Symptoms: 70% of infected persons have no visible symptoms; 25% of infections result in sore throat, fever, tiredness, nausea, headache, stomach pain; <1% result in paresthesia, meningitis, paralysis or weakness in the arms, legs, or both. Children are most susceptible.
Respiratory Syncytial Virus Type: Viral	Transmitted via contact. Symptoms include runny nose, decreased appetite, coughing, sneezing, fever, wheezing. Can lead to bronchiolitis and pneumonia in children.

[38] CDC references for symptoms are provided in Appendix A.

Infectious Disease and Type	Transmission, Symptoms, and Severity[38]
Shigella (Shigellosis) Type: Bacterial	Transmitted via food and water, close contact, and fomites. Symptoms: some will not have any while others have diarrhea, fever, stomach pain, feeling the need to pass stool even when the bowels are empty. Rare symptoms include post-infection arthritis, bloodstream infections, seizures, and hemolytic-uremic syndrome.
Moderately Communicable	
Hepatitis E Type: Viral	Transmitted via food, water, and close contact. Symptoms include fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, jaundice, dark urine, clay-colored stool, joint pain; ratio of symptomatic to asymptomatic infection ranges from 1:2 to 1:13.
Diphtheria Type: Bacterial	Transmitted via close contact (breathing or contact with open sores). Respiratory: Most common form which causes weakness, sore throat, mild fever, swollen glands in the neck. Toxin causes dead tissue build-up in throat/nose, which impedes breathing and swallowing. In the blood stream, the toxin causes heart, nerve, and kidney damage with severe impacts. Skin Infection: Causes open sores or ulcers; rarely severe.
Streptococcus pneumoniae Type: Bacterial	Transmitted via close contact. Symptoms include lung infection with fever, chills, cough, rapid/difficult breathing, chest pain; complications include empyema, pericarditis, lung collapse or abscess; 5% fatality rate.
Tuberculosis Type: Bacterial	Transmitted via close contact. Symptoms include cough, chest pain, coughing up blood or sputum, weakness or fatigue, weight loss, no appetite, chills, fever, sweating at night; latent to fatal.
Enterovirus D68 Type: Viral	Transmitted via water and close contact. Symptoms: No illness/mild symptoms are common; more severe symptoms include viral conjunctivitis, hand, foot, and mouth disease, meningitis, encephalitis, myocarditis, pericarditis, acute flaccid paralysis, inflammatory muscle disease. Death is rare.
H1N1 Influenza (2009 Pandemic) Type: Viral	Transmitted via close contact. Symptoms include fever, cough, sore throat, runny or stuffy nose, body aches, headache, chills and fatigue.
Severe Acute Respiratory Syndrome (SARS) Type: Viral	Transmitted via close contact. Symptoms include high fever (greater than 100.4°F), headache, an overall feeling of discomfort, body aches, and mild respiratory symptoms initially. 10–20% have diarrhea. Dry cough after 2–7 days; most patients develop pneumonia.
Smallpox (Variola) (eradicated) Type: Viral	Transmitted via close contact. Symptoms: Initially, high fever, head and body aches, vomiting. Early rash (most contagious) followed by pustular rash and scabs. Scabs fall off after about 3 weeks. By week 4, scabs are gone and the person is no longer contagious. 30% fatality rate.
Drug-Resistant Staphylococcus Aureus[39] Type: Bacterial	Transmitted via close contact; resistant to antibiotics; associated with hospitals and other healthcare facilities. Symptoms for MRSA include skin infection that appears as a bump, boil, or area that is red, tender and swollen, and is often confused with a spider bite. Potentially life threatening for patients in healthcare settings. Symptoms for VISA/VRSA are situational; bacteremia or sepsis when spread to the bloodstream, pneumonia, endocarditis, and osteomyelitis.
Typhoid Fever Type: Bacterial	Transmitted via food and water and close contact. Symptoms include sustained fever (103–104°F), weakness, stomach pain, headache, diarrhea or constipation, cough, loss of appetite; severe life threatening.

[39] Includes Methicillin Resistant Staphylococcus Aureus (MRSA), Vancomycin-Intermediate Staphylococcus Aureus (VISA) and Vancomycin-Resistant Staphylococcus Aureus (VRSA).

Infectious Disease and Type	Transmission, Symptoms, and Severity[38]
Viral Hemorrhagic Fever[40] Type: Viral	Transmitted via mosquitoes and close contact with animals or humans. Symptoms vary by virus; most exhibit mild symptoms: slight fever, weakness, headache. 10–20% may experience respiratory distress, hemorrhaging, vomiting, facial swelling, chest/back pain, shock, hearing loss, tremors, and encephalitis. Death may occur due to multi-organ failure; situational and potentially severe.
Avian Influenza (H5N1) Type: Viral	Transmitted via close contact with birds or humans. Symptoms include high fever, cough, sore throat, runny or stuffy nose, muscle aches, headache, conjunctivitis, vomiting, respiratory distress and failure, and severe pneumonia; 60% fatality rate.
Lassa virus Type: Viral	Transmitted via close contact with rodents or humans, ingestion or inhalation, and fomites. Symptoms: in 80% of patients, mild symptoms are undiagnosed and include slight fever, general malaise and weakness, and headache; 20% have more serious symptoms include hemorrhaging (gums, eyes, or nose), respiratory distress, repeated vomiting, facial swelling, pain in chest, back, and abdomen, and shock. Neurological problems may include hearing loss, tremors, and encephalitis. Death may occur within 2 weeks after symptom onset due to multi-organ failure. The most common complication is deafness. 1% of infections result in death.
Marburg virus Type: Viral	Transmitted via close contact with bats, humans or fomites; can spread via blood and bodily fluids. Symptoms: At 2–21 days, sudden onset of fever, chills, headache, and myalgia; ~5th day after onset, rash (chest/back/stomach) may occur. Other symptoms include nausea, vomiting, chest pain, sore throat, diarrhea, jaundice, inflammation of pancreas, weight loss, delirium, shock, hemorrhaging, and organ dysfunction. Fatality rate: 23–90%.
Middle East Respiratory Syndrome (MERS)-CoV Type: Viral	Transmitted via close contacts (all cases linked to the Arabian Peninsula). Symptoms include fever, cough, shortness of breath, diarrhea and nausea/vomiting. Complications include pneumonia and kidney failure. 30–40% fatality rate.
Meningitis, bacterial[41] Type: Bacterial	Varies but can be transmitted via food and close contacts. Symptoms include fever, headache, stiff neck, nausea, vomiting, photophobia, confusion. Newborns/children are at greatest risk. Can result in permanent disabilities.
Meningitis, viral[42] Type: Viral	Transmitted via close contact. Symptoms: In babies, fever, irritability, poor eating, sleepiness or trouble waking up from sleep, lethargy. In children and adults, fever, headache, stiff neck, photophobia, sleepiness or trouble waking up from sleep, nausea, irritability, vomiting, lack of appetite, lethargy.

A1-3 Geographic Range and Travel Patterns

Tracking passenger travel patterns and understanding specific symptoms that are abnormal in relation to locally prevalent infectious diseases may assist in identifying potentially foreign and severe diseases in collaboration with public health officials. General statements can be made regarding the distribution of pathogens internal and external to the United States. While not all of the infectious diseases below are common throughout the United States, they are generally present regionally and/or on a seasonal basis:

[40] A class of viruses that include Alkhurma, Chapare, Crimean-Congo, Lujo, Marburg, and Omsk hemorrhagic fevers, Ebola Virus Disease, Hantavirus Pulmonary Syndrome, Hemorrhagic Fever with Renal Syndrome (HFRS), Kyasanur Forest Disease, Lassa fever, Rift Valley fever, Severe Dengue, and Yellow Fever.
[41] Linked to Streptococcus pneumoniae, Group B Streptococcus, Neisseria meningitidis, Haemophilus influenzae, Listeria monocytogenes, and Escherichia coli.
[42] Linked to non-polio enteroviruses, Mumps virus, Herpesviruses, including Epstein-Barr virus, herpes simplex viruses, and varicella-zoster virus (which causes chickenpox and shingles), Measles virus, Influenza virus, Arboviruses, such as West Nile virus, and Lymphocytic choriomeningitis virus

- Chickenpox (Varicella)
- Coronavirus (COVID-19)
- Drug-Resistant Staphylococcus Aureus
- Enterovirus D68
- German Measles (Rubella)
- Influenza
- Hepatitis A
- Hepatitis E
- Measles (Rubeola)
- Meningitis, bacterial
- Meningitis, viral
- Mumps
- Pertussis (Whooping Cough)
- Respiratory Syncytial Virus
- Shigella (Shigellosis)
- Streptococcus pneumoniae
- Tuberculosis

Infectious diseases that are not commonly present in the United States and their known geographic presence are provided in Table A-3.

Table A-3. Infectious Diseases and Geographic Distribution

Infectious Diseases	Known Geographic Presence[43]
Diphtheria	Asia, South Pacific, Middle East, Eastern Europe, Haiti, and the Dominican Republic. Respiratory outbreaks have occurred in Indonesia, Bangladesh, Myanmar, Vietnam, Venezuela, Haiti, South Africa, and Yemen. Cutaneous diphtheria is common in tropical countries.
Lassa virus	Rural West Africa and more commonly in parts of Sierra Leone, Guinea, Liberia, and Nigeria.
Marburg virus	Angola, Democratic Republic of the Congo, Kenya, Uganda, and Zimbabwe. Cases involving travelers are generally associated with contact with bats.
MERS-CoV	Arabian Peninsula including Iran, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, United Arab Emirates, and Yemen. MERS has been identified in travelers returning to North America, Europe, Asia, and North Africa.
Polio	Afghanistan and Pakistan. Nearly eradicated in 2020, cases have increased and surfaced in Malaysia, the Philippines, sub-Saharan Africa, and Yemen.
Typhoid Fever	Approximately 31 million cases occur annually worldwide. Between 2008-2015, approximately 440 cases were reported annually in the United States, 90% among international travelers. High risk regions include Africa, Bangladesh, India, Pakistan, and Southeast Asia. Lower-risk areas include East Asia, South America, and the Caribbean.
Viral Hemorrhagic Fevers (VHFs)	In addition to Lassa and Marburg viruses, other VHFs are present worldwide, although their presence in the United States is limited and isolated. Other VHFs are associated with Africa, Eurasia, and the Middle East. A class of VHFs known as New World arenaviruses are associated with South America including but not limited to Argentina, Bolivia, Brazil, and Venezuela. Note: Hantavirus is present in the United States but rare and associated with exposure to rodents. Twenty (20) cases were reported in 2019 in 12 states.[44] Hantaviruses found in the United States are not transmitted from person-to-person.

While the probability of encountering these infectious diseases is low, it is important to understand the link between travel patterns and the symptoms of these diseases. Symptoms and travel locations can be

[43] CDC Yellow Book 2020, Health Information for International Travel, https://wwwnc.cdc.gov/travel/page/yellowbook-home-2020
[44] https://www.cdc.gov/hantavirus/surveillance/index.html

used to support identification of potential infectious diseases and allow requisite response and isolation in collaboration with public health officials.

A2 Emergency Preparedness Literature

In addition to disease-specific information, infectious disease planning in airports requires an understanding of local, state, and federal guidance for preparedness, response, and recovery. In response to the terrorist attacks of September 11, 2001, the federal government implemented the National Preparedness System (NPS),[45] which provides guidance to support integrated preparedness, response, and recovery at all levels of government.

The NPS and its components have evolved as a result of lessons learned from response to incidents of national significance. Important concepts within the NPS that support infectious disease preparedness at airports include:

- National Preparedness Goal (NPG)
- National Response Framework (NRF)
- National Incident Management System (NIMS)
- FEMA Comprehensive Preparedness Guide (CPG) 101, Developing and Maintaining State, Territorial, Tribal, and Local Government Emergency Plans
- Homeland Security Exercise and Evaluation Program (HSEEP)

Each of these NPS components is summarized below. In addition, analysis of COVID-19 response from the Journal of Emergency Management is summarized.

A2-1 National Preparedness Goal

The NPG defines the parameters required to be prepared for all types of emergencies based on five mission areas:[46]

1. **Prevention** – Preventing, avoiding, or stopping a threatened or actual [incident].
2. **Protection** – Protecting our citizens, residents, visitors, assets, systems, and networks against the greatest threats and hazards in a manner that allows our interests, aspirations, and way of life to thrive.
3. **Mitigation** – Mitigating the loss of life and property by lessening the impact of future disasters.
4. **Response** – Responding quickly to save lives, protect property and the environment, and meet basic human needs in the aftermath of an incident.
5. **Recovery** – Recover through a focus on the timely restoration, strengthening, and revitalization of infrastructure, housing, and the economy, as well as the health, social, cultural, historic, and environmental fabric of communities affected by an incident.

The NPG describes core capabilities that are distinct critical elements to facilitate success in the five mission areas described above. Definitions for core capabilities are adapted below to support infectious disease preparedness within airports:

[45] National Preparedness System, https://www.fema.gov/emergency-managers/national-preparedness/system.
[46] National Preparedness Goal, Mission Areas and Core Capabilities, Second Edition, September 2015, page 1, https://www.fema.gov/sites/default/files/2020-06/national_preparedness_goal_2nd_edition.pdf

- **Common Core Capabilities:**
  - **Planning** – Conduct a systematic process engaging the airport community in the development of executable strategic, operational, and tactical-level approaches to meet infectious disease–response objectives.
  - **Public Information and Warning** – Deliver coordinated, prompt, reliable, and actionable information to the airport community through the use of clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding the infectious disease as well as actions being taken and the assistance being made available, as appropriate.
  - **Operational Coordination** – Establish and maintain a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports the execution of core capabilities.
- **Prevention and Protection:**
  - **Intelligence and Information Sharing** – Provide timely, accurate, and actionable information resulting from the planning, direction, collection, processing, analysis, production, dissemination, evaluation, and feedback of available information concerning infectious disease threats. Information sharing is the ability to exchange intelligence, information, data, or knowledge among stakeholders as appropriate.
  - **Interdiction and Disruption** – Delay, divert, intercept, halt, apprehend, or secure infectious disease threats.
  - **Screening, Search, and Detection** – Identify, discover, or locate infectious disease threats through active and passive surveillance.
- **Protection:**
  - **Physical Protective Measures** – Implement and maintain risk-informed countermeasures, and policies protecting people associated with key operational activities.
  - **Risk Management for Protection Programs and Activities** – Identify, assess, and prioritize infectious disease risks to inform protection activities, countermeasures, and investments.
  - **Supply Chain Integrity and Security** – Strengthen the security and resilience of the supply chain to support infectious disease response.
- **Mitigation:**
  - **Long-term Vulnerability Reduction** – Build and sustain resilient systems and key resource lifelines so as to reduce the vulnerability to infectious diseases by lessening the likelihood, severity, and duration of the adverse consequences.
  - **Risk and Disaster Resilience Assessment** – Assess risk and resilience so that decision makers and stakeholders can take informed action to reduce risk and increase resilience.
- **Response:**
  - **Environmental Response/Health and Safety** – Conduct appropriate measures to ensure the protection of the health and safety of the public and workers from infectious diseases in support of responder operations and the affected stakeholders.
  - **Logistics and Supply Chain Management** – Deliver essential commodities, equipment, and services in support of infectious disease response functions.

- **On-Scene Security, Protection, and Law Enforcement** – Ensure a safe and secure environment through law enforcement and related security and protection operations for people and stakeholders conducting infectious disease response functions.
- **Operational Communications** – Ensure the capacity for timely communications in support of security, situational awareness, and operations by any and all means available, among and between affected stakeholders and all response personnel.
- **Public Health, Healthcare, and Emergency Medical Services** – Support disease prevention and exposure control measures through targeted public health, medical, and behavioral health support, and products to all affected stakeholders.
- **Situational Assessment** – Provide all decision makers with relevant information regarding the nature and extent of the infectious disease threat, any cascading effects, and the status of response.

- **Response and Recovery:**
  - **Infrastructure Systems** – Stabilize critical infrastructure functions, minimize health and safety threats, and efficiently restore and revitalize systems and services to support viable, resilient operations.
- **Recovery:**
  - **Economic Recovery** – Return economic and business activities to a healthy state and develop new business and employment opportunities that result in an economic viability.

A2-2 National Response Framework

The NRF provides a national strategy for building, sustaining, and delivering response core capabilities identified in the NPG. Among other things, the NRF describes 15 Emergency Support Functions (ESF) and the federal agencies assigned to lead and support each ESF. Most federal ESFs support a number of the response core capabilities. Understanding ESFs is important for two reasons:

1. Large scale infectious disease response operations, such as during an epidemic or pandemic, may require coordination with federal ESFs to implement effective exposure control measures.
2. Many local and state agencies are also organized in ESFs; while they may have slight differences in scope and assignees, understanding the concept behind ESFs supports collaboration during an infectious disease incident.

Table A-4 provides a brief summary of the ESFs that have infectious disease–related functions, and the primary federal agencies assigned to each ESF.

Table A-4. Emergency Support Functions (ESF)

ESF	Infectious Disease–Related Functions	Primary Federal Agency
ESF 1 – Transportation	Coordinates/manages transportation systems, infrastructure, and airspace. Ensures the safety and security of the national transportation system. Supports logistics for public health assets such as the Strategic National Stockpile (SNS).	Department of Transportation

ESF	Infectious Disease–Related Functions	Primary Federal Agency
ESF 3 – Public Works and Engineering	Coordinates technical assistance, engineering expertise, construction management, and other support to prepare for, respond to, and recover from a disaster or an incident. Infectious disease–specific response functions may include emergency modifications, engineering services and construction management, and emergency contracting to support exposure control-related infrastructure modifications.	Department of Defense, U.S. Army Corps of Engineers
ESF 5 – Information and Planning	Supports and facilitates multi-agency planning and coordination for operations involving incidents requiring federal coordination. Functions include deliberate and crisis action planning, and information collection, analysis, visualization, and dissemination.	DHS, FEMA
ESF 7 – Logistics	Coordinates comprehensive incident resource planning, management, and sustainment capability to meet the needs of citizens and responders. Functions include comprehensive national incident logistics planning (masks, disease treatment regimens, vaccines) and resource support (supplies and contracting services).	General Services Administration / DHS, FEMA
ESF 8 – Public Health and Medical Services	Lead ESF for infectious disease response. Coordinates assistance in response to an actual or potential public health emergency. Functions include public health services, medical surge support, behavioral health services, and mass fatality management.	Department of Health and Human Services
ESF 11 – Agriculture and Natural Resources	Coordinates functions designed to protect the U.S. food supply, respond to pest and disease incidents impacting agriculture, and protect natural and cultural resources. May have a role in response to a zoonotic disease involving animals, insects, or plants.	Department of Agriculture
ESF 13 – Public Safety and Security	Limited role in infectious disease–specific response. Coordinates public safety and security capabilities and resources to support a full range of incident management activities. Functions include protecting public health assets, if deployed, and public safety and security in support of public health operations.	Department of Justice, Bureau of Alcohol, Tobacco, Firearms, and Explosives
ESF 14 – Cross-Sector Business and Infrastructure	Coordinates cross-sector operations with infrastructure, businesses, and government partners with particular focus on preventing cascading failures between sectors. Functions may include assessment, analysis, and situational awareness of cross-sector challenges, and facilitating cooperation across critical infrastructure sectors to acquire medical countermeasures (vaccines, antimicrobials, mask, and other personal protective equipment [PPE]).	DHS, Cybersecurity and Infrastructure Security Agency
ESF 15 – External Affairs	Coordinates release of accurate, coordinated, timely, and accessible public information to affected audiences, including the government, media, non-governmental organizations, and private sector. Works closely with state and local officials to ensure broad outreach. Functions include establishing public affairs and the Joint Information Center, intergovernmental affairs, and congressional affairs.	DHS

The ESFs described in the NRF provide distinct assignments to address infectious disease response capabilities described in the NPG. In addition to the NRF, each ESF has its own Annex that describes in more detail the specific functions served by ESF constituent agencies.

A2-3 National Incident Management System

The NIMS provides a standardized tactical approach to allow multi-jurisdictional and multi-discipline coordination during complex emergency operations. As part of NIMS, the Incident Command System (ICS) provides a systematic and proven management system to provide direction and control during emergency response operations. ICS provides a management strategy for response and recovery utilizing eight components that provide an interactive framework to support direction and control of tactical operations:

1. **Common Terminology** – Use of plain English or clear text without the use of radio codes or organization-specific codes ensures that all responders understand communications.
2. **Modular Organization** – The ICS organization, called an Incident Management Team (IMT), develops in a top-down, modular fashion based on the size and complexity of an incident and the specific hazards created by the incident, under the criteria of span of control (see #5).
3. **Integrated Communications** – Communication procedures are interoperable, and situational awareness is maintained and communicated throughout the ICS response structure.
4. **Management by Objectives/Incident Action Plans** – Using an Incident Action Plan (IAP), incidents are managed by establishing objectives, identifying tactics to achieve objectives, and identifying resources and assignments during a specific timeframe called the operational period (usually 8–12 hours in duration).
5. **Manageable Span of Control** – Span of control is the number of resources (personnel and equipment) that can be adequately commanded (controlled) within an incident's organizational structure. The kind of incident, nature of the task, hazard and safety factors, and distances among response elements will influence span of control considerations.
6. **Establishing Pre-Designated Incident Facilities** – To support response and recovery operations and facilitate resourcing and deployment, pre-designated incident facilities, such as Emergency Operations Center (EOC), incident command posts, staging areas, helibases, and other facilities are necessary.
7. **Comprehensive Resource Management** – Utilizing the Command and General Staff in the ICS structure, resource management processes are established to allow effective, efficient, and timely procurement, use, maintenance, and check-in of all resources.
8. **Unity of Command** – ICS emphasizes that each member of the structure is ensured only one direct supervisor to preclude conflicting assignments. Unity of command also includes the concept of formal transfer of command when leadership changes.

ICS is designed to enable effective and efficient incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure. It is used to organize field-level operations for a broad spectrum of emergencies, from small to complex incidents. When needed, sections are established, each of which may be divided into functional groups and units. As incident complexity increases, the organization expands from the top down as functional responsibilities are delegated. The number of management positions reflects the need to adequately address the requirements of the incident.

Homeland Security Presidential Directive-5 requires adoption of NIMS by state and local organizations as a condition for federal preparedness assistance, response, and recovery. In addition, NIMS and ICS are incorporated into FAA guidance,[47] which requires their use in Airport Emergency Plans (AEP).

A2-4 FEMA Comprehensive Preparedness Guide 101

CPG 101, *Developing and Maintaining State, Territorial, Tribal, and Local Government Emergency Plans*,[48] provides guidance to support response and recovery planning, and integrates concepts from the NPG, NRF, NIMS, National Infrastructure Protection Plan (NIPP), and lessons from recent emergencies. CPG 101 also describes how state and local planning integrates with federal planning. The document contains the primary sections outlined below:

- **A2.4.1 – The Basics of Planning**
  Emergency planning provides a methodical way to engage stakeholders in considering the life cycle of a potential crisis, determining required capabilities, and establishing a framework for roles and responsibilities.
- **A2.4.2 – Understanding the Planning Environment**
  This chapter explains the environment within which planning occurs, outlines links between different levels of government, and describes state, local, tribal, territorial, and insular area emergency operations planning activities in the context of the NPS, NPG, NIMS, and NRF. In terms of local planning (i.e., airport-level planning), CPG 101 highlights the importance of using plans and EOC functions to ensure interoperability with state, territorial, and/or federal plans.
- **A2.4.3 Identifying the Right Plan for the Job**
  Plans for responding to an infectious disease incident should reflect how an airport would actually respond. The plan should account for the various disciplinary jurisdictions, including public health, hospital systems, and emergency management. Consultation with the local agency having primacy over infectious disease response is vital. Because AEPs are regulatory documents that require specific inclusions and FAA approval, it is not uncommon for airports to develop standalone annexes for infectious diseases.
- **A2.4.4 – The Planning Process**
  This chapter provides extensive information to support the actual planning process, including collaborative steps that are recommended when developing a plan.
- **A2.4.5 – Creating an EOP Base Plan**
  This chapter describes key elements of an EOP base plan, and provides concepts that are important to infectious disease planning and coordination with the AEP.
- **A2.4.6 – Adding EOP Annexes**
  This chapter describes common types of annexes that may address specific response functions and specific threats and hazards (e.g., infectious diseases). Functional annexes focus on critical operational functions and those responsible for carrying them out.

[47] FAA Advisory Circular 150/5200-31C, Airport Emergency Plan. U.S. Department of Transportation. May 1, 2010. https://www.faa.gov/documentLibrary/media/150_5200_31c_chg1.pdf

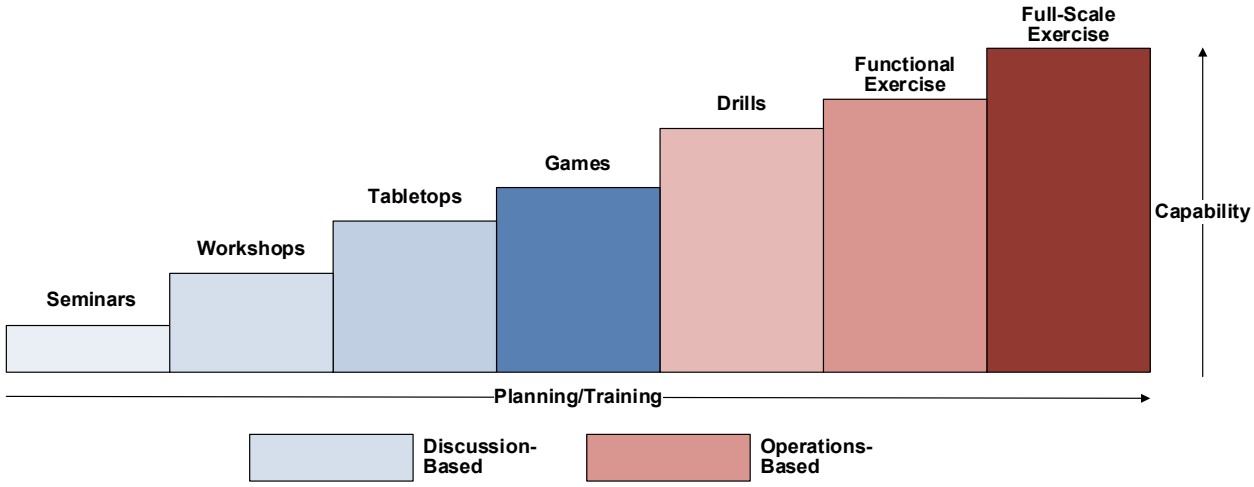
[48] Developing and Maintaining Emergency Operations Plans, Comprehensive Preparedness Guide 101, Version 3, FEMA, September 2021, (fema.gov), https://www.fema.gov/sites/default/files/documents/fema_cpg-101-v3-developing-maintaining-eops.pdf

A2-5 Homeland Security Exercise and Evaluation Program

Understanding roles and responsibilities during an emergency and in concert with established plans requires competency among those assigned to response and recovery roles. HSEEP[49] establishes procedures for planning, designing, and conducting training and exercises. HSEEP also provides guidelines for developing Multi-Year Training and Exercise Plans, focusing on a three- to five-year window to establish a step-wise, graduated training and exercise program.

Performing training and exercises in a controlled manner over time helps to build competencies and ensure compliance with and understanding of plans. Seven types of exercises are defined in HSEEP, including discussion-based and operations-based exercises. Discussion-based exercises familiarize participants with current plans, policies, agreements, and procedures, or may be used to develop new plans, policies, agreements, and procedures. Operations-based exercises validate plans, policies, agreements and procedures, clarify roles and responsibilities, and identify resource gaps in an operational environment. HSEEP uses a building block approach, illustrated in Figure A-1, to ensure that exercise participants progress at a logical pace.

Figure A-1. HSEEP Building Block Approach



Source: Ross & Baruzzini

The HSEEP methodology for individual exercises includes planning, design, development, conduct, and evaluation.

A2-6 Journal of Emergency Management

Throughout 2020, the Journal of Emergency Management published substantial applied research regarding response and recovery measures implemented for COVID-19. Among the research conducted, a historical perspective entitled "A better approach to managing COVID-19 and its effects,"[50] by Richard A. Buck, provides context for using emergency preparedness doctrine described above to better manage pandemics and other infectious disease emergencies. The content is summarized below:

[49] Homeland Security Exercise and Evaluation Program, U.S. Department of Homeland Security, January 2020, https://www.fema.gov/sites/default/files/2020-04/Homeland-Security-Exercise-and-Evaluation-Program-Doctrine-2020-Revision-2-2-25.pdf

[50] Buck, Richard A., A better approach to managing COVID-19 and its effects, Journal of Emergency Management, Volume 18, No.7, https://wmpllc.org/ojs/index.php/jem/issue/view/311

- As a national disaster, the NRF and the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act)[51] are applicable to a pandemic or regionalized epidemic.
- The extent and severity of the pandemic warrants engagement of the NRF to mobilize the combined resources of the country to overcome multiple complex challenges.
- Appropriate and lawful federal functions during a pandemic include:
  - Providing support to institutions on the frontlines treating the virus
  - Preventing its spread
  - Shoring up the economy
  - Supporting critical infrastructure resilience (e.g., transportation)
  - Addessing societal challenges brought about by the pandemic

Relevant NRF functions suggested with respect to pandemics and infectious disease response and recovery include:

- **PPE, Ventilators, Test Kits** – ESF 7 (Logistics) and ESF 8 (Public Health and Medical) are capable of establishing a national program for supply of ventilators, test kits, and PPE. The General Services Administration and the Defense Logistics Agency have the capacity to identify existing supplies and manufacturing capability.
- **Contact Tracing** – ESF 8 (Public Health and Medical) has the capacity to launch a national program for contact tracing in combination with state and local governments. Under state-run programs, ESF 8 can engage with states to help divert existing employees and to hire new people to be trained in contact tracing using national guidelines.
- **National Recovery Planning** – Generally, disaster recovery begins while the response activity is ongoing. For a pandemic or regional epidemic, recovery should be approached on a national basis. The National Disaster Recovery Framework, an adjunct to the NRF, provides a planning process whereby federal agencies, state and local governments, and the private sector work together to plan for restoring societal sectors affected by the disaster to a level of functionality at least as good as before the disaster.

The concepts presented in the Journal of Emergency Management support using federal doctrine for infectious disease and pandemic response and recovery planning within airports and other critical infrastructure.

A3 Public Health Emergency Preparedness Guidance

In addition to general emergency preparedness doctrine, Public Health Emergency Preparedness (PHEP) guidance provides infectious disease–specific response protocols that are useful in planning. PHEP guidance is summarized below.

A3-1 Public Health Emergency Preparedness and Response Capabilities

The CDC issued *Public Health Emergency Preparedness and Response Capabilities, National Standards for State, Local, Tribal, and Territorial Public Health*[52] to establish standards for capabilities

[51] The Stafford Act provides an orderly and continuing means of assistance by the Federal Government to State and local governments in carrying out their responsibilities to alleviate the suffering and damage resulting from a variety of disasters. https://www.fema.gov/sites/default/files/2020-03/stafford-act_2019.pdf

[52] Public Health Emergency Preparedness and Response Capabilities: National Standards for State, Local, Tribal, and Territorial Public Health, Centers for Disease Control and Prevention, October 2018, https://www.cdc.gov/cpr/readiness/00_docs/CDC_PreparednesResponseCapabilities_October2018_Final_508.pdf

to support PHEP at the local and state levels. The standards support the NPS and NPG as they relate to public health emergencies, and address infectious disease outbreaks and coordination needs among a broad base of partners and stakeholders.

The CDC identifies 15 distinct capabilities to support a national capability-based framework for ESF 8 at the local, state, and federal levels. While these capabilities are focused on public health, airports may benefit from understanding the planning parameters under which public health agencies operate. The 13 capabilities that the research team identified as relevant to airports are summarized in Section 1.3.2 of this document.

The infectious disease preparedness parameters provide insight to airport authorities as to the types of services that can be coordinated through public health agencies in support of effective exposure control among passengers, employees, and other stakeholders.

A3-2 Receiving, Distributing, and Dispensing SNS Assets

The CDC's SNS is a repository of potentially life-saving pharmaceuticals and medical supplies for use in a public health emergency in which local supplies have been or may be depleted. The SNS program includes a wide range of medical countermeasures (MCM) and response capabilities. *Receiving, Distributing, and Dispensing Strategic National Stockpile Assets: A Guide for Preparedness*[53] is intended to help public health and emergency management personnel at the local, and state levels of government prepare to request and make effective use of MCMs to prevent, mitigate, or treat adverse health effects from an intentional, accidental, or naturally occurring public health emergency. The guide describes 12 functional areas to support SNS planning at the local and state levels:

1. Developing a Medical Countermeasure Response Plan
2. Management of Medical Countermeasure Operations
3. Requesting SNS Stockpile Assets
4. Receiving, Staging, and Storing Medical Countermeasures
5. Managing Medical Countermeasure Inventory
6. Distributing Medical Countermeasures
7. Dispensing Medical Countermeasures
8. Public Information and Communication
9. Strategic and Tactical Communications
10. Securing Assets, Personnel, and Operations
11. Hospital and Treatment Center Coordination
12. Training, Exercising, and Evaluating Plans

Items included in the SNS are referred to as formulary. Various federal workgroups and agencies collaborate to determine which items to include in the formulary based on specific threats to the United States as well as other factors. The SNS formulary has grown to encompass a wide range of MCMs, including both pharmaceutical and non-pharmaceutical interventions. These MCMs can be used to prevent, mitigate, or treat adverse health effects from any type of public health emergency. The SNS formulary is configured in various response capabilities to facilitate rapid movement around the nation. Understanding how the SNS formulary is selected, what assets are available, and how the CDC will

[53] Receiving, Distributing, and Dispensing Strategic National Stockpile Assets: A Guide for Preparedness, Centers for Disease Control and Prevention, March 28, 2014, https://stacks.cdc.gov/view/cdc/77036.

deploy those assets can aid jurisdictions in developing plans for requesting, receiving, distributing, and dispensing MCMs.

The SNS will be shipped via aircraft in most cases. Airports may be asked to support receipt of materiel, to escort public health personnel, or to coordinate security of materiel. Therefore, it may be useful to work with local public health officials to coordinate existing plans.

A3-3 CDC's Response to the 2014-2016 Ebola Epidemic

Major aspects of the response to Ebola epidemic are summarized in *CDC's Response to the 2014–2016 Ebola Epidemic – West Africa and the United States*.[54] The CDC collaborated with national and international partners to conduct surveillance, contact tracing, diagnostic testing, community engagement, infection prevention and control, border health, emergency management, and vaccine evaluation to avert a potentially widespread disease incident. Key activities included:

- Supporting incident management systems in Guinea, Liberia, and Sierra Leone to permit effective action to contain Ebola.
- Improving case detection and contact tracing to stop Ebola transmission.
- Strengthening surveillance and response capacities in surrounding countries to reduce the risk of further spread.
- Improving infection control in Ebola treatment units and general health care facilities, including training tens of thousands of health care workers to safely care for Ebola patients and working to ensure access to and correct use of PPE.
- Conducting detailed epidemiologic analyses of Ebola trends and transmission patterns in communities and healthcare facilities to target and optimize epidemic control.
- Supporting laboratory needs at the CDC's Viral Special Pathogens Branch in Atlanta and transferring CDC laboratory expertise to the field.
- Reducing the likelihood of spread of Ebola through travel, including working with international partners and federal and state health officials to:
    - Establish exit and entry risk assessment and management procedures.
    - Establish protocols to track travelers arriving in the United States from affected countries until 21 days after their last potential exposure.
- Disseminating risk communication materials designed to help change behavior, decrease rates of transmission, and confront stigma in West Africa and the United States.
- Assisting state health departments in responding to domestic Ebola concerns, including the response in Dallas after the first U.S. case of Ebola imported in a traveler from Liberia.
- Establishing trained and ready hospitals in the United States capable of safely assessing, managing, and caring for possible Ebola patients.
- Modeling predictions for the course of the epidemic, which helped galvanize international support and enabled CDC to act on and align global action to reach goals for control.
- Providing logistic support for an ambitious CDC deployment.
- Fostering hope for a long-term solution for Ebola, including rollout of vaccine trials in Sierra Leone.

[54] CDC's Response to the 2014-2016 Ebola Epidemic – West Africa and the United States, Morbidity and Mortality Weekly Report, Supplement, Volume 65, No. 3, Centers for Disease Control and Prevention, July 8, 2016, https://stacks.cdc.gov/view/cdc/40216.

To reduce the chance of importation of Ebola into the United States, CDC worked with CBP, DHS, and state and local public health departments to establish a system to screen and follow up with all travelers returning from Ebola-affected countries in West Africa. Travelers arriving from these countries were:

- Routed to one of five U.S. airports
- Triaged by CBP agents
- Screened for febrile illness
- Provided with CARE (Check and Report Ebola) kits consisting of a thermometer, a prepaid cell phone, and educational materials
- Given an opportunity to ask questions of the CDC

Returning travelers were then tracked by state and local health departments for symptoms consistent with Ebola during the 21-day incubation period. Between October 2014 and December 2015, approximately 29,000 persons were monitored. Health departments also implemented plans to facilitate safe transport of travelers to a hospital ready to assess them for Ebola if fever or other compatible symptoms developed.

A3-4 Travel Industry Pandemic Influenza Planning Checklist

In May 2006, the White House released the National Strategy for Pandemic Influenza, which identified federal planning criteria to combat an influenza pandemic and identify response and recovery parameters at the local, state, and federal levels. After release of this document, HHS and the CDC developed additional tools to support planning, including the *Travel Industry Pandemic Influenza Planning Checklist*,[55] which identifies important steps that the travel industry can take to prepare for an influenza pandemic. While influenza-focused, the checklist provides a general framework for all infectious diseases and is focused on keeping travelers and workers in the travel sector safe. Planning areas and criteria are summarized below:

- Plan for the impact of an influenza pandemic on your business.
- Plan for the impact of an influenza pandemic on your employers and travelers.
- Establish policies and procedures to be implemented during an influenza pandemic.
- Allocate resources to protect your employees and travelers during an influenza pandemic.
- Educate and communicate with your employees and travelers.
- Coordinate with external organizations and help your community.

A4 Airport-Specific Literature

In addition to the airport-specific literature reviewed, additional literature from industry and government sources was reviewed and is summarized below. The information focuses on tactical planning for airport infectious disease response and recovery.

A4-1 ACI Airport Operations and COVID-19: Business Recovery

The Airports Council International (ACI) document *Airport Operations and COVID-19: Business Recovery*[56] is a comprehensive overview of lessons learned for airports during the pandemic that are useful in airport recovery. Chapters include:

[55] Travel Industry Pandemic Influenza Planning Checklist, Centers for Disease Control and Prevention, March 2007, https://www.cdc.gov/flu/pandemic-resources/pdf/travelchecklist.pdf.
[56] Airport Operations and COVID-19: Business Recovery, Version 3, ACI World, Montreal, Quebec, Canada, July 2021.

1. Guiding Principles
2. Management and Planning for Restart
3. Airport Operations Centers
4. Safety and Operations
5. COVID-19 Testing, Vaccination and Health Passes/Certificates
6. Employees and Human Resources
7. Health Safety
8. Security
9. Passenger Experience
10. Waste Management
11. Recovery Communications
12. Role of Airports in Vaccine Distribution

Subcategories within the Security chapter include:

- Operational Continuity
- Access Control Measures
- Training
- Health Protocol Procedural Changes
- Security Screening

The document provides specific and valuable information to support recovery of airport security operations, and stresses the importance of maintaining and incorporating long-term strategies and tactics to reduce exposure to infectious diseases in airport environments.

A4-2 ICAO COVID Restart Risk Assessment

The ICAO *COVID Restart Risk Assessment Checklist*[57] is focused on recovery and reconstitution, and provides a series of checklists to assist aviation stakeholders in evaluating if measures authorized due to the pandemic should be removed or amended, if new risks have emerged that require mitigation, and if measures require adjustment as passenger and flight activity increases. Checklist categories include:

- Personal Security
- Training
- Equipment
- Airport Security
- Aircraft Security
- Cargo Security
- In-Flight Supplies Security

The subcategories within the Airport Security checklists are:

- Access Passes (personnel and vehicle)
- Perimeter Security
- Landside Security
- Screening Processes
- Integrity and Protection of Security Restricted Area

[57] COVID Restart Risk Assessment, V1.0, International Civil Aviation Organization, 2022.

- Airport Supplies
- Other Parties

Checklists in this document provide a starting point for aviation stakeholders to evaluate post-pandemic operations and recovery.

A4-3 ACRP Airport Roles in Reducing Transmission of Communicable Diseases

The Airport Cooperative Research Program (ACRP) conducted a workshop in March 2018 to explore airport roles in reducing transmission of communicable diseases, the findings of which are documented in ACRP Conference Proceedings 55.[58] Conference attendees recognized that air travel makes it possible for travelers to move from isolated rural villages to almost any major city worldwide in less than 36 hours, which increases the possibility of wide geographic disease transmission. The CDC Division of Global Migration and Quarantine provides valuable support in preventing importation and spread of communicable diseases by using systems to prevent, detect, and respond to disease transmission between travelers and other globally mobile populations. Relevant planning concepts include:

- Airport Risk Management Activities
- Developing an Infectious Disease Response Plan
- Testing the Communicable Disease Response Plan
- Reevaluating and Revising the Communicable Disease Response Plan
- Communicating with Travelers and the Public
- Communicating with Airport Personnel
- Communicating with the Media
- Infrastructure

A4-4 Federal Aviation Administration

As originally written, FAA requirements for airport emergency plans (49 CFR § 139.325) did not explicitly require infectious disease planning. However, FAA Advisory Circular 150/5200-31C contains the following provision:

> **Suspected Communicable Diseases.** In the case of persons exhibiting signs/symptoms of a possible disease requiring quarantine, the airport will be required to contact state and/or Federal CDC. The diseases subject to quarantine are established by Presidential Executive Order 13295. In the event that quarantine is required to protect public health, the emergency should be conducted in two phases: Short-term (approximately 6-8 hours) and Long-term (lasting several days).

[58] Airport Roles in Reducing Transmission of Communicable Diseases, National Academies of Sciences, Engineering, and Medicine, Washington, DC: The National Academies Press, 2019, https://doi.org/10.17226/25367.

Diseases specified in Presidential Executive Order 13295 include:

- Cholera
- Diphtheria
- Tuberculosis
- Plague
- Smallpox
- Yellow Fever
- Viral Hemorrhagic Fevers
  - Lassa, Marburg, Ebola, Crimean-Congo
  - South American
  - Others not yet isolated or named
- Severe Acute Respiratory Syndrome

A4-5 Runway to Recovery

As indicated during Phase 1, the *Runway to Recovery: the United States Framework for Airlines and Airports to Mitigate the Public Health Risks of Coronavirus*[59] was jointly issued by the U.S. Departments of Transportation, Homeland Security, and Health and Human Services to provide guidance to airports and airlines for implementing measures to mitigate public health risks associated with COVID-19. The Runway to Recovery provides recommendations in the categories below:

- General Risk Mitigation
  - Passenger and Aviation Worker Education
  - Collecting Information to Support Contact Tracing
  - Social Distancing
  - Masks
  - Cleaning and Disinfection
  - Passenger Health Assessments
    - Health Attestations
    - COVID-19 Testing
    - Public Health Corridors
    - Temperature Screening
    - Vaccination
  - Separation of Crew/Aviation Workers and Passengers
  - Minimize Document Handling and Physical Contact between Airport Workers and Passengers
  - Daily/Routine Reporting
- Airport Ground Transport
- Airport Common Areas, Terminals, and Retail
  - Contactless Check-in
  - Checked Baggage Drop
  - Airport Security Checkpoints
- Aircraft
  - Seat Assignment Processes

[59] Runway to Recovery: the United States Framework for Airlines and Airports to Mitigate the Public Health Risks of Coronavirus, Version 1.1, Jointly Issued by the U.S. Departments of Transportation, Homeland Security, and Health and Human Services, December 2020, https://www.transportation.gov/sites/dot.gov/files/2020-12/Runway_to_Recovery_1.1_DEC2020_ Final.pdf.

- Adjusted Boarding Processes
- Aircraft Ventilation Adjustments
- Limit or Suspend Onboard Custoemr Services
- Lavatory Use
- Personal Protective Equipment for Crew and Ill Passengers
- Additional Crew Protections
- Disembarkation Procedures
- Aircraft Disinfecting
- U.S. Customs and Border Protection (CBP) Clearance
- Baggage Claim

The Runway to Recovery provides a strategic framework to implement infectious disease measures throughout the airport travel continuum in response to a pandemic or regional epidemic. It addresses most public-facing airport and airline operations with respect to exposure control, but it does not address specific security operations.

A4-6 GAO-21-364: Assessment of TSA COVID-19 Measures at Checkpoints

The Coronavirus Aid, Relief, and Economic Security (CARES) Act required the Government Accountability Office (GAO) to conduct monitoring and oversight of government agencies' efforts, including those of the TSA, to prepare for, respond to, and recover from the COVID-19 pandemic. The resulting TSA-focused report, GAO-21-364,[60] assessed measures taken by the TSA to reduce the spread of COVID-19 at passenger checkpoints. GAO provided two recommendations to TSA:

1. The TSA Administrator should take steps to ensure more complete monitoring of Transportation Security Officer implementation of measures to reduce the spread of infectious diseases at screening checkpoints.
2. The TSA Administrator should take steps to analyze available data related to the implementation of its COVID-19 measures to identify patterns of successes and failures across all airports, and use findings to share lessons learned and remediate any deficiencies.

A4-7 Technologies to Support Exposure Control

Research indicated very little literature regarding the use of technology for exposure control in airport security operations. The ACI document *Airport Operations and COVID-19: Business Recovery* suggests the following technologies for targeted use in exposure control:

- Thermal cameras to quickly detect potentially sick passengers
- Use of sensing, building management, communication technologies, and internet of things-based devices to sense, monitor, and control air quality and to achieve optimal air quality through:
  - Higher ventilation
  - Less recirculation
  - Better directional flow
  - Increased attention to sensitive, high-occupancy spaces such as security checkpoints
- Use of technology to monitor passenger use of PPE

[60] TSA Could Better Monitor Its Efforts to Reduce Infectious Disease Spread at Checkpoints, Report to Congressional Committees, US Government Accountability Office, GAO-21-364, June 2021, https://www.gao.gov/assets/gao-21-364.pdf.

Other identified exposure control technologies include:

- High-efficiency particulate air (HEPA) filtration
- Ultraviolet germicidal technology such as robotic cleaning systems
- Electrostatic sprayers to automatically sanitize high-touch points

Use of virtual queueing is also growing at airports, particularly in Europe.[61] While most virtual queueing is used to make the passenger journey more convenient, it offers significant advantages to support social distancing and reduced occupancy during peak periods.

[61] https://blog.aci.aero/the-evolution-of-airport-queuing-go-virtual/.

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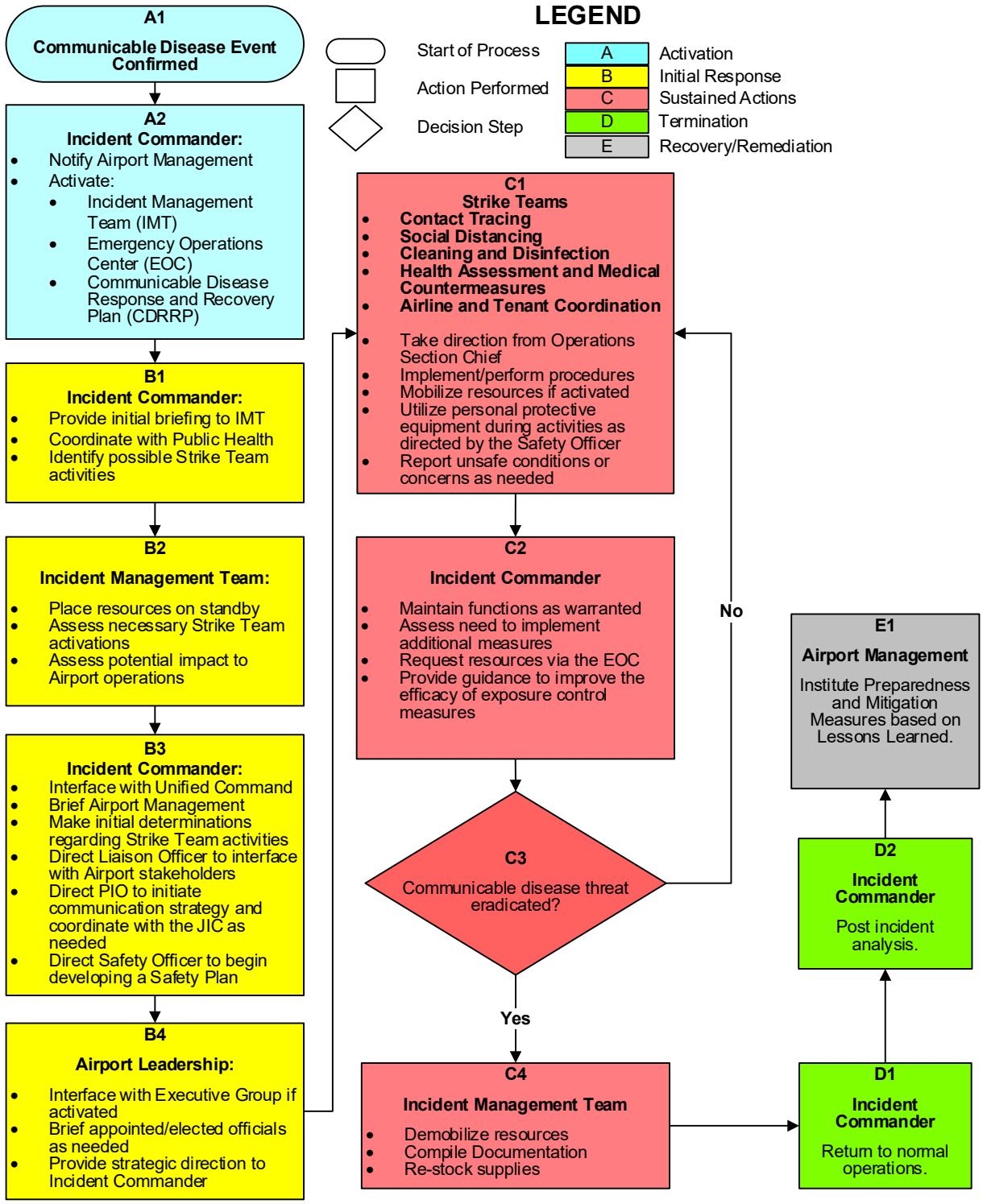
C1 – Communicable Disease Response Flow Diagram and Checklist

The response flow diagram and checklist provided below are organized by Discovery, Initial Response, Sustained Actions, Termination and Follow-up, and Remediation.



Checklist for Infectious Disease and Pandemic Response

Box	Measure/Action Item	✓	Date/ Time
A1	**Discovery:** Communicable disease event confirmed at the local, state, and or federal levels.		
A2	**Incident Commander:** • Notify Airport Management • Activate Emergency Operations Center (EOC) and Incident Management Team • Activate Communicable Disease Response and Recovery Plan (CDRRP)		
B1	**Incident Commander:** • Provide initial briefing to the IMT (in coordination with the EOC Manager, if applicable) identifying known aviation sector impacts • Coordinate with Public Health • Identify possible Strike Team activities		
B2	**Incident Management Team:** • Place resources anticipated to be needed on standby • Assess necessary Strike Team activations • Assess potential impact to local airport operations		
B3	**Incident Commander:** • Interface with Unified Command • Brief Airport Management • Make initial determinations regarding Strike Team activities • Direct Liaison Officer to interface with airport stakeholders		
B4	**Airport Leadership:** • Interface with Executive/Policy Group, if activated • Brief appointed/elected officials as needed • Provide strategic direction to Incident Commander		
C1	**Strike Teams:** **Contact Tracing Strike Team** **Social Distancing Strike Team** **Cleaning and Disinfection Strike Team** **Health Assessment and Vaccination Strike Team** **Airline and Tenant Coordination Strike Team** • Take direction from Operations Section Chief • Implement/perform procedures as directed • Mobilize resources if activated • Utilize PPE during assigned activities as directed by the Safety Officer • Report unsafe conditions or concerns as needed		
C2	**Incident Commander:** • Maintain functions as warranted • Assess the need to implement additional measures • Request resources via the EOC • Provide guidance to improve the efficacy of exposure control measures		

Box	Measure/Action Item	✓	Date/ Time
C3	**Decision Point: Communicable Disease Threat Eradicated?** If "yes", go to Box C4. If "no", go to Box C1; maintain necessary Strike Team operations.		
C4	**Incident Management Team:** • Demobilize resources • Compile documentation • Re-stock supplies		
D1	**Incident Commander:** Return to normal operations		
D2	**Incident Commander:** Post incident analysis – Conduct a post-incident after-action review: • Utilize Homeland Security Exercise and Evaluation Program (HSEEP) principles to conduct the review • Interface with response agencies during post incident review • Update response plans and resources as necessary		
E1	**Airport Management:** Institute Preparedness and Mitigation Measures based on lessons learned: • Address policy issues as necessary • Authorize additional training and exercises as necessary • Perform other mitigation measures identified during the review Work with the local Emergency Management Agency to recover costs, if applicable. See Appendix C12, Recovery Checklist, for more details.		

C2 – Tool to Develop Emergency Temporary Ordinance

A model for developing ordinances to support implementation of exposure control measures in airports is provided below. Since there is significant variation in legal requirements across the United States, airports should consult with legal counsel and local governments to develop emergency temporary ordinances in response to a communicable disease. Customization is necessary for location purposes and emergency-specific factors.

Cover Letter

Airport Name
Amendment to Normal Operating Rules
Emergency Temporary Ordinance for Public Health Exposure Control Measures

Pursuant to the authority delegated by _____, it is hereby adopted and ordered that the attached *Amendment to Normal Operating Rules, Emergency Temporary Ordinance for Public Health Exposure Control Measures* is effective as of <DATE> at <TIME>. The *Emergency Temporary Ordinance*, adopted pursuant to <enter authority> will remain in effect for the duration of relevant directives from <Public Health, Local/State/Federal Authorities>.

Airport Name _____

Signature: _____

Name: _____

Title _____

Date: _____

Ordinance Structure

Emergency Temporary Ordinance for Public Health Exposure Control Measures

Purpose. This Amendment to normal operating procedures (Emergency Ordinance), is being issued by <AIRPORT/AUTHORITY> on <DATE> in response to <CONDITIONS OR AUTHORIZATIONS OF LOCAL, STATE, AND/OR FEDERAL AGENCIES>. Due to the ongoing public health threat posed by <PATHOGEN/DISEASE>, authorities (list them) have issued orders to implement exposure control measures including (define as needed):

- Closing areas of the airport to limit exposure and separate populations
- Prohibiting non-ticketed passengers from entering public areas of the airport
- Prohibiting passenger pick-up inside the terminal
- Requiring masks and/or other Personal Protective Equipment (PPE)
- Enforcement of exposure control measures by law enforcement

Note: Local, state, or federal orders that have been issued and provide a basis for operational changes should be listed here.

This Temporary Emergency Ordinance is designed to respond to the _____ public health threat and to continue to promote compliance with _____. The Emergency Ordinance is also designed to:

1. Protect the public health, safety, interest, and general welfare at _____;
2. Restrict or prevent any activity or action that would interfere with the safe, orderly, and efficient use of the Airport by its passengers, operators, tenants, and authorized users;
3. Promote consistency with the actions by airlines and airports nationally; and
4. Support similar actions by businesses and governmental authorities operating at the Airport.

Definitions

"Airport" means…<define jurisdictional confines as it relates to measures being implemented>.

"Face Covering" means a covering made of cloth, fabric, or other soft or permeable material, without holes, slits, exhalation valves, or punctures, that completely covers only the nose and mouth and surrounding areas of the lower face and is secured to the head with ties or ear loops. NOTE: Adjust for specific public health requirements and reference available public health guidance for face coverings.

"Public Areas" means all non-sterile areas on Airport property including the Terminal, the Terminal Roadway, public parking lots and garages, and all sidewalks, corridors, elevators, escalators, pedestrian bridges, tunnels and walkways connecting the Terminal, Terminal Roadway, and public parking garages and lots <define further as needed>.

"Terminal" means the primary building at the Airport where Airport Customers come to fly in and fly out of the Airport.

"Terminal Roadway" means the roadway adjacent to the Airport providing access to the Terminal and intended for Airport use by the general public and permitted ground transportation operators.

General Conduct and Use of Public Areas

Terminal Access. To ensure the safety, security and health of airline passengers, employees, and contractors working at the Airport, no person may enter or be present in the Public Areas of the Airport, except for persons who can demonstrate they fall within one or more of the following:

1. Ticketed airline passengers;
2. Authorized individuals assisting ticketed passengers on an arriving or departing flight;
3. Individuals whose employment requires their presence in one or more Public Areas;
4. Any Airport employee during their regular working hours; and
5. Other individuals who have been authorized by Airport officials to enter and be present in one or more Public Areas.

Persons whose only purpose is to greet an arriving passenger are required to remain outside the Terminal unless the arriving passenger requires assistance. Free speech activities at the Terminal remain subject to the permit requirements <list> and locations for free speech activities may be assigned or modified based on the purposes identified in the Emergency Ordinance. All participants in such activities must comply with requirements set forth in this ordinance (based on state and local laws, orders, and public health guidance).

Face Coverings. All members of the public and all those working at the Airport are required to wear a face covering in the Airport, rental car center, ride share or taxi waiting area, <list other locations>. The following persons are exempt from the face covering requirement (adjust based on public health guidance):

1. Children under the age of two years
2. Anyone with a medical condition that prevents them from wearing a face covering
3. Anyone who is communicating with a person who is deaf or hard of hearing when the ability to see the mouth is essential for communication
4. Anyone complying with an official requirement to remove face coverings for security or identification purposes
5. Anyone for whom wearing a mask would create a risk to workplace health, safety or job duty as determined by relevant safety guidelines or federal regulations
6. Anyone temporarily removing a face covering in accordance with federal, state or local directives (e.g., when dining or taking medications)

Enforcement

Enforcement Officers. <Identify authorities that allow law enforcement to remove or evict from the Airport any person who enters or is present at the Airport in violation of the Emergency Ordinance. Also enlist other Airport officials as enforcement officers if allowed by jurisdiction, authority, and/or statute.>

Enforcement Process and Sanctions. Enforcement of the Emergency Ordinance shall be consistent with the enforcement procedures <list authorities and rules>. Failure to comply with measures required by the Emergency Ordinance is a <Class A misdemeanor as an example>. In addition, failure to comply with a direction to leave the Airport may result in the individual being excluded from the Airport for a period of <up to ninety (90) calendar days, as an example> and/or arrested and charged for trespassing under <applicable law>.

C3 – Social Distancing Checklist

The Social Distancing Strike Team may be activated during a communicable disease event. This Checklist provides distinct steps to implement various social distancing strategies throughout an airport. Cooperation between airport authorities, airlines, and other service providers is vital to achieve social distancing goals.

Note: This checklist is based on COVID-19 parameters; adjustments should be made for specific pathogens based on public health guidance.

No.	Measure/Action Item	Implemented	Notes
1. General Social Distancing			
1.1	Use recommended distancing as provided by local, state, or federal public health authorities. If no distance is stated, use six feet as standard social distance measure.		
1.2	Help people to stay socially distanced in shared spaces via appropriate measures such as floor markings, blocking terminal or gate area seating, and placing seating the proper distance apart.		
1.3	Use measures that support maintaining six feet of distance between families/social units.		
1.4	Employ strategies for social distancing in ground transports within the airport (e.g., trains, buses, etc.).		
1.5	Inform passengers when it may not be possible to meet social distancing expectations, and emphasize the importance of observing other preventive measures, including strict hand hygiene, respiratory etiquette, and wearing a face mask.		
2. Separating Populations			
2.1	Minimize contact between aircrews/aviation workers and passengers to the extent possible and consistent with their job requirements.		
2.2	Expedite aircrews and aviation workers through shared screening areas, separate from the general public.		
2.3	Provide separate on-airport transport options for aviation workers if possible.		
2.4	Require use of masks or cloth face coverings, particularly when it is not possible to maintain the recommended 6-foot distance between persons.		
3. Minimizing Contact			
3.1	Utilize work from home arrangements for employees when possible.		

No.	Measure/Action Item	Implemented	Notes
3.2	Minimize document exchanges between passengers and aviation workers. For example, contactless, electronic document exchanges may be enabled during check-in, at the screening checkpoint, and when boarding aircraft.		
3.4	Install barriers to maintain separation between passengers and aviation workers, and workers should wear face coverings and gloves when touching or transferring items such as passenger documents, money, and credit cards.		
3.5	Discourage sharing pens and other writing implements.		
3.6	Provide workers with easy access to a sufficient supply of new gloves and hand sanitizer, and require hand sanitizing after glove removal.		
4. Airport Common Areas			
4.1 Concessions, Shopping, and Restaurants			
4.1.1	Enforce social distancing at counters, tables, and in public areas.		
4.1.2	Implement increased cleaning of high-touch areas.		
4.1.3	Install acrylic transmission barriers at cashier counters.		
4.1.4	Limit contact points and encourage contactless payment.		
4.1.5	Offer PPE items for sale at retail shops.		
4.1.6	As needed, limit hours of operation to reduce exposure.		
4.1.7	As needed, temporarily close underutilized venues to reduce exposure.		
4.1.8	Follow capacity limits based on local and state guidelines.		
4.1.9	Comply with all other local and state health requirements and guidelines.		
4.2 Contactless Check-in			
4.2.1	Encourage passenger use of online check-in options to reduce use of kiosks or ticket agent interactions.		
4.2.2	When passengers must use kiosks, provide hand sanitizer stations and disinfecting wipes nearby.		
4.2.3	Clean kiosks frequently if used with a disinfectant approved for the pathogen of concern.		
4.2.4	Install barriers to maintain social distance when passengers must consult with ticket agents.		
4.2.5	Enforce use of gloves among agents and others when touching passenger documents.		
4.2.6	Enforce use of masks or cloth face coverings among agents and other public workers, even if behind barriers.		

No.	Measure/Action Item	Implemented	Notes
4.2.7	Encourage participation in DHS biometrics, seamless, and touchless passenger facilitation programs to increase contactless check-in and passenger flows.		
4.3 Checked Baggage Drop			
4.3.1	Ensure baggage handlers wear gloves when handling passenger baggage.		
4.3.2	Train handlers on proper use of gloves and hand hygiene to prevent virus contamination.		
4.3.3	Provide handlers with an adequate supply of hand washing materials, disinfectant wipes, and gloves to change as needed.		
4.4 Airport Security Checkpoints			
4.4.1	Promote the use of digital boarding passes and biometrics where feasible.		
4.4.2	Promote increased allowances (up to 12 fl. oz., increased from 3.4) of hand sanitizer in passenger education materials and signage.		
4.4.3	Work with TSA to promote new practices in passenger education materials and signage including PPE requirements for officers and passengers, use of acrylic shield barriers, increased separation from passengers, new screening procedures to limit touching of passengers, enforcement of PPE and social distancing requirements, updated training and safety guidance, and increased cleaning of high-touch surfaces.		
4.4.4	Support passenger metering by directing traffic and enforcing distancing between passengers and TSOs at all stages of the security screening process.		
4.4.5	Work with TSA to promote practices to minimize wait times in passenger education materials.		
4.4.6	Work with TSA to adopt and promote new technologies in passenger education materials and signage. New checkpoint technologies include continued deployment of Credential Authentication Technology (CAT) units that minimize touch during passenger travel document check.		
4.5 Baggage Claim			
4.5.1	Prohibit access of persons waiting for arriving passengers from the baggage claim area unless special accommodations are needed.		
4.5.2	Use signage to promote social distancing, masks usage, and block off/mark chairs for social distancing.		

No.	Measure/Action Item	Implemented	Notes
4.6 Ground Transportation			
4.6.1	Work with rental car and taxi companies to implement sanitizing measures in vehicles with special attention to high touch areas.		
4.6.2	Require ground transportation drivers (buses, taxis, etc.) to wear a mask or face covering while transporting passengers.		
4.6.3	Work with rental car and taxi companies to implement low and no-touch operations including advance check in, curbside pickup, and delivery options.		
4.6.4	Encourage social distancing while in queue for and while on airport ground transport using passenger spacing (floor marking, blocking seats).		
4.6.5	Regulate passenger loads and increase the number of transport vehicles in use to reduce the passenger volume for each vehicle, if possible.		

C4 – Tools for Health Assessment and Contact Tracing

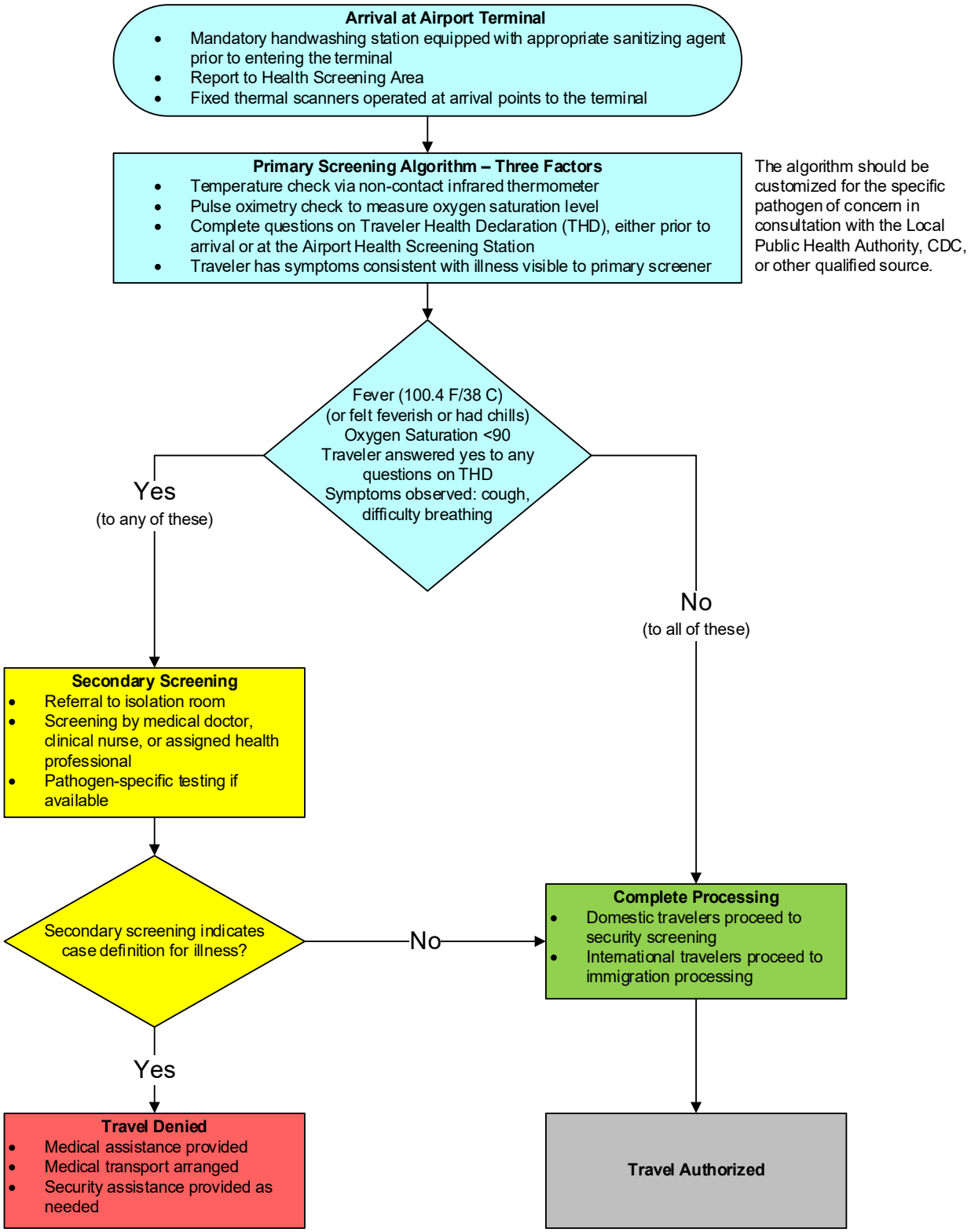
C4-1 – Symptom Screening Flow Diagram

C4-2 – Communicable Disease-Specific Testing Checklist

C4-3 – Contact Tracing Form

C4-1 – Symptom Screening Flow Diagram

The diagram below illustrates a symptom screening flow that can be used in conjunction with a Traveler Health Declaration (THD) or other symptom- and travel-specific questionnaire. The Primary Screening Algorithm must be customized for the specific pathogen or disease of concern in consultation with a relevant public health authority.



C4-2 – Communicable Disease-Specific Testing Checklist

Considerations for developing a pathogen-specific testing plan for airport use are provided below. Support from the Local Public Health Authority (LPHA), Local Emergency Management Agency (LEMA), and local healthcare providers is recommended.

No.	Measure/Action Item	Complete	Notes
1. Airline and Passenger Considerations			
1.1	Verify travel destinations that require evidence of a negative test as a prerequisite for entry or relief from other restrictions.		
1.2	Support reliable and timely testing prior to departure to facilitate domestic and international travel.		
1.3	Coordinate with airlines, LPHA, healthcare providers and others to develop a sound plan.		
1.4	Institute a broad communication strategy to alert travelers of testing requirements, services provided, where to receive them, and proper timing of tests.		
2. Testing Logistics			
2.1	Evaluate testing capacity and steps that can be taken to increase passenger flow. *Testing capacity at airports may range from 100–1,000 tests per day.*		
2.2	Work with the LPHA to implement expedited models based on mass treatment principles.		
2.3	Use a reservation system for testing to minimize wait times and avoid crowding.		
2.4	Optimal testing site include parking lots and garages, and other pre-security public areas. Indoor locations require consideration for social distancing and ventilation.		
2.5	Work with the LPHA and healthcare providers to identify and evaluate pathogen-specific testing types. Factors include: • Cost and who bears it • Accuracy and requirements based on location • Wait time (For COVID-19 testing, 15–60 minutes for rapid tests, 24–48 hours for more accurate tests; times will vary significantly based on pathogen)		
2.6	Identify potential third-party vendors to manage and facilitate testing. Evaluate benefits and/or risks associated with contracting testing to an outside company.		
2.7	Consider reporting methods; electronic reporting is recommended to reduce contact and to expedite results.		
2.8	Identify verification needs and how it is to be performed (i.e., required by the airline at ticketing/check-in or the LPHA).		
2.9	Determine the best method of administering testing in consultation with the LPHA. Options may include private health organization, state/LPHA, third party contractor, air carrier, etc.		
2.10	Identify locations for segregating positive cases until transport can be arranged.		

No.	Measure/Action Item	Complete	Notes
3. Procedures for Positive Tests			
3.1	Ensure contact tracing protocols are in place and implemented upon receiving notification of a positive result. LPHA generally conducts contact tracing. The Airport authority and/or airline may be asked to support contact tracing.		
3.2	Segregate passengers who test positive and provide them with information regarding medical transport and treatment, as needed.		
3.3	Upon receipt of a positive test result, notify: • LPHA, LEMA, and CDC • Airport leadership, ARFF, and on-site law enforcement • Air Carriers, CBP, FAA and TSA (local) Note: Follow LPHA guidelines for reporting; avoid names and HIPAA-related data.		

C4-3 – Contact Tracing Form

This form can be used to support health assessment and contact tracing for persons who have been or may have been exposed or tested positive for a specific communicable disease. While it is not recommended that airports conduct contact tracing outside of the airport or among passengers, contact tracing may be useful for tracking employee exposure. Airports or public health representatives can use this form to help identify contacts who may have been exposed.

Step 1

Identify date of first symptoms

If you have had symptoms, put the date you first felt sick OR if you have had no symptoms then put your date of testing

_____ / ____ / _____

Step 2

Who has been in your house with you since the date of your first symptoms?

Include people who live in your home, and people who may have visited like friends, a babysitter or anyone else providing in-home services.

No.	Name of Person	Date Last in Home	Their Phone Number
1			
2			
3			
4			
5			

Step 3

Make a list of what you did each day since the date of your first symptoms with as much detail as possible.

Include things like socializing with neighbors, going to work, running errands, appointments, social or recreational activities outside the house, and if you used public transportation to get there. Use another piece of paper if needed.

Day One ____ / ____ / _____		People you were with		
Activity	Location	Name	Address	Phone Number

Day Two ____ / ____ / _____		People you were with		
Activity	Location	Name	Address	Phone Number

Day Three ___ / ___ / _____

Activity	Location	People you were with		
		Name	Address	Phone Number

Day Four ___ / ___ / _____

Activity	Location	People you were with		
		Name	Address	Phone Number

Day Five ___ / ___ / _____

Activity	Location	People you were with		
		Name	Address	Phone Number

Day Six ___ / ___ / _____

Activity	Location	People you were with		
		Name	Address	Phone Number

Day Seven ___ / ___ / _____

Activity	Location	People you were with		
		Name	Address	Phone Number

C5 – Cleaning and Disinfection Process

Information provided in Appendix C5 includes the following:

- **C5-1 – Cleaning and Disinfection Checklist:** Provides procedures for routine cleaning, cleaning when known exposure has occurred, and to support general hygiene among employees and travelers.
- **C5-2 – Cleaning and Disinfection Log:** The Cleaning and Disinfection Log provides a form to document regular cleaning and disinfection for specific areas within an airport.
- **C5-3 – Ventilation, Filtration, and Air Cleaner Maintenance Checklist:** Provides measures to use ventilation, filtration, and air cleaners to achieve exposure reduction goals based on accepted best practices.

C5-1 – Cleaning and Disinfection Checklist

Recommended procedures are provided below for routine cleaning, cleaning when known exposure has occurred, and to support general hygiene among employees and travelers.

EPA-registered disinfectants include:

- List N Tool:COVID-19 Disinfectants: https://cfpub.epa.gov/wizards/disinfectants/
- List Q: Disinfectants for Emerging Viral Pathogens: https://www.epa.gov/pesticide-registration/disinfectants-emerging-viral-pathogens-evps-list-q

No.	Measure/Action Item	Complete	Notes
1. General Program Elements			
1.1	Require all areas with potential for human contact and transmission be disinfected per defined schedules as recommended by the CDC.		
1.2	Provide hand sanitizer stations and disinfecting wipes in common areas where passengers are expected to touch surfaces frequently.		
1.3	Increase the frequency of cleaning high-touch surfaces such as door handles, armrests, elevator buttons, escalator/stair handrails, point-of-sale equipment, and kiosks.		
2. Routine Cleaning and Disinfection			
2.1	Cleaning personnel should wear disposable non-fabric gloves (e.g., latex, nitrile) and follow PPE guidelines defined in the Safety Plan.		
2.2	Clean prescribed areas with a general detergent or soap and water appropriate for surfaces and finishes.		
2.3	Use an EPA-registered disinfectant in accordance with the manufacturer's directions, and wear additional PPE as suggested by the manufacturer.		
2.4	Following initial cleaning, disinfect all high-contact solid surfaces in the area including, but not limited to handrails, doorknobs and push plates, desks or work surfaces, keypads, computer mice, light switches, elevator buttons, bathroom sinks, toilet handles, paper dispensers, kitchenette countertops, water cooler controls, etc. Allow the disinfectant to remain on surfaces until air dry.		
2.6	Kiosks • Provide hand sanitizer stations and disinfecting wipes nearby. • Clean kiosks frequently with a disinfectant approved for the pathogen of concern.		
2.7	Ground Transportation • Work with rental car agencies and taxi services to implement sanitizing measures in vehicles with special attention to high-touch areas. • Require fogging of vehicles on a daily or periodic basis as needed.		

No.	Measure/Action Item	Complete	Notes
3. Post Exposure Cleaning and Disinfection			
3.1	Implement post-exposure cleaning and disinfection when: • Confirmed or assumed-confirmed cases of a communicable disease are identified • Symptomatic individuals have traveled recently (within 14 days) to a location of known outbreak • Symptomatic individuals have been in direct contact with a person who is confirmed to be infected with a communicable disease		
3.2	Empty any area meeting post-exposure criteria of occupants and close for up to 24 hours, if necessary.		
3.3	Perform cleaning and disinfection using products that are EPA-registered and approved, and as directed by the manufacturer for the surface type.		
3.4	Prior to entering an area of known exposure, don appropriate PPE required for the specific cleaners and disinfectants used. Safety glasses and disposable suits or gowns (e.g., Tyvek) may be required in addition to non-fabric disposable gloves (e.g., latex, nitrile).		
3.5	Following closure of the area, open any available windows and doors to ensure adequate ventilation throughout the cleaning and disinfection period.		
3.6	Proceed through the area and clean surfaces with detergent or soap and water.		
3.7	Following cleaning, disinfect by wiping solid surfaces in one direction. Surfaces may include handrails, doorknobs and push plates, desk or work surfaces, keypads, computer mice, light switches, elevator buttons, bathroom sinks, toilet and paper dispensers, kitchenette countertops, water cooler controls, etc.		
3.8	Clean/disinfect all high-contact porous surfaces, such as carpets and partitions, with appropriate cleaners indicated for use by manufacturers, or with a disinfectant from the EPA list.		
3.10	All disinfectants should remain on surfaces until air dry.		
3.11	Remove and dispose of gloves and other PPE, being careful not to contaminate the wearer or other surfaces. Dispose of PPE and cleaning materials in a sealed plastic bag.		

C5-2 – Cleaning and Disinfection Log

As a method of exposure control, regular cleaning and disinfection should be performed as needed for shared objects, high-touch surfaces, and high-transit areas such as restrooms and common areas. Examples of high-touch surfaces include meeting tables, chair armrests, doorknobs, cabinet pulls, refrigerator door handles, faucets, toilets, and light switches. This log supports scheduling and tracking of cleaning and disinfection of specific areas.

Location	Date	Time	Type of Cleaning		Staff Responsible for Cleaning	Staff Signature	Notes	Manager Initials
			Regular daily cleaning	High-touch surfaces/ high transit areas				
			☐	☐				
			☐	☐				
			☐	☐				
			☐	☐				
			☐	☐				
			☐	☐				
			☐	☐				
			☐	☐				
			☐	☐				
			☐	☐				

C5-3 – Ventilation, Filtration, and Air Cleaner Maintenance Checklist

This checklist is adapted from the ASHRAE document, *Core Recommendations for Reducing Airborne Infectious Aerosol Exposure*.[62] Recommendations support use of ventilation, filtration, and air cleaners to achieve exposure reduction subject to constraints including comfort, energy use, and costs.

No.	Measure/Action Item	Complete	Notes
1. Public Health Guidance			
1.1	Follow all regulatory and statutory requirements and recommendations for social distancing, wearing of masks and other PPE, administrative measures, circulation of occupants, reduced occupancy, hygiene, and sanitation.		
2. Ventilation, Filtration, Air Cleaning			
2.1	Provide and maintain at least required minimum outdoor airflow rates for ventilation as specified by applicable codes and standards.		
2.2	Use combinations of filters and air cleaners that achieve MERV 13 or better levels of performance for air recirculated by HVAC systems.		
2.3	Only use air cleaners for which evidence of effectiveness and safety is clear.		
2.4	Select control options, including standalone filter and air cleaners, that provide desired exposure reduction while minimizing associated energy penalties.		
3. Air Distribution			
3.1	Where directional airflow is not specifically required or not recommended as the result of a risk assessment, promote mixing of space air without causing strong air currents that increase direct transmission from person-to-person.		
4. HVAC System Operation			
4.1	Maintain temperature and humidity design set points.		
4.2	Maintain equivalent clean air supply required for design occupancy whenever anyone is present in the space served by a system.		
4.3	When necessary to flush spaces between occupied periods, operate systems for a time required to achieve three air changes of equivalent clean air supply.		
4.4	Limit re-entry of contaminated air that may re-enter the building from energy recovery devices, outside air intakes, and other sources to acceptable levels.		
5. System Conditioning			
5.1	Verify that HVAC systems are functioning as designed.		

[62] American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE), Core Recommendations for Reducing Airborne Infectious Aerosol Exposure, ASHRAE Epidemic Task Force, January 6, 2021, https://www.ashrae.org/file%20library/technical%20resources/covid-19/core-recommendations-for-reducing-airborne-infectious-aerosol-exposure.pdf

C6 – Medical Countermeasures Checklists

C6-1 – Checklist for Receipt of Medical Resources

C6-2 – Checklist for Providing Medical Countermeasures to Airport Personnel

C6-3 – Medical Countermeasure Point of Distribution Checklist

C6-1 – Checklist for Receipt of Medical Resources

As a possible receiving site for federal resources such as the Strategic National Stockpile, vaccines, and/or other medical supplies during a communicable disease outbreak, the following checklist provides guidance for receiving mutual aid support.

No.	Measure/Action Item	Complete	Notes
1. Aircraft Rescue and Firefighting (ARFF) Coverage			
1.1	Verify size of aircraft to be received transporting medical supplies/vaccines.		
1.2	Ensure that ARFF coverage is sufficient to support incoming aircraft.		
2. Snow Removal			
2.1	Ensure that snow removal is performed prior to arrival of airborne resources, if applicable.		
3. Parking Areas			
3.1	Ensure sufficient parking areas are provided to support the types and numbers of aircraft involved (e.g., parking areas with sufficient pavement strength, clearance areas, etc.)		
3.2	Coordinate with other airport users so that appropriate parking locations are available for medical transport aircraft when needed and to alert others to avoid the area during offload operations.		
4. Air Traffic Control Coordination			
4.1	Coordinate receipt and logistics operations with Air Traffic Control (ATC) before and during any medical supply transport flight movement on the airfield.		
4.2	Alert ATC of any changes or modifications of medical supply logistics plans.		
5. Law Enforcement Coordination			
5.1	Coordinate with the TSA, CBP, and/or local law enforcement for resource support.		
5.2	Coordinate awareness of any credible threats to the shipments.		
5.3	Coordinate for extra security needs, including at vehicle and pedestrian gates.		
5.4	Coordinate to minimize customs clearance delays for shipments crossing international borders.		
5.5	Coordinate vehicular traffic control measures.		
5.6	Facilitate timely completion of any TSA or CBP, hazardous cargo, or security inspections that may be required.		
6. Priority Access			
6.1	Extend priority access to the airfield for freight vehicles to safely move shipments of medical resources off-airport.		
6.2	Consider landside vehicle control and a possible staging area for freight vehicles awaiting their cargo.		

No.	Measure/Action Item	Complete	Notes
7. Media Response			
7.1	Provide a media meeting area where updates regarding medical shipments can be provided to the press.		
7.2	Coordinate with relevant agency Public Information Officers to support consistent messaging.		
8. Airport Operations Staff			
8.1	Assess Airport Operations staffing needs to assist in managing transport of shipments (e.g., “Follow-Me” vehicles, etc.).		
8.2	Activate additional staff as needed.		
9. Contingency Planning			
9.1	Identify backup measures in case the shipment cannot proceed according to the anticipated schedule.		
9.2	Consider backup medical supply storage locations as well as aircraft parking and freight vehicle parking areas. *Note: Some vaccines and pharmaceuticals are very perishable and require specialized storage. Consultation with public health officials is recommended.*		

C6-2 – Checklist for Providing Medical Countermeasures to Airport Personnel

Step 1 – Identify Personnel Prioritization

The first step is to classify tiers of personnel to be vaccinated or provided medical countermeasures, and the order of receipt. This process allows identification of numbers of personnel within each group, which supports planning for receipt and distribution. A suggest prioritization tool is provided below.[63]

Medical Countermeasure/Vaccine Allocation Prioritization Tool

Tier	Group	Definition	Rationale
1	Critical	Personnel required to work on-site to maintain daily airport functionality and respond to immediate critical needs. Additionally, this group may directly interact with the traveling public, other airport employees outside of their workgroup, or be confined to a shared workspace with multiple colleagues.	Many airports operate on a 24/7 basis with multiple facility priorities and opportunities for incident escalation. Staff identified as Tier 1 play critical roles in maintaining daily operations, responding to airport emergencies, and may be at additional higher risk due to their work environment and interaction with the public and other employees.
2	Forward Facing	Personnel who work on-site (full or hybrid) at the airport who provide service to the traveling public or other employees through direct interaction. May include employees who work with colleagues in a confined work area in which an outbreak may easily occur.	On-site services that require public interaction place staff in direct contact with hundreds to thousands of people per day, which puts them at greater risk for exposure. Additionally, employees working in a confined setting with colleagues makes them more susceptible to the possibility of an outbreak.
3	On-site, Limited Public Interaction	On-site personnel who provide service support – either to the traveling public or to other employees – but do not do so in a public interaction or forward-facing environment.	Staff required to work on-site but do not have direct contact with the public as part of their primary job duty. Since they do not have contact with anyone outside of their team but must be on-site to perform their function, they must remain healthy for on-site operations. These staff members do not work in a confined area.
4	Operations and Regulatory Compliance (Work from Home)	Primarily staff working exclusively at home who may have a regulatory or minimum facility operations responsibility.	Staff who are essential to operations and/or regulatory compliance but do not need to conduct primary job duties on site. Due to their function in maintaining compliance, they still require appropriate protections against work interruption.
	Tier 1 Staff Household Members	Individuals who live within a Tier 1 employee's household.	As part of a pandemic response, staff may need to take time off to care for individuals sick within their households. By providing vaccine to Tier 1 employee household members, airports can mitigate loss of on-site critical staff due to caring for an ill household member, and therefore mitigate potential critical impacts to the airport.

[63] Adapted from AAAE presentation, COVID-19 Vaccine Closed-Point of Dispensing, Denver International Airport, Jessica Cerutti, CM, Emergency Operations Manager, January 5, 2021.

Medical Countermeasure/Vaccine Allocation Prioritization Tool

Tier	Group	Definition	Rationale
5	Non-Regulatory Off-site Personnel	Staff able to perform the entirety of their job function off-site or work from home and who have no regulatory or minimum facility operations responsibilities.	Staff able to conduct all business from off-site/work from home
6	All Staff Household Members	Household members of any airport employee.	By providing a vaccine to all staff households, the airport can mitigate loss of staff productivity due to caring for an ill household member.

Step 2 – Coordinate with Public Health Officials

Once airport prioritization tiers are established, coordination with public health and emergency management may be necessary to identify parameters and a schedule for medical countermeasures or vaccinations. Critical steps are identified below.

No.	Measure/Action Item	Complete	Notes
1	**Location of Point of Distribution (POD)** – Coordinate POD options; if it is to occur at the airport, a drive-through model is recommended (see Appendix C6-3, Medical Countermeasure Point of Distribution Checklist, for more details).		
2	**Coordinate Quantities** – Discuss the tiered distribution concept to establish number of medications needed and an approximate schedule.		
3	**POD Planning and Logistics** – Coordinate to identify personnel and resource needs as well as locations.		
4	**Establish Responsibilities** – Identify POD positions and staff for training.		
5	**Training and Exercise** – Provide various types of training:		
	Position-specific training		
	Just-in-time training (for greeters/non-medical staff)		
	Drill to evaluate and improve the process if possible.		
6	**Employee Communications** – Coordinate with public health/emergency management to validate employee communications prior to mass notification, and provide resource links for communication updates.		
7	**Tracking and Privacy** – Use existing human resource systems to track distribution, if possible, to maintain confidential records.		
8	**Staff Counsel** – Work with human resources and staff counsel to address legal issues and any necessary waivers.		
9	**Language/Special Needs** – Address language barriers and accessibility needs.		
10	**POD Worker Priority** – Provide vaccinations/medical countermeasures to POD workers prior to POD activation.		

Step 3 – Communicate with Employees

Once distribution plans are in place, plans should be communicated with airport employees and their supervisors to support scheduling. An example communication is provided below.[64]

Overview
The Airport is expecting to receive designated medical countermeasures/vaccines for our staff around <Date>. This initiative is part of a multiphase deployment strategy led locally by <Airport, Public Health, Emergency Management> and <Airport> has agreed to administer medical countermeasures / vaccines for eligible staff on-site to provide ample opportunity for employees to receive this treatment at their discretion through a Point of Distribution (POD).

Scheduling and Communications Recommendations
While some uncertainty remains regarding the specifics of when doses will be delivered or which medication we will receive, we anticipate a short turnaround between receipt and distribution. As a result, we request that you clearly communicate the following recommendations and information with your staff prior to and when they receive notification of their eligibility to schedule their vaccine appointment. <adapt for specific conditions>

- **Anticipate mild side effects and schedule accordingly** – Address known side effects and other relevant information regarding the medical countermeasures.
- **Expect to be held for XX minutes after vaccination/receipt of medication** – Address known waiting periods for reactions to medical countermeasures, if applicable.
- **Dress accordingly for the drive thru POD** – Please dress in appropriate clothing so that medical staff may easily access your shoulder area. If you dress in layers, please remove some of these layers prior to entering the drive-through POD (for syringe-based medications).
- **Employees may receive medication/vaccine through participating pharmacies** – If an employee does not wish to use the Airport POD, they may be eligible to receive medication/vaccine at a pharmacy.
- **Prior Illness/Contraindications** – Indicate any contraindications or factors that may preclude receipt of the medication or vaccines and associated timelines.

[64] Adapted from a AAAE presentation COVID-19 Vaccine Closed-Point of Dispensing, Denver International Airport, Jessica Cerutti, CM, Emergency Operations Manager, January 5, 2021.

C6-3 – Medical Countermeasure Point of Distribution Checklist

Measures that must be undertaken to initiate Point of Distribution (POD) operations are summarized in the Checklist provided below. Consultation with public health and emergency management officials is warranted.

No.	Measure/Action Item	Complete	Notes
1. Initial Operational Planning			
1.1	Require pre-registration; accept patients by appointment only.		
1.2	Use pre-registration to plan for upcoming patient flow.		
1.3	Gathering information during pre-registration to expedite processing.		
1.4	Coordinate with federal stakeholders (CBP, FAA, TSA, etc.) to identify how many vaccines are needed for their staff.		
1.5	Use a separate process if subsequent doses are required.		
1.6	Consider shelter for staff and storage for equipment and medications.		
2. Traffic Control			
2.1	Station traffic control points at the beginning of the dispensing system so that traffic can be routed to the proper entrance.		
2.2	Provide signage at traffic control points directing patients to different lines depending on needs of individuals in the vehicle (language/special needs).		
2.3	Maintain traffic flow at a pace that does not cause bottlenecks.		
2.4	Station traffic control points at the end of the dispensing system so that vehicles that have received medication do not linger.		
2.5	Plan for medical emergencies and for cars running out of gas.		
3. Drug Storage			
3.1	Ensure that drug storage needs are met, including power, networking, and space needs (mobile models leave little room for error).		
3.2	Provide two types of storage: 1) bulk supply storage away from traffic, and 2) supplies for each station.		
3.3	Provide security at all storage locations.		
4. Triage			
4.1	Ensure that communications indicate to patients that they should not attend a POD site if feeling ill.		
4.2	Ensure that medical personnel are available to perform initial assessment for every vehicle.		
4.3	Implement procedures that ensure symptomatic patients go to the nearest hospital.		
5. Medication/Vaccine Distribution			
5.1	Require registration forms to be completed at distribution stations.		
5.2	Require pre-distribution checklists.		
5.3	Provide medications as well as drug information sheets.		

No.	Measure/Action Item	Complete	Notes
5.4	Ensure a pharmacist is present to oversee dispensing.		
5.5	Maintain confidential logs on who received medication.		
5.6	Ensure staff review all documentation prior to distribution of medication.		
5.7	Ensure that security is posted at each distribution station.		
5.8	Provide personnel to monitor those receiving medications for a specified period of time for onset of side effects or allergic response.		
5.9	Ensure adequate staff is available; shut down unstaffed lanes.		
6. Patients with Special Needs			
6.1	PODs should accommodate those with physical disabilities.		
6.2	PODs should accommodate those who are chemically dependent.		
6.3	PODs should accommodate those who are illiterate.		
6.4	PODs should accommodate the frail elderly.		
6.5	PODs should accommodate those who are sight impaired.		
6.6	PODs should accommodate those who are hearing impaired.		
7. Security			
7.1	Ensure all operations staff are badged to clearly identify them and their access to specific areas and functions.		
7.2	Post security at traffic control points to ensure that security issues do not arise between patients.		
7.3	Post security at the triage area to prevent patients from bypassing the station.		
7.4	Post security at all entrances and exits.		
7.5	Post security near drug storage areas.		
7.6	Provide roving security patrols throughout the POD to assist staff as needed.		
8. Safety			
8,1	Conduct just-in-time training for all volunteers based on LPHA guidelines.		
8.2	Ensure a plentiful supply of PPE and high-visibility vests.		
8.3	Do not transfer documents by hand.		
8.4	Ensure that appropriate types of waste disposal are available for PPE and contaminated articles.		
8.5	Interface with public health officials regarding safe handling of medications/vaccines.		
9. General Operational Equipment			
9.1	Work with public health officials during pre-event planning to identify quantities of equipment necessary based on prioritization and available number of medications/vaccines.		
9.3	Determine responsibilities for provision of the following equipment:		
	General information signs for the POD		

No.	Measure/Action Item	Complete	Notes
	Triage signs directing people into appropriate lines		
	Barriers to direct people into the triage area and entrance		
	High-visibility vests for traffic control personnel		
	Office supplies		
	Public information sheets (printed in multiple languages), including fact sheets on the disease and specific information sheets on medical conditions		
	Communications equipment (two-way radios for internal staff communication, radios for communication with DEOC, and telephones)		
	Generators, exterior outlets for generators, exterior lights, flashlights		
	Dispensing supplies		
	PPE – Masks, disposable gowns, disposable gloves		
	Tables and chairs		
	Fax machines, copier machines		
	Sanitation supplies, cleaning supplies, garbage cans, and biohazard bags		
	Shelters, water, and coolers		
	Reliable internet/Wi-Fi connection		
9.4	Identify additional medication/vaccine-specific needs such as type and level of refrigeration.		
10. Staffing Requirements			
10.1	Work with Emergency Management/Public Health to validate necessary POD positions and who will fill them.		
10.2	Based on the desired throughput of patients, identify people to fill the following positions per shift:		
	POD Manager		
	Safety Officer		
	Public Information Officer		
	Medical Operations Team Leader		
	Screeners		
	Triage Support		
	Dispensers/Vaccinators		
	Translator		
	Security Operations Team Leader		
	Greeters		
	Security Officers		
	Logistics Team Leader		
	Vaccine Runners		
	Supply Runners		
10.3	Train personnel to fill assigned positions.		

C7 – Airport Stakeholder Coordination Tools

C7-1 – Airline Coordination Checklist

C7-2 – Daily Report Form

C7-1 – Airline Coordination Checklist

The Checklist below summarizes points of coordination to support exposure control measures throughout the air travel continuum. This Checklist focuses on airline measures.

No.	Measure/Action Item	Complete	Notes
1. Seat Assignment Processes			
1.1	Consider limiting seat availability to enable passengers to maintain social distance consistent with public health guidelines during the flight.		
1.3	When social distancing cannot be practiced on a flight, make passengers aware immediately and offer alternative flight options without penalty.		
1.4	If physical distancing is not achieved on a flight, crew members should actively ensure that passengers on board adhere to all other preventive measures, including use of masks, strict hand hygiene, and respiratory etiquette.		
2. Adjusted Boarding Processes			
2.1	Board passengers in ways that reduce the likelihood of passengers having to pass or wait in close proximity to each other (e.g., board all window seats first, board from the back of the aircraft forward); ensure the boarding process is consistent with FAA weight and balance requirements.		
3. Limit/Suspend Onboard Customer Services			
3.1	Limit or discontinue food and beverage service on short-haul flights, or require dispensing in sealed, prepackaged containers.		
3.2	Suspend unnecessary in-flight services that require crew/passenger interactions (e.g., duty-free sales).		
3.3	Continue to comply with disability access requirements such as: • Boarding or deplaning assistance for passengers with disabilities • Providing onboard wheelchairs and assistance to the aircraft lavatory • Opening food packages for people with disabilities		
4. Segment Lavatory Access			
4.1	Designate passenger lavatory use based on seat assignment to limit cabin movement.		
4.2	Provide disinfectant wipes in lavatories for passengers and crew to wipe down high-touch surfaces before and after use.		
5. PPE for Crew and Ill Passengers			
5.1	Ensure crew members have adequate onboard PPE to mitigate communicable disease exposure.		
5.2	Provide Universal Precaution Kits that contain adequate protection in cases of suspected illness for both crew and passengers.		

No.	Measure/Action Item	Complete	Notes
5.3	Provide the necessary PPE and training to enable crew to follow CDC guidelines for responding to passenger with communicable disease symptoms, including: • Have protocols for how to isolate potentially ill passengers discovered during flight • Train all crewmembers on those protocols • Use standard procedures to respond to prevent spread of diseases as described in CDC guidance.		
6. Additional Crew Protections			
6.1	Assign crewmembers to provide service to specific sections of the cabin to the extent possible.		
6.2	Consistent with FAA regulations, allow cabin crewmembers to be seated in passenger seats if necessary to improve social distancing.		
6.3	Crewmembers should not share equipment used for safety demonstrations without adequate sanitization.		
7. Disembarkation Procedures			
7.1	Prohibit passenger queueing in the aisle when departing the aircraft.		
7.2	Require passengers to stay seated until it is their turn to depart.		
8. Aircraft Disinfecting			
8.1	Disinfect aircraft cabins between each flight segment when passengers and/or crew change.		
8.2	Provide personnel with appropriate PPE and cleaning supplies to clean frequently touched surfaces in the cabin between each flight, including galley, arm rests, tray tables, screens, seatbelt buckles, etc.		
8.3	Clean lavatories between each flight.		
8.4	Clean the flight deck between each crew change.		
8.5	Consult with aircraft manufacturers to ensure cleaning products and processes do not damage aircraft equipment.		
9. US CBP Clearance – Airlines/airports should work locally with CBP to support the following:			
9.1	Separate passengers within the queuing space to adhere to social distancing practices.		
9.2	Limit the number of passengers allowed into the Federal Inspection Services (FIS) area at any one time to the extent possible.		
9.3	Consider expanding existing facial biometrics capabilities for primary processing to limit the need to handle documents and to maintain separation between the traveling public and officers.		
9.4	Consider expanding ways to verify traveler documentation while maintaining maximum social distancing.		
9.5	Streamline local processes and passenger flows for rescreening of passengers with connecting flights.		

No.	Measure/Action Item	Complete	Notes
9.6	Develop necessary infrastructure changes to implement modified egress, enable installation of Plexiglas barriers, and eliminate potential choke points upon exiting the FIS area.		
9.7	Encourage participation in CBP's Global Entry program for crew and passengers.		
9.8	Default to verbal Customs declarations where appropriate.		

C7-2 – Daily Report Form

This Daily Report Form is recommended for daily use among frontline supervisors to document incidents of non-compliance and/or means to improve exposure control mechanisms. It is not meant to be punitive, but rather to serve as a tool for continuous process improvement.

When compliance deficiencies or hazards are found, best practices and recommended actions for mitigation should be identified.

Date of Report:		**Times:**	**Begin:**		**End:**	
Area of Report:		**Reporter/Supervisor:**				
Instructions: Check the appropriate block. Make comments only on the items checked "N".						

	Audit Element	Yes	No	Comments
1.0 Personal Protective Equipment				
1.1	Were any breaches identified among airport workers?			
1.2	Generally, are airport workers wearing PPE properly?			
1.3	Were customers/travelers seen disregarding PPE requirements (masks)?			
1.4	Were customers/travelers notified by an authority of the need to wear masks/PPE?			
1.5	Were any other PPE issues identified?			
2.0 Social Distancing				
2.1	Were deviations to social distancing measures observed?			
2.2	Were deviations to social distancing measures pointed out by an authority?			
2.3	Did those deviating from social distancing measures comply with the authority's request?			
3.0 Cleaning/Disinfection				
3.1	Were logs of cleaning and disinfection generally maintained?			
3.2	Were there any shortages of cleaning supplies noted?			
3.3	Were there any observed instances where hand sanitizer was unavailable?			
4.0 Exposure/Contact Tracing				
4.1	Were any cases of exposure or required contact tracing noted?			

Audit Element		Yes	No	Comments
4.2	Were persons involved in exposure or contact tracing scenarios isolated quickly and safely?			
4.3	Describe any details regarding exposure that may require more investigation:			
5.0 Compliance Incidents				
5.1	Were any incidents involving passengers noted?			
5.2	Were any incidents involving concessions or contractors noted?			
5.3	Other aviation worker issues noted?			
6.0 Narrative/Recommendations				
Please provide any notes or recommendations you would like to convey to improve exposure control.				

C8 – Personal Protective Equipment Checklist

This checklist is recommended for use by the Safety Officer to develop a Safety Plan for communicable disease response. Parameters are based on COVID-19 and influenza; adjustments may be necessary for other pathogens.

<table>
<tr><th>No.</th><th>Measure/Action Item</th><th>Complete</th><th>Notes</th></tr>
<tr><td colspan="4">1. Risk Assessment</td></tr>
<tr><td></td><td>Determine Employee Risk Categories using the matrix below (adjust for changing conditions and/or parameters).</td><td></td><td></td></tr>
<tr><td></td><td colspan="3">Risk Matrix for Personal Protective Equipment
<table>
<tr><th rowspan="2">Distance</th><th colspan="3">Duration of Exposure in 24 Hours</th></tr>
<tr><th>< 15 minutes</th><th>15 minutes</th><th>> 15 minutes</th></tr>
<tr><td>> 6 feet</td><td>Low risk</td><td>Low Risk</td><td>Moderate Risk</td></tr>
<tr><td>6 feet</td><td>Low risk</td><td>Moderate Risk</td><td>High Risk</td></tr>
<tr><td>< 6 feet</td><td>Moderate Risk</td><td>High Risk</td><td>High Risk</td></tr>
</table></td></tr>
<tr><td colspan="4">2. Identify Personal Protective Equipment Requirements</td></tr>
<tr><td></td><td>Identify PPE necessary for each Employee Risk Category as described below. PPE decisions should err on the side of caution (adjust for changing conditions and/or parameters).</td><td></td><td></td></tr>
<tr><td></td><td colspan="3">Required PPE for Employee Risk Categories
<table>
<tr><th rowspan="2">Required PPE</th><th colspan="3">Employee Risk Category</th></tr>
<tr><th>High Risk
High Traffic, High Touch, High Contact Areas</th><th>Moderate Risk
Probable/ Sporadic Public Exposure</th><th>Low Risk
Limited or No Normal Public Exposure</th></tr>
<tr><td>N95 respirator*</td><td>Yes, if available</td><td>No</td><td>No</td></tr>
<tr><td>Mask/Face Covering**</td><td>Yes, if N95 is unavailable</td><td>Yes</td><td>Yes</td></tr>
<tr><td>Eye Protection</td><td>Yes</td><td>Yes</td><td>No, unless function otherwise requires it</td></tr>
<tr><td>Gloves***</td><td>Yes</td><td>Yes</td><td>No, unless function otherwise requires it</td></tr>
<tr><td colspan="4">*NIOSH approved; consult CDC guidelines for current recommendations for specific pathogens.
**Masks/face coverings should have two or more layers of washable, breathable fabric, completely cover the nose and mouth, and fit snugly against the sides of your face without gaps.
***Hand hygiene required before donning and after removing gloves.</td></tr>
</table></td></tr>
<tr><td colspan="4">3. Establish PPE Procedures</td></tr>
<tr><td colspan="4">3.1 General PPE Requirements:</td></tr>
<tr><td>3.1.1</td><td>Train employees on proper use, cleaning, maintenance, useful life, and disposal.</td><td></td><td></td></tr>
</table>

No.	Measure/Action Item	Complete	Notes
3.1.2	Encourage all passengers and airport employees to correctly wear a mask or cloth face covering over their nose and mouth at all times in the passenger air transportation system. *Note: Requirements are likely to differ for children under two years old, those with applicable medical conditions, unconscious, unable to be awakened, and otherwise unable to remove a mask without assistance.*		
3.1.3	Airports, airlines, and service providers should have masks or cloth face coverings available for passengers and aviation workers who may arrive without one or require a replacement.		
3.1.4	Enforce mask usage at all times, and especially when social distancing cannot be maintained.		
3.1.5	Provide reasonable accommodations for persons with disabilities or ailments who cannot wear masks or cloth face coverings; however, exposure to others should be reduced with respect to time, distance, and via advanced PPE, if possible.		
3.1.6	Use physical barriers or face shields to protect employees and the public in instances where passengers and aviation workers are asked to briefly remove masks or face coverings for official purposes.		
3.1.7	Consider accommodations for persons with disabilities or ailments who cannot wear cloth face coverings on a case-by-case basis. May include seating that allows social distancing from non-companion passengers.		
3.1.8	Allow brief removal of masks or cloth face coverings for drinking or eating.		
3.2 Baggage Handlers:			
3.2.1	Ensure baggage handlers wear gloves when handling passenger baggage.		
3.2.2	Train handlers on proper use of gloves and hand hygiene to prevent virus contamination.		
3.2.3	Provide handlers with an adequate supply of hand washing materials, disinfectant wipes, and gloves to change as needed.		
3.3 Ground Transportation Drivers:			
3.3.1	Enforce use of masks or face coverings among ground transportation drivers (buses, taxis, etc.) while they are transporting passengers.		
3.3.2	Consider the use of barriers to isolate drivers from their passengers.		

C9 – Risk Communications Checklist

This checklist is recommended for use by the Public Information Officer (PIO) to coordinate and develop robust crisis communication in response to a communicable disease event.

No.	Measure/Action Item	Complete	Notes
1. PIO General Functions for Communicable Disease Events			
1.1	Work with internal and external partners to develop risk communication products.		
1.2	Advise airport stakeholders about the nature of the communicable disease event and operational impact.		
1.3	Establish contact with PIOs from LEMA, LPHA, and other emergency response stakeholders to coordinate messaging.		
1.4	Establish a Joint Information Center (JIC) as needed.		
1.5	Establish an approval process for public messaging with the Incident Commander or their designee.		
1.6	As needed, establish communication links with airport stakeholders, including:		
	• Internal: ○ ARFF ○ Airfield service providers ○ Airlines ○ Concessionaires and retailers ○ CBP ○ EMS providers ○ FAA ○ Ground transportation providers ○ Hospitals and healthcare providers ○ Law enforcement agencies ○ TSA ○ Other stakeholders as necessary		
	• External: ○ General public ○ Hotels/hotel associations ○ Media ○ Peer airports ○ Tourism/travel organizations ○ Travelers		
2. Traveler/Public Communication Needs for Communicable Disease Events			
2.1	Provide travelers with consistent and accurate information regarding requirements and restrictions for air travel as determined by relevant health authorities. Restrictions may include the following:		
	• Postponing travel for those who are symptomatic or test positive for a pathogen		
	• Health screening measures and testing protocols to identify potentially exposed persons		
	• Personal protective equipment requirements		

No.	Measure/Action Item	Complete	Notes
	• Hygiene and sanitary requirements		
	• Social distancing requirements		
2.2	Provide information regarding restrictions and requirements to travelers prior to arrival at an airport via airport and airline websites, social media, recorded telephone messages, and print media.		
2.3	Utilize the media to inform travelers of restrictions and requirements, and to provide short notice updates of changing conditions and requirements.		
2.4	Use all tools available to support robust communication including: • Radio and television news outlets • Social media for updates, links, and information • Airport website for updates, links, and information • In-terminal messaging as a reminder of recommended guidelines for safe travel • Overhead announcements throughout concourses and terminals • Signage throughout the airport, including roadway signage if available		
3. Coordination of Communication with Airport Partners			
3.1	Coordinate typical pathogen exposure control strategies employed among airport partners.		
3.2	Concessions – Shopping and Restaurants: • Employees are required to wear masks or facial coverings • Social distancing is required at counters, tables, and in public areas • Increased cleaning of high-touch areas has been implemented • Acrylic transmission barriers are in use at cashier counters • Contact points are limited and contactless payment has been implemented • Compliance with local, state, and federal health requirements and guidelines is enforced • PPE items are for sale at retail shops • Capacity limits are enforced based on local, state, and federal guidelines • Hours of operation for some services is limited • Underutilized venues may be temporarily closed		
3.3	Airlines: • Individual airlines are addressing exposure control independently; please refer to their respective websites • Airlines consistently follow public health orders		

No.	Measure/Action Item	Complete	Notes
3.4	Ground Transportation:		
3.4.1	Rental Cars: • Check-in and key pick-up areas are marked for social distancing • Complete sanitization of rental vehicles is performed with increased focus on high-touch areas • Low- and no- touch experiences are in use, including advance check in, curbside pickup, and delivery options • Each rental car company is addressing safety independently; please refer to their respective websites		
3.4.2	Taxis/Rideshare: • Pick-up areas are marked for social distancing • Vehicles are sanitized daily with increased focus on high-touch areas • Drivers are required to wear a mask or facial covering while transporting passengers • Fogging of vehicles is performed (if available)		
4. Messaging			
4.1	Convey consistent messages to provide the best opportunity to influence behaviors among travelers.		
4.2	Coordinate messages with public health officials to ensure consistency with desired exposure control measures.		
4.3	Coordinate messages among internal stakeholders to ensure consistency within the airport environment.		
4.4	Provide information via all available means, including signage, stands, posters or electronic displays, and public address.		
4.5	Use phrasing such as: “For the safety of all passengers, <NAME> Airport is performing health screening for <pathogen or illness>. Travelers who may be suffering from <pathogen or illness> may/will not be permitted to board any flight. The main symptoms of XXXX are…”		
4.6	Phrasing should be adjusted according to the information to be conveyed.		
4.7	Symptoms should be verified through local public health officials based on current information.		
4.8	Public announcements and other forms of communication should be provided in languages used by persons most frequently traveling through the airport.		
4.9	To ensure public confidence, airport authorities should explain to passengers, as fully as possible, the reasons for any necessary health-related measures.		

No.	Measure/Action Item	Complete	Notes
4.10	Traveler-Focused Messaging – The following messages are provided as examples:		

Timeline / Responsible Party	Message
Before Travel	
Airlines	Communicate flexible re-accommodation policies so passengers do not feel pressured to fly if sick or uncomfortable
Airlines and Airports	Communicate pre-arrival information about public health practices at the airport, on the aircraft, and at the destination, including CDC travel guidance, testing requirements, and screening procedures
Airlines and Airports	Promote pre-departure testing and isolation to prevent exposure while traveling and protect fellow passengers
	Direct passengers to travel information and resources on official websites such as FlyHealthy.gov.
Arrival	
Airlines	Provide passengers with communications on health measures and requirements for their return trip, including any post-arrival screening or testing, as well as the need for accurate contact information.
Airports	Provide information on local health measures via baggage claim and exit area signs and public announcements.
Departure	
Airlines	Collect health attestation, contact information, and test results when applicable, and provide reminders of distancing protocols at check-in and boarding.
Airports	Provide signs and announcements throughout the airport reminding passengers of public health measures in place.
In-Travel	
Airlines	Ensure safety briefings by aircrew include public health measures and expectations on the aircraft, and have aircrew remind passengers of practices as needed.

C10 – Point Source Response Tools for Ill Passengers and Crew

C10-1 – Point Source Response Checklist

C10-2 – Cockpit Card Notifying Public Health of Ill Passengers/Crew on U.S.-Bound Flights

C10-3 – Public Health Announcement Scripts

C10-4 – Passenger Locator Form

C10-1 – Point Source Response Checklist

This checklist is provided as a guide to responding to a point source communicable disease scenario to support airport authorities, the Local Public Health Authority (LPHA)/CDC, and the Local Emergency Management Agency (LEMA) in assessing the health of potentially ill travelers.

No.	Measure/Action Item	Complete	Notes
1. Point Source Incidents – Airside			
If an emergency involving a disease requiring quarantine is suspected, the captain of the arriving aircraft will be directed by FAA or other authority to secure the doors of the plane until EMS, LPHA, and/or CDC Quarantine Station personnel arrive. The goal is to control exposure to the suspected disease and minimize the impact beyond the aircraft. Prescribed actions include:			
1.1	Notify the CDC, ARFF, law enforcement, CBP, DOT, and TSA personnel of any inbound conveyance with reported ill person(s) on board via the established communications protocols.		
1.2	Assist in deciding when and where the aircraft should park, and coordinate with the FAA to provide a parking area for the aircraft. • If available, use remote parking to allow safe access for response personnel and to isolate the aircraft, passenger, and crew from main terminals. • Facilitate ill passenger evaluation and transport to medical facility. Public health access to the aircraft may require an air stairs truck. • If remote parking is unavailable for any reason, an isolated designated gate may be used; take extra precautions to secure access/egress.		
1.3	Aircraft instructions: • Maintain air conditioning to the aircraft cabins at all times. • Keep everyone on board until medical assessment is complete. • EMS/CDC personnel, with assistance from airline cabin crew, will inform the crew and passengers as to the nature of the situation and the sequence of events (see Appendix C10-3, Public Health Announcement Scripts).		
1.4	Coordinate appropriate notifications among relevant airport stakeholders.		
1.5	Work with the LPHA and LEMA to activate a quarantine facility as needed.		
1.6	Arrange transportation for individuals who will be quarantined off-site.		
1.7	Coordinate media relations and press management through the JIC with PIOs from local, state, and federal authorities.		
1.8	Coordinate other response needs via Unified Command and EOC.		
2. Point Source Incidents – Landside			
The report of an ill traveler from landside entry after arrival, check-in, and/or security screening may occur as reported by airline personnel, TSA personnel, or other airport workers. Title 42 does not apply; local jurisdictional authority applies. Suggested actions are listed below:			
2.1	Upon initial notification, airport authorities should:		
	• Encourage the notifier to isolate the potentially ill traveler.		
	• Contact LPHA and provide details including signs and symptoms of illness.		
	• Coordinate immediate actions in consultation with LPHA.		
2.2	Assist in identifying initial isolation areas and coordinate with the airline or other impacted leasehold. Isolation considerations should include:		

No.	Measure/Action Item	Complete	Notes
	• The room or area should be properly ventilated (see Appendix C4-4 for specific recommendations)		
	• Doors should be kept closed except when entering or leaving the room, and entry and exit should be minimized. If a room is not available, the isolation area should have an established minimum perimeter of 15 feet with sufficient security to control entry.		
	• Access to a restroom should be provided.		
	• Entrants should be provided with appropriate PPE as determined in consultation with LPHA.		
	• A log of entry into the room or area should be maintained to document potential contacts.		
	• Potentially infected travelers transported outside of the isolation room/area should be asked to wear appropriate PPE in consultation with LPHA.		
2.3	Coordinate appropriate notifications among relevant airport stakeholders to minimize exposure to the area of impact.		
2.4	Work with LPHA and LEMA to activate a quarantine facility as needed		
2.5	Arrange transportation for individuals who will be quarantined off-site.		
2.6	Coordinate media relations and press management through the JIC with PIOs from local, state, and federal authorities.		
2.7	Decontamination – Areas within the airport that are deemed to require decontamination will be prohibited from use until designated as safe.		
	• Airport facilities, ground transportation, and other assets that may have been in contact with infected patients require disinfection.		
	• Use an EPA-registered disinfectant per label instructions and in consultation with LPHA.		
	• Use the airport-specific Cleaning and Disinfection Checklist in Appendix C5-1.		

C10-2 – Cockpit Card Notifying Public Health of Ill Passengers/Crew on US-Bound Flights

Federal regulations require that the captain of an aircraft destined for a U.S. airport report the following conditions prior to landing that may indicate a communicable disease.

Conditions that require reporting to the CDC:

- **Fever*** that has lasted more than 48 hours
- **Fever*** of any duration **plus** any of the following:
  - rash
  - swelling of the lymph glands
  - jaundice (yellowing of skin or eyes)
- **Persistent Diarrhea** (more than three stools within 24 hours)

Conditions that CDC requests be reported:

- Fever* of any duration plus any of the following:
  - difficulty breathing
  - headache with stiff neck
  - reduced level of consciousness
  - unexplained bleeding
  - persistent vomiting
  - persistent cough
- Contact your airline's point of contact (e.g., Operations Center, Flight Control, airline station manager) as soon as you learn of an ill person or death. Provide the ill person's name, seat number, symptoms, approximate age, and point of origin.
- Tell the airline point of contact to immediately notify the CDC Quarantine Station at or closest to the airport where you are arriving to ensure a prompt ground response so the ill person can receive timely care and the risk for spreading disease will be minimized.

*Fever means a temperature of 100° F (37.8° C) or greater. Flight crew should consider someone to have a fever if the ill person feels warm to the touch, gives a history of feeling feverish, or has an actual measured temperature of 100° F (37.8° C) or greater.

C10-3 – Public Health Announcement Scripts

Location: On Board the Plane

These messages should be read after a report of an ill person has been made to the CDC Quarantine Station and/or if requested by the Quarantine Station. If possible, the public health announcement should be made before landing or while taxiing to the gate to ensure that passengers remain in their seats once the plane has landed.

- **Situation 1:** Ill person is still on the plane and medical assistance is needed.

  Sample Script – Please remain seated for an announcement. A person on board requires medical attention. This should take only a few minutes. Please remain seated while emergency medical team and public health staff are on board. We will provide more information as soon as possible. Thank you very much for your cooperation.

- **Situation 2:** Ill person has been taken off the plane and CDC has asked that Travel Health Alert Notices be handed out to everyone.

  Sample Script – Please remain seated for an announcement. An ill person has been taken off the plane to receive medical treatment. As a precaution, public health officials have asked us to give you information about the illness and what to do if you become ill. Flight attendants will hand you a Travel Health Alert Notice as you leave the plane. Please read this card carefully and keep it for the time specified on the card. Thank you very much for your cooperation.

- **Situation 3:** Ill person has been taken off the plane. CDC has asked that certain passengers sitting near the ill person receive Travel Health Alert Notices and provide their contact information by filling out a Passenger Locator Form.

  Sample Script – Please remain seated for an announcement. An ill person has been taken off the plane to receive medical treatment. As a precaution, we are collecting information on how to contact passengers who sat near the ill person. In case public health authorities need to contact you, we are asking you to provide information about how you can be reached in the next three weeks. Flight attendants are passing out the forms now. Please fill out the form completely and hand it back to a flight attendant before you leave the plane. We will also give you a Travel Health Alert Notice to inform you about the illness and what to do if you become ill. Please read the card carefully and keep it for the time specified on the card. Thank you very much for your cooperation.

- **Situation 4:** There are no ill people on board. CDC has asked that a public health announcement be read because the flight is coming from an area of risk for a disease. Travel Health Alert Notices will be handed out to everyone on the plane.

  Sample Script – Please remain seated for an announcement. This flight is returning from an area where cases of [insert name of the infectious disease] have been reported. There is a slight risk that travelers may have been around people ill with the disease while in the country. As a precaution, public health officials have asked us to give you information about the illness and what to do if you become ill. Flight attendants will hand you a Travel Health Alert Notice as you leave the plane. Please read this card carefully and keep it for the time specified on the card. Thank you very much for your cooperation.

- **Situation 5:** There are no ill people on board. CDC has asked that a public health announcement be read and that passengers fill out the Passenger Locator Form. Travel Health Alert Notices will be handed out to everyone on the plane.

Sample Script – Please remain seated for an announcement. This flight is returning from an area where cases of [insert name of the infectious disease] have been reported. There is a slight risk that travelers may have been around people ill with the disease while in the country. As a precaution, public health officials have asked us to give you information about the disease and what to do if you become ill. Flight attendants will hand you a Travel Health Alert Notice as you leave the plane. Please read this card carefully and keep it for the time specified on the card.

Public health officials may need to contact you, so we are asking you to provide information about how you can be reached in the next three weeks. Flight attendants are passing out the forms now. Please fill out the form completely and hand it back to a flight attendant before you leave the plane. Thank you very much for your cooperation.

Location: Airside Terminal

- **Audience:** Passengers expecting to use a gate or area where a point source exposure may have occurred.

  Sample Script – Your attention please. Due to a public safety concern at <Describe gate or location>, all passengers and visitors are asked to avoid this area of the Airport. Please follow the instructions of Airport personnel. We apologize for the inconvenience. Every effort is being made to return to normal operations as soon as possible.

- **Audience:** Passengers expecting to board the aircraft for continuing flight.

  Sample Script: Your attention please. An onboard public health concern is causing the delay of <Airline and Flight Number>. Please check for gate assignments on the flight information monitor or ask an available airline representative for assistance.

Location: Landside Terminal

- **Audience:** For friends/family expecting arrival of the airplane in question.

  Sample Script: Your attention please. <Airline and Flight Number> has landed safely. However, due to an onboard public health concern, the flight is delayed from the gate. For more information concerning the status of the flight, please listen for further announcements or ask an available airline representative for assistance.

- **Audience:** Airport stakeholders

  Message: Send via distributed message such as text, email, or other source, airport stakeholders should be notified of the need to avoid the area in question.

  Once public health assessment of the patient has been performed, additional stakeholder communication may be necessary to support the LPHA in contact tracing. Those employees who may have come in contact with a potentially infected traveler may require notification to isolate and receive medical assessment.

C10-4 – Passenger Locator Form

A description of and instructions for the Public Health Passenger Locator Form are provided below:

- The Local Public Health Authority (LPHA) has been notified of a passenger on this flight who may have been ill, the cause of which is being investigated. Information on the attached form is being requested in case the illness was caused by a communicable disease that may have been spread to other passengers. Any information you provide will be kept confidential and used only for follow-up if needed.
- If the need for any follow-up or preventive treatment is identified, the LPHA will be contacting you.
- Please call the LPHA at XXX-XXX-XXXX if during the next three weeks you are aware of an unexpected death, diagnosis of a communicable disease, or exposure to a possible bioterrorism agent in a person who traveled on this flight.
- Please notify your health care provider and the LPHA at the above numbers during the next three weeks if you develop symptoms such as:
    - Temperature with rash, or swollen glands
    - Temperature with jaundice, vomiting or diarrhea
    - Temperature that has persisted for more than 48 hours
    - Persistent fever accompanied by abnormal bleeding from any site
    - Severe cough or severe respiratory disease
    - Altered mental status or loss of consciousness
- The Public Health Passenger Locator Form, provided on the following page, should be completed by/for each passenger. If you need assistance completing this form, please ask an LPHA or airline representative.

Public Health Passenger Locator Form: To protect your health, public health officers need you to complete this form whenever they suspect a communicable disease onboard a flight. Your information will help public health officers to contact you if you were exposed to a communicable disease. It is important to fill out this form completely and accurately. Your information is intended to be held in accordance with applicable laws and used only for public health purposes. ***Thank you for helping us to protect your health.***

One form should be completed by an adult member of each family. Print in capital (UPPERCASE) letters. Leave blank boxes for spaces.

FLIGHT INFORMATION: 1. Airline name | 2. Flight number | 3. Seat number | 4. Date of arrival (yyyy/mm/dd) 2 0

PERSONAL INFORMATION: 5. Last (Family) Name | 6. First (Given) Name | 7. Middle Initial | 8. Your sex Male ☐ Female ☐

PHONE NUMBER(S) where you can be reached if needed. Include country code and city code.

9. Mobile | 10. Business

11. Home | 12. Other

13. Email address

PERMANENT ADDRESS: 14. Number and street *(Separate number and street with blank box)* | 15. Apartment number

16. City | 17. State/Province

18. Country | 19. ZIP/Postal code

TEMPORARY ADDRESS: If you are a visitor, write only the first place where you will be staying.

20. Hotel name (if any) | 21. Number and street *(Separate number and street with blank box)* | 22. Apartment number

23. City | 24. State/Province

25. Country | 26. ZIP/Postal code

EMERGENCY CONTACT INFORMATION of someone who can reach you during the next 30 days

27. Last (Family) Name | 28. First (Given) Name | 29. City

30. Country | 31. Email

32. Mobile phone | 33. Other phone

34. TRAVEL COMPANIONS – FAMILY: Only include age if younger than 18 years

	Last (Family) Name	First (Given) Name	Seat number	Age <18
(1)				
(2)				
(3)				
(4)				

35. TRAVEL COMPANIONS – NON-FAMILY: Also include name of group (if any)

	Last (Family) Name	First (Given) Name	Group *(tour, team, business, other)*
(1)			
(2)			

C11 – Pathogen Assessment Checklist

The checklist below can be used to correlate unique symptoms of communicable diseases associated with international geographic regions and recent travel of a person indicating unique symptoms. Assessment should be performed in consultation with a medical professional.

Infectious Disease	Unique Symptoms	Yes/No	Known Geography	Yes/No
Diphtheria	• Labored swallowing • Open sores or ulcers		• Asia – Bangladesh, Indonesia, Myanmar, Vietnam • Caribbean – Dominican Republic, Haiti • Eastern Europe • Middle East – Yemen • South Africa • Tropical Countries – South Pacific, Venezuela	
Lassa Virus	• Back pain • Facial swelling • Hemorrhaging (gums, eyes, or nose) • Shock • Tremors • Hearing loss		• Generally Rural West Africa • Guinea • Liberia • Nigeria • Sierra Leone	
Marburg Virus	• Rash (chest, back, stomach) • Hemorrhaging • Shock		• Angola • Democratic Republic of the Congo • Kenya • Uganda • Zimbabwe	
MERS	• No unique symptoms (flu-like with shortness of breath)		• Iran • Jordan • Kuwait • Lebanon • Oman • Qatar • Saudi Arabia • United Arab Emirates • Yemen	

Infectious Disease	Unique Symptoms	Yes/No	Known Geography	Yes/No
Poliovirus	• Paralysis or weakness in arms and legs • Paresthesia (pins and needles)		• Afghanistan • Pakistan • Malaysia • Philippines • Sub-Saharan Africa • Yemen	
Typhoid Fever	• Constipation • Sustained fever		• High Risk: Africa, Bangladesh, India, Pakistan, Southeast Asia • Lower-Risk: East Asia, South America, the Caribbean	
Other Viral Hemorrhagic Fevers (VHF)	• Back pain • Facial swelling • Hemorrhaging • Shock • Tremors • Hearing loss		• Old World VHFs: Africa, Eurasia, Middle East • New World VHFs: South America including Argentina, Bolivia, Brazil, and Venezuela	

C12 – Recovery Checklist

The checklist below summarizes post-communicable disease event recovery activities to support restoration of airport operations, after-action review and improvement planning, and financial recovery.

No.	Measure/Action Item	Complete	Notes
1. Demobilization and Restoration			
1.1	**Supplies** – Replace expendable or perishable materials and supplies used in the emergency (Logistics Section).		
1.2	**Damage Assessment** – Assess damage resulting from communicable disease response, and plan and schedule repair and replacement (Recovery Manager or strike team under the Operations Section).		
1.3	**Repair and Replacement** – Complete permanent repair and/or replacement of equipment and facilities, and restore physical infrastructure to pre-event condition (Recovery Manager or strike team under the Operations Section).		
2. After-Action Review and Improvement Planning			
2.1	**Timeline Development** – Develop a timeline of activities that occurred throughout the communicable disease event. Clarify time-based challenges.		
2.2	**Develop Objectives and Capability Targets** – Identify objectives of the communicable disease response as a basis for evaluation of response and recovery efforts.		
2.3	**Data Collection** – Collect records of participant actions, including ICS forms, data logs, duty logs, radio activity, and other written and recorded communications to identify if critical tasks were performed in desired timeframes.		
2.4	**Data Evaluation** – Use data to evaluate activities in relation to plans, policies, and procedures, legal authorities, and agency roles and responsibilities.		
2.5	**Data Analysis** – Analyze decisions made, activation or implementation of processes and procedures, requests for resources, use of mutual aid agreements, and how and what information was shared among agencies and the public.		
2.6	**Root Cause Analysis** – Trace origin of each action to earlier actions to identify respective causes using these questions: • Were capability targets met? If the targets were not met, what factors contributed? • Did activities suggest that critical tasks were executed to meet capability targets? If not, what was the impact or consequence? • Do current plans, policies, and procedures support critical tasks and capability targets? Were participants familiar with these documents?		
2.7	**Draft After-Action Report** – Draft the AAR summarizing key information related to response/recovery operations, including: • Event, dates, location, participants, mission area(s), specific communicable disease threat, a brief description, and the name of the AAR point of contact • Analysis of performance in relation to plans, policies, and procedures • Response and recovery strengths and areas for improvement		

No.	Measure/Action Item	Complete	Notes
2.8	**Develop Improvement Plan** – Develop an IP that includes all recommended corrective actions: • Mitigation measures (physical, technological, or procedural) to support detection, protection, prevention, response, and recovery from infectious disease scenarios within the airport • Scopes and procurement information to support mitigation • A schedule and plan to implement mitigation measures • Training and exercises necessary for improved capabilities • Recovery activities • Lessons learned for approaching similar challenges		
2.9	**After-Action Meeting** – Conduct an After-Action Meeting with all responding agencies and personnel to review the draft AAR/IP, identify additions and corrections, and gain consensus on findings.		
2.10	**Finalize AAR/IP** – Once all corrective actions have been consolidated in the final IP, the IP may be included as an appendix to the AAR. Distribute to participating response agencies and stakeholders.		
2.11	**Corrective Action Tracking** – Assignee tracks all corrective actions in the AAR/IP.		
2.12	**Corrective Action Implementation** – Corrective action assignees provide progress reports as requested through completion.		
3. Financial and Operational Recovery			
3.1	**Coordination** – Work with LEMAs and SEMAs to coordinate long-term recovery via local and state disaster recovery plans.		
3.2	**Documentation** – Document all recovery activities and associated labor hours. Collect and compile all ICS forms and other information to identify the cost of response operations with details to support potential applications for FEMA, insurance, or other forms of reimbursement		
3.3	**Impact Assessment** – Perform an impact assessment to identify the operational and financial impacts of communicable disease response on airport operations.		
3.4	**Mitigation Cost Estimate** – Develop a list of mitigation measures identified and associated direct and indirect costs.		
3.5	**Reimbursement Activities** – Work with LEMAs to coordinate reimbursement activities and to coordinate documentation for declared emergencies under the Stafford Act or other sources of recovery funding.		

C13 – Plan Maintenance Checklist

The checklist below summarizes plan maintenance activities to ensure that the CDRRP is current and updated based on lessons learned and other factors.

No.	Measure/Action Item	Complete	Notes
1. Developing and Maintaining Competencies			
1.1	**Initial Training and Familiarization** – Review components of the CDRRP and focus on procedures and checklists to ensure that assignees understand their roles in tactical response.		
1.2	**Tabletop Exercises** – Conduct periodic discussion-based exercises to develop and test command and control elements.		
1.3	**Drills** – Conduct focused drills to develop tactical capabilities among members of each strike team.		
2. Plan Review			
2.1	**Plan Steward** – Assign a Plan Steward to be responsible for maintenance, revision, and distribution and control of the CDRRP.		
2.2	**Periodic Plan Review** – Conduct scheduled periodic plan reviews, evaluation, and modification based on identified opportunities for improvement. Coordinate stakeholder review of proposed modifications and allow suggestions for alternative measures.		
2.3	**Revision Tracking** – Track revisions and updates of both hard and soft copies of the CDRRP, and maintain a Table of Revisions.		
2.4	**Document Control** – Disseminate revisions to relevant individuals per established document control procedures.		
3. Change Management			
3.1	**Non-Routine Revisions** – Plan Steward oversees non-routine revisions to the CDRRP based on: • Lessons learned during an actual emergency or following an exercise • Staffing changes that may impact assignments and contact information • Changes in communicable disease threat posture • Altered conditions or methods of response based on construction, operation, maintenance, or other circumstances • Changes to applicable regulations or laws • Requests from assignee or relevant stakeholder		
3.2	**Modifications per Request** – Plan Steward reviews requested modifications with impacted stakeholders and approves or denies requests in consultation with airport leadership.		

No.	Measure/Action Item	Complete	Notes
3.3	**Accepted Modifications** – If approved, the Plan Steward will: • Update the electronic copy of the CDRRP and note the new version date in the document. • Maintain a copy of requested changes in the CDRRP file. • Distribute transmittal form and electronic copy to all CDRRP holders.		
3.4	**Transmittal and Tracking** – The Plan Steward ensures that all CDRRP holders sign a transmittal form and return it, and also maintains document control procedures consistent with AEP procedures.		