

CHAPTER 5 — TRANSPORTATION AND BORDERS

Introduction

Our Nation's 317 official ports of entry and vast transportation network are critical elements in our preparation for and response to a potential influenza pandemic. Our border measures might provide an opportunity to slow the spread of a pandemic to the United States, but are unlikely to prevent it. The sheer volume of traffic and the difficulty of developing screening protocols to detect an influenza-like illness pose significant challenges. On a typical day, about 1.1 million passengers and pedestrians cross our borders, as do approximately 64,000 truck, rail, and sea containers, 2,600 aircraft, and 365,000 vehicles.

Our transportation system regularly delivers essential commodities to communities, and — in emergencies — rapidly moves critical supplies, emergency workers, and needed resources into affected areas. This vast and complex system moves billions of people and trillions of dollars worth of goods each year. Each of the six major transportation modes (i.e., aviation, rail, highway, maritime, pipeline, and mass transit) has unique characteristics, operating models, responsibilities, and stakeholders. As a decentralized network, the transportation sector is predominantly owned and operated by State and local governments and the private sector. Decisions made by State and local entities and the private sector can have cascading impacts across the transportation sector. Effective transportation management during a pandemic will require planning and close coordination across the sector — at the national, State, and local levels — and with those who depend on it.

Our ability to help maintain infrastructure services, mitigate adverse economic impacts, and sustain societal needs will hinge in part on our ability to make effective international and domestic transportation decisions. While the overall pandemic response will be driven by disease characteristics and the status of domestic preparation, transportation and border decisions should also be based on the effectiveness of an action in slowing the spread of a pandemic and related health benefits; its social and economic consequences; its international implications; and its operational feasibility.

Key Considerations

Goals of Transportation and Border Measures

The *National Strategy for Pandemic Influenza (Strategy)* guides our preparedness and response to an influenza pandemic, with the intent of (1) stopping, slowing, or otherwise limiting the spread of a pandemic to the United States, (2) limiting the domestic spread of a pandemic and mitigating disease, suffering, and death, and (3) sustaining infrastructure and mitigating impact to the economy and the functioning of society. Transportation and border measures, when combined with other social distancing and public health measures, can help support these goals.

The containment of an influenza virus with pandemic potential at its origin — whether the outbreak occurs abroad or within the United States — is a critical element of pandemic response efforts. Containment is most effective when approached globally, with all countries striving to achieve common goals. Even if such efforts prove unsuccessful, delaying the spread of disease could provide the Federal Government with valuable time to activate the domestic response. The Secretariat of the World Health

Organization (WHO) has established guidelines to support the control of spread of a pandemic virus across and within borders.³ These guidelines provide a useful starting point for the development of U.S. Government national policy and could be modified and extended where necessary. The specifics of how a novel influenza virus will enter the United States and how the epidemic will actually unfold are unknown, and therefore, implementation of U.S. Government response must remain flexible and adaptable to a pandemic as it unfolds. To the extent possible and in accordance with treaties or other binding agreements, the United States will seek to coordinate containment measures with global organizations and partners.

Building on the International Efforts set forth in Chapter 4, this chapter identifies actions to address a number of key policy issues, including developing a cohesive, integrated U.S. border entry and exit strategy for aviation, maritime, and land border ports of entry, and a strategy to guide domestic efforts to delay the spread of disease. Within this policy framework, the Federal Government will develop a toolkit of options that can be used by individuals, within communities and States, and across the Nation. This toolkit will require significant, collaborative planning with States, communities, and the private sector to develop a range of scalable options, the protocols to implement them, and the trigger points that define thresholds to implement and remove measures. It will be critical to quantify, to the extent possible, the costs and benefits of these options, as many of the options will have significant second- and third-order effects.

Deciding which measures to use at which points in the lifecycle of a pandemic will require complex decisions that carefully weigh costs and benefits to evaluate which options best serve the public. Key factors that affect decision making include the ability to delay the pandemic and the resulting health benefits, the associated social and economic consequences, and the operational feasibility to implement transportation or border measures.

Ability to Delay a Pandemic and Resulting Health Benefits

There are many public health interventions and social distancing measures that can help limit international spread, reduce spread within nations and local populations, and reduce an individual's risk for infection.⁴ Transportation and border measures are two of many social distancing measures that can reduce transmission by limiting the proximity of individuals and reducing interaction within and across social networks. Modeling indicates that these measures are most effective when used in combination with other social distancing and public health measures, such as school closures, canceling large public gatherings, and limiting work group interaction.

Research is underway to better understand the effects of movement restrictions and their interactions with other social distancing measures in delaying a pandemic. Current models suggest that highly restrictive border measures could delay a pandemic by a few weeks. However, given the economic and societal impacts of these measures, recent recommendations from WHO encourage countries to focus their efforts to contain spread of a pandemic at national and community levels rather than at international borders. Based on a review of prior pandemics, including quarantines enacted during the 1918 pandemic as well as the 2003 SARS and influenza outbreak, WHO recommendations for border-related measures focus on providing information to international travelers, screening travelers departing countries with transmissible human infection, and limiting travel to affected areas. The

³World Health Organization. WHO global influenza preparedness plan: the role of WHO and recommendations for national measures before and during pandemics. November 2005.

⁴World Health Organization. Non-pharmaceutical interventions for pandemic influenza, international measures. 2006. Emerging Infection Diseases, Vol. 12, No. 1, Jan 2006.

recommendations for national and community measures during a pandemic focus on delaying spread and reducing effects through population-based measures.⁵ If the pandemic becomes severe, WHO recommends countries encourage social distancing measures and defer non-essential domestic travel to affected areas. As part of our pandemic planning efforts, guidance and protocols for border and domestic transportation measures will be developed that can be tailored, in the event of a pandemic, based on our level of domestic preparedness and real-time epidemiological disease characteristics, including transmission pattern, pandemic stage, and illness severity and extent.

Depending on the length, delay can provide valuable time to implement pandemic preparedness measures that have been planned in advance.⁶ A delay in spread may also allow the administration of pre-pandemic vaccine, assessment of disease epidemiology, and mobilization of resources for screening and diagnosis. It should be noted that current estimates are that it will take approximately 5 months to develop, produce, and distribute a pandemic vaccine after the declaration of a pandemic and isolation of the pandemic virus. While delay may reduce peak overall demand on the health care system, this will not necessarily translate to benefits at the community level. It is unlikely that communities will be able to shift scarce resources that will be needed locally once the pandemic reaches their area. Unlike a hurricane or other localized disaster, national capacity will not be easily distributed across communities and States. Scarce resources, such as personnel and ventilators, will be needed to meet local demand, and it is unlikely that transporting large numbers of infected patients out of medically overwhelmed areas would be a viable option (see Chapter 6 - Protecting Human Health).

Further work will be done to better understand the potential delay that can be obtained through transportation and border measures, how these measures work in concert with other public health and social distancing measures, and the resulting health benefits.

Social and Economic Consequences

The transportation system and the choices it offers support the social, economic, and business needs of communities. Travel is a critical part of our daily routine, with Americans taking an average of 1.1 billion trips per day, or about four trips for every person in the United States each day.⁷ A pandemic will require curtailment in travel and dramatically change our travel priorities, choices, and decisions, resulting in significant social and economic consequences.

By carefully examining the public's reliance on travel, existing travel patterns, and anticipated changes in travel during a pandemic, communities and States can develop a range of travel options that help delay spread of the pandemic, but also minimize social and economic consequences. For example, travel options can range from provision of travel information, voluntary advisories with health warnings, selective restrictions that limit certain types of travel, advance notification followed by a defined period of restriction, and mandatory measures under extreme circumstances.

At the onset of a pandemic, the public will almost certainly automatically limit vacation travel, and this would be recommended by public health authorities. It is anticipated that significant portions of business travel would be curtailed as well, with only essential travel continuing (related to overall pandemic response, sustaining critical infrastructure, and sustaining essential business functions). The purpose of

⁵World Health Organization. Non-pharmaceutical interventions for pandemic influenza, national and community measures. 2006. *Emerging Infection Diseases*, Vol. 12, No. 1, Jan 2006.

⁷U.S. Department of Transportation, Bureau of Transportation Statistics, Federal Highway Administration, National Household Travel Survey data, CD-ROM, February 2004.

⁶World Health Organization. WHO global influenza preparedness plan: the role of WHO and recommendations for national measures before and during pandemics. November 2005.

long-distance travel will also change. Initially, there may be a small surge in trips as people who are out of town return home. During an evolving pandemic it would not be surprising to expect family members to attempt to return home, as well as travel to assist other family members in need, such as elderly parents, ill family members, or others requiring special assistance.

In addition, it is presumed that the public will change daily travel patterns based on what they perceive will reduce their personal risk and the risk to their families and friends. Communities might see a surge in local travel as people gather groceries and other items similar to patterns before large snow storms where the public expects limitations in local travel for short durations. The planned length of travel curtailment is a significant factor that will help families and communities prepare for potential restrictions.

Clear messages regarding travel, risk of transmission, and specific travel recommendations for each stage of a pandemic will be important during a pandemic, and even more critical to guide preparedness efforts. There is a wide range of options that can be used to reduce overall travel, such as provision of travel information, voluntary advisories with health warnings, selective restrictions that limit certain types of travel, advance notification followed by a defined period of restriction, and mandatory measures that would prohibit all travel under extreme circumstances.

As travel restriction policies are evaluated, it will be critical to include the societal consequences of restrictions on individuals, families, and communities. Economic consequences vary widely based on transportation and border actions, but are discussed more under the following section.

Significant planning will be needed at local, State, and national levels to increase the Nation's preparedness, including joint planning to identify the range of transportation options and the supporting policies to facilitate safe transportation of food, fuel, and other critical supplies to affected communities, to help delay the spread with minimal societal and economic consequences.

Operational Feasibility

Effective transportation and border decisions must also consider operational feasibility, which includes evaluating how travel or trade measures could affect all relevant aspects of the transportation system and carefully weighing competing interests, views, and goals. Such an approach considers the complex, interconnected relationships of a decentralized network where small changes can strategically change travel and trade patterns or unknowingly transfer risk and/or create a secondary layer of challenges. For example, closure of a community to reduce spread would also sever that community from "just-in-time" deliveries to restock grocery stores, pharmacies, and could impede incoming emergency teams and or supplies for the medical and emergency response efforts underway. Even strong messages to reduce non-essential travel voluntarily, if not fully explained and accompanied by clear guidelines of how transport workers can reduce personal risk, could significantly reduce the movement of essential goods and availability of emergency transportation services. Transportation providers will be concerned about protecting their employees, risks to travelers and goods, and the potential impact on facilities and vehicles.

An operational approach gives full consideration to linkages, tradeoffs, or impacts on other transportation entities, facilities, systems, or users. Moreover, this approach considers non-health issues, such as manpower, market factors, how the transportation system operates, and the potential to transfer risk across the network. For example, mandatory restrictions in air travel could potentially transfer travel to other modes, such as rail or personal vehicles. The redundancies of the transportation network can make restrictions challenging to implement. However, a robust planning effort with the public, communities, and transportation providers and stakeholders can develop options based on a joint

understanding of risk, the natural changes in travel patterns, advance notice to aid preparedness, and, in extreme circumstances, mandatory restrictions to safeguard communities.

Curtailed and changes in border and transportation operations will be essential during a pandemic response and to a certain extent will likely occur spontaneously. Transportation professionals and planners will be a valuable resource to assist with the pre-pandemic planning that anticipates these changes and help communities and public health professionals identify how to achieve public health goals related to travel and trade at the time of a pandemic. This demands inclusive decision making with all parties involved both during pre-pandemic planning and at the earliest stages of the process, when issues and potential problems are first defined.

Circumstances and Impacts of Complete Border Closure

Any nation, including the United States, has the sovereign right to control, and if necessary, close its borders. However, in the event of a pandemic, a border closure would likely delay but not stop the spread of influenza to the United States, and would have significant negative social, economic, and foreign policy consequences. Other less drastic measures could potentially be layered to provide similar benefits without the substantial negative consequences of a complete border closure. The discussion below addresses U.S. border closure, as well as the potential that foreign countries may close their borders in response to a pandemic influenza outbreak in the United States.

In the absence of any border or travel restrictions, cases of pandemic influenza would likely arrive in the United States within 1 to 2 months after the virus first emergence elsewhere in the world. Current models suggest that highly restrictive border measures might delay the peak of pandemic by a few weeks. Depending on the length of delay, national preparedness may be enhanced as previously described.

An outbreak of pandemic influenza abroad might result in other countries closing their borders and generate calls for similar action in the United States. Outbreaks in Canada or Mexico might further increase pressure to close U.S. borders. Conversely, an outbreak within the United States might result in other countries closing their borders to the United States to delay spread. This could have a significant impact on overseas commerce, military missions, and the movement of American citizens.

A United States border closure would have a devastating economic impact, interrupt delivery of essential services, and would disrupt substantial cross-border commerce, resulting in hardship at manufacturing and production plants that rely on export markets and just-in-time delivery. United States international trade was almost \$2.3 trillion in 2004,⁸ with \$599 billion in international air freight alone.⁹ Given the importance of maritime trade to the U.S. economy,¹⁰ any significant disruptions to trade at our seaports will have immediate and significant economic impacts. During the 2002 West Coast dock shutdown, the economic loss was estimated at \$140 million per day.¹¹ A complete closure of U.S. borders to international travel and trade would be unprecedented.

⁸U.S. Dept. of Commerce, U.S. Census Bureau, Foreign Trade Division, *U.S. Exports of Merchandise and U.S. Imports of Merchandise*, March 2005.

⁹Based on U.S. Dept. of Commerce, U.S. Census Bureau, Foreign Trade Division, *U.S. Exports of Merchandise and U.S. Imports of Merchandise*, March 2005.

¹⁰Ships are the primary mode of transportation for world trade. Ships carry more than 95 percent of the U.S.' non-North American trade by weight and 75 percent by value, and 80 percent of the foreign oil imported by the U.S. Waterborne cargo contributes about 7.5 percent to the U.S. gross domestic product. In addition to its economic significance, the marine transportation system is vital for national security. The Departments of Defense and Transportation have designated 17 U.S. seaports as strategic because they are necessary for use by DOD in the event of a major military deployment. Thirteen of these ports are commercial seaports.

¹¹Calculated from Patrick L. Anderson and Ilhan K. Geckil, *Flash Estimate: Impact of West Coast Shutdown*, Anderson Economic Group (October 15, 2002).

Modeling suggests that border closure would not decrease the total number of illnesses or deaths. Moreover, when the Nation's economic needs require the re-opening of the border, there could be widespread public confusion about the safety of people, freight, and travel. Nevertheless, our level of preparedness when a pandemic strikes and the uncertainties about the characteristics of a pandemic virus requires us to plan for this possibility. The section below describes potential alternatives and later sections identify additional research to explore the effectiveness and economic consequences of these options.

Alternatives to Complete Border Closure and Other Containment Options

There are alternatives to complete border closure that may be effective in delaying the onset of a pandemic in the United States and can help minimize the risk of infection among travelers coming to the United States. These include targeted traveler restrictions to help contain the pandemic at its source, and implementation of layered, risk-based measures, including pre-departure, en route, and arrival screening and/or quarantine. While we should take measures to protect travelers and limit their ability to transmit disease, there is little benefit to trade restriction if there are adequate measures in place to limit exposure to infected individuals and potentially contaminated surfaces. Irrespective of the combination of interventions selected, our efforts should be taken collaboratively with other nations, although unilateral efforts may be necessary in extreme circumstances.

Travelers

The United States will work with the international community to implement targeted passenger travel restrictions (see Chapter 4 - International Efforts). As part of the preparedness effort, the United States will engage WHO and foreign governments to determine how countries with human outbreaks can support containment and help slow global spread of a pandemic. For example, pre-negotiated arrangements and partnerships with other countries could encourage all countries with outbreaks to rapidly restrict non-essential travel for all modes of transportation (e.g., air, vessel, and land travel) in return for technical and other forms of assistance. In addition, the United States could deny entry of travelers, or place conditions on the return of travelers from countries with outbreaks and other countries that have not instituted acceptable pre-departure screening, prohibit entry of travelers from the affected area, or continue to accept travelers with appropriate conditions from countries with outbreaks. Additional options would be considered for U.S. citizens planning to return home from affected areas, such as a voluntary quarantine to monitor for illness through one incubation period prior to departure. This could reduce risk of transmission for the United States, and help identify persons in need of medical care.

Individual screening, for influenza-like illness and risk factors for infection with a pandemic strain, of all persons entering the United States will help minimize the risk of transmission. However, such screening is challenged by a lack of sensitivity (e.g., asymptomatic infected individuals may not be detected) and specificity (e.g., many individuals with influenza-like illness will not be infected with a pandemic strain). The typical incubation period for influenza is 2 days and infected persons with influenza may be contagious for 24 hours prior to the onset of symptoms. Since some asymptomatic travelers, who are incubating influenza, may become symptomatic en route, overall screening effectiveness can be improved by adopting layered pre-departure, en route, and arrival screening measures. The policy of layered screening measures would apply to all U.S.-bound travelers from affected areas, but the characteristics of the outbreak, including the rapidity of spread, may make it necessary to implement this screening at all international airports from which U.S.-bound passengers originate. In addition, development of rapid diagnostic tests can dramatically change our ability to screen effectively.

- **Pre-departure Measures:** Effective host country health screening of all individuals prior to departure may reduce the risk of infected travelers exposing fellow travelers, aircraft and vessel crews, and others upon arrival. This is consistent with the WHO Global Influenza Preparedness Plan and with the newly revised International Health Regulations. Screening could be performed for signs of illness (e.g., temperature scanning) and for risk factors (e.g., contacts, travel history). A clear description of signs of illness and risk factors for infection with pandemic influenza will be critical to develop effective screening protocols. Significant additional personnel and resources will be needed to strengthen in-country pre-departure screening capacity, particularly in countries that are heavily affected by a pandemic. The number of infected persons traveling to the United States could also be reduced by isolating potentially exposed individuals for one incubation period prior to international travel. The need to develop pre-departure measures and identify the necessary staffing resources will apply equally to the United States when pandemic transmission occurs domestically.
- **En Route Measures:** Given the short incubation period of influenza, and the length of some international flights, one can assume that some travelers with influenza will develop their first symptoms during their journey. The training of flight and vessel crews to detect and manage ill travelers can decrease risk for others on the conveyance and permit assessment and treatment upon landing. When combined with pre-departure exit screening, this strategy would detect those who developed signs of illness while en route. Response would include moving ill persons away from other travelers, if possible, placing a surgical mask on the ill person, and emphasizing the importance of hygiene measures, such as hand washing. If a mask is not available, covering coughs and sneezes with a tissue or cloth that is disposed after use will also decrease risk. By regulation, the master of ship or commander of an aircraft destined for a U.S. port is required to report the presence of any ill persons (as defined in the regulation) or deaths on board to the nearest quarantine station at which the ship or aircraft will arrive. In its proposed rule, the Centers for Disease Control and Prevention (CDC) has proposed expanding the definition of ill persons to include additional illness criteria indicative of the presence of a quarantinable disease, such as pandemic influenza.
- **Arrival Measures:** Arrival screening may serve as an important additional layer if we cannot ensure the adequacy and effectiveness of other containment measures. It can also identify individuals who became ill during travel. Arrival screening can be imposed as a precautionary measure, irrespective of other containment measures. Travelers with influenza-like illness should be isolated and undergo diagnostic testing; other travelers may potentially be quarantined until definitive testing is complete. When developed, rapid diagnostic testing could greatly increase effectiveness of screening. These arrival procedures also provide an opportunity to educate travelers to increase their awareness of influenza symptoms and the need for seeking medical care and immediate home quarantine when compatible symptoms arise. It must be recognized that arrival screening will place additional demands on CDC Quarantine Station personnel and Customs and Border Protection officers and agents. It is critical that local quarantine plans leverage available Federal, State, and local assets to implement effective screening, quarantine, and isolation, and provide expanded access to medical treatment. Capacity could also be addressed by examining the costs and benefits of potentially funneling inbound international flights to a subset of U.S. airports. Preliminary research indicates that potentially 96 percent of all inbound

international flights arrive at 30 U.S. airports.¹² Additional work will be needed to explore and evaluate options with airlines, airports, and local authorities and public health professionals.

Cargo and Trade Goods

This risk of influenza transmission by cargo or trade goods, excluding live avian or animal cargo, is low. With effective protective measures for workers in specific settings, cargo shipments could continue. Because viable influenza virus may remain on surfaces for up to 48 hours, ship-borne cargo poses the lowest risk of virus transmission. Risk of transmission by or to the vessel's crew could be eliminated by confining them to the vessel and utilizing strict transmission prevention protocols with port personnel during loading/off loading operations. Given the greater speed of international air transport, additional measures may be needed for worker protection and, in some cases, to disinfect and/or isolate air cargo from a country with an outbreak.

Land Borders

Our approach to slowing the introduction of pandemic influenza through land borders will emphasize continental rather than national containment, and will respect our treaty commitments and other arrangements with Canada and Mexico. Our planning efforts with Canada and Mexico will include discussions of each country's efforts to support global containment, plans to implement travel restrictions, and commitments for rigorous screening at arrivals. Should the disease appear in Canada or Mexico, land borders would become the greatest point of vulnerability due to the high volume and nature of land border crossing. Specific measures used at land borders will depend on the temporal and geographic spread of disease and will require more intensive modeling to explore their potential effectiveness.

Unique challenges along our land borders will require significant outreach with the Canadian and Mexican governments and other stakeholders. On-time delivery of goods and workers being prevented from going to their jobs would create major challenges at land border locations, and could potentially affect the U.S. economy. On the northern border, the major manufacturing industries (e.g., automotive) would likely be adversely affected by restrictions or slow-downs at the border. On the southern border, textile and agriculture product importation could be impaired. In addition, there are a significant number of day workers that transit across the border. Therefore, planning should consider a range of alternatives, from approaches that permit the cross border flow of critical goods to complete border closure. Potentially infected illegal aliens attempting to cross between our ports of entry present another challenge and could create facility challenges related to quarantine.

Maintaining operational control of our Nation's borders is an essential function of the Department of Homeland Security (DHS). The presence of pandemic influenza in Central America or Mexico may trigger a mass migration. DHS would need to manage a large increase of additional attempted illegal entrants during a 2-month period. This spike will likely increase during a period when DHS resources are stretched due to employee absenteeism.

¹² U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, T100 SEGMENT data, year-end second quarter 2005. (Note: includes all scheduled flights, as well as most charter, military, and private international flights).

Complexity of Transportation Decisions in Emergencies

The complexities of the transportation system and its relationship with public safety, productivity, health, and the national economy require that its assets be managed wisely during any emergency. During some training exercises, emergency transportation decisions have been made without full appreciation of the resulting consequences, including serious economic implications.

Managing transportation decisions in a pandemic will require extraordinary cooperation between the varied and diverse elements of the sector. In many cases, decision makers will be simultaneously managing complex and competing interests. State and local governments, acting within their authorities, may impose restrictions or closures of transportation systems without consulting or coordinating with Federal entities. This can be in the form of State/county border closures or closure of transit systems, ports, or airports. This could have considerable impact on efforts to move patients, responders, medical personnel, critical pharmaceuticals, and essential supplies. A key role for the Federal Government will be to provide clear criteria to guide and inform State and local actions and to conduct outreach with State, community, and tribal entities to communicate a cohesive national strategy for maintaining movement of essential critical goods and services, while encouraging limitation of non-essential transportation. Closing State or local borders is highly unlikely to be cost-effective, may create significant shortages in essential commodities, and is not preferred (see also Chapter 9 - Institutions: Protecting Personnel and Ensuring Continuity of Operations).

Sustaining Critical Transportation Services

Sustaining critical services during a pandemic will be crucial to keep communities functioning and emergency supplies and resources flowing. Planning efforts need to assess systemic effects (i.e., supply chain impact, just-in-time delivery, warehousing, and logistics) and support the development of contingency plans to address lack of critical services and delivery of essential commodities, such as chlorine for water purification, gasoline, food, and medical supplies.

Due to expected high absenteeism, transportation services may be limited. Interstate movement will become increasingly constrained as the pandemic peaks and local travel restrictions may increase. Passenger transportation will likely decrease as the public opts not to travel due to possible exposure. This will likely begin in international aviation, cruise ships, and highway border crossings. Once cases are present in the United States, this decrease in passenger travel will occur domestically in private automobile, aviation, mass transit, passenger rail, and motor coach travel. However, there may also be a small surge of movement into affected areas as individuals try to return home or help stranded or ill relatives. Others may attempt to temporarily relocate to less populated areas in an attempt to reduce the likelihood of infection. At the beginning of the pandemic, there will also be requests to move emergency workers, equipment, and resources. As the disease spreads to multiple urban areas, emergency transportation of supplies and personnel could decrease because resources will be needed locally.

There is a need to examine critical junctures where the increase in demand for essential commodities and emergency services intersect with a large reduction in workforce due to absenteeism. Identifying these junctures will enable the sector to focus preparedness efforts on areas of the transportation system that will be under the greatest strain during a pandemic.

Emergency Transportation Services

A pandemic outbreak in the United States will result in the activation of the *National Response Plan* (NRP) and Emergency Support Function #1 - Transportation (ESF #1) to coordinate Federal support for emergency transportation services. Activation under pandemic conditions will be considerably more challenging, with many urban areas simultaneously affected for a sustained period of time, as opposed to historically localized and short-duration activations following natural disasters.

Management of a pandemic response during NRP activation will be driven by decisions at the State and local level. Transportation response in such an emergency will be vital, with the Federal role focusing on coordination and communication across the sector, in addition to its emergency transportation services under the NRP. Balancing the demands of a pandemic in the NRP context with existing resources and maintaining response capacity for other disasters or terrorist incidents will be a priority focus.

Another key area is patient movement, which is coordinated primarily by Emergency Support Function #8 - Public Health and Medical Services (ESF #8). It is unlikely that patient movement will be similar in scope and resource requirements to the patient evacuation that has occurred during major hurricanes. Patient movement is discussed in greater detail under Chapter 6 - Protecting Human Health.

Transportation and Border Preparedness

An influenza pandemic poses significant challenges that must be addressed in the border and transportation planning process. All private sector, State and local entity, and Federal Government plans need to address the following four key areas: (1) maintaining situational awareness; (2) rapidly containing cases or initial outbreaks; (3) sustaining critical transportation and border services; and (4) recovery of the transportation system.

Maintaining Situational Awareness

Due to the complexity of transportation and border decisions and the dynamic effect of local decisions on the national network, it will be essential to enhance and maintain situational awareness across the sector. Plans should address:

- Ensuring adequate information sharing, analysis, and coordination among the private sector, State and local governments, the Federal Government, and international partners.
- Providing updates on the status of the transportation system, including operations and closures across the country.
- Maintaining awareness of public health measures under consideration that may have transportation implications, such as vaccine/antiviral distribution, need for food, and other essential services during quarantines, school closures, “snow days,” travel restrictions, or other measures for social distancing.
- Establishing clear notification protocols to keep the private sector, State, local, and tribal governments, and the Federal Government informed of the pandemic threat, including early warning signs and potential cases.

Rapidly Containing Cases or Initial Outbreak

Early transportation containment measures are more effective in slowing the spread of a pandemic if they are part of a larger comprehensive strategy that incorporates other measures, such as social distancing, isolation, vaccination, and antiviral medications. New models are being developed that will provide additional information on the potential benefits of containment options, including domestic travel restrictions. Plans should address:

- The need for close coordination between public health and transportation planners and local, State, and tribal entities, and the Federal Government to understand and integrate emerging modeling on border and transportation decisions to delay the spread of a pandemic and potential health benefits, social and economic consequences, and operational feasibility.
- Developing a range of transportation and border options based on the various stages of a pandemic. These options should include a full range of voluntary and mandatory travel restrictions, identify costs and benefits, and trigger points to use and remove measures.
- Border entry and exit polices for travelers and cargo, and detailed protocols for air, maritime, and land border ports of entry.
- Identifying and mitigating workforce risks and concerns regarding potential exposure, establishing risk-based priorities for protective equipment and limited countermeasures, acquiring/distributing equipment and countermeasures, and conducting outreach with workers.

Sustaining Critical Transportation and Border Service

The private sector, State and local entities, and the Federal Government all have key roles in sustaining critical services, delivering essential commodities, and supporting public health recommendations (e.g., vaccine distribution, social distancing measures). Plans should address:

- Identifying and maintaining essential services (e.g., maintaining the National Airspace System) given anticipated high rates of absenteeism rates and surges in demand for emergency medical supplies and services.
- Developing and implementing screening protocols for cargo and travelers and decontamination protocols for transportation and border personnel, assets, and facilities.
- Assessing systemic effects on the transportation system (e.g., supply chain impact, just-in-time delivery, warehousing, and logistics) and borders.
- Developing contingency plans to address lack of essential services, including delivery of essential commodities such as chlorine for water purification, gasoline, food, fuel, and medical supplies.
- Assessing and mitigating workforce risks and concerns regarding potential exposure, establishing risk-based prioritization for countermeasures, acquiring/distributing protective equipment and supplies, and conducting outreach.
- Addressing the need to provide security to protect shipments of critical, high-demand supplies (e.g., vaccine or antiviral medications and shipments of food and fuel).

Recovery of the Transportation System

Returning the transportation system to pre-pandemic conditions may be a complex and challenging task. Confidence in safety will need to be restored to travelers and transportation workers, and transportation assets may require deferred maintenance and possibly decontamination/disinfection/cleaning before being returned to service. Reprioritization of suspended or in-transit commodities may be required and some carriers may have permanently ceased operations due to the operational/financial burdens caused by the pandemic.

Roles and Responsibilities

The Federal Government, State and local governments, and the private sector, all have important and interdependent roles in transportation-related decisions to prepare for, respond to, and recover from a pandemic. Effective management of the Nation's transportation system in a pandemic will require a highly coordinated response from across the transportation sector. A pandemic's impact on the health and welfare of our citizens and the condition of our national economy will be directly affected by the degree of integration and coordination of the different levels of government and the private sector during the crises.

State and local governments have primary responsibility for detecting and responding to disease outbreaks and implementing measures to minimize the health, social, and economic consequences. The transportation decisions made at critical junctures and in multiple metropolitan areas can have cascading effects on the rest of the system and on the Nation's ability to keep supplies and services operational. The potentially catastrophic nature of a pandemic will likely overwhelm local and State capabilities. Federal agencies will be called upon to provide additional support, but even these resources may be overwhelmed at the peak of a pandemic.

The Federal Government

The Federal Government will use all capabilities within its authority to support private sector and State and local transportation preparedness, response, and recovery efforts. The Federal Government will increase readiness to sustain critical Federal transportation and border services during a pandemic and provide emergency transportation services under the NRP.

The Federal Government will incorporate the following elements in departmental preparedness plans: (1) carrying out assigned responsibilities, and exercising authorities where necessary, to ensure a comprehensive and coordinated national effort; (2) supporting private sector and State and local government transportation and border preparedness and response, including providing clear guidance to State and local authorities; (3) sustaining critical Federal transportation and border services; and (4) increasing their ability to provide emergency transportation under the NRP.

The Implementation Plan (Plan) outlines issues related to transportation and border preparedness that intersect with the missions and responsibilities of a number of key Federal departments and will require joint planning and close collaboration. To coordinate the Federal Government's development and execution of the Plan, the Department of Homeland Security will lead border preparedness, surveillance, and response and the Department of Transportation will lead overall transportation preparedness, surveillance, and response. Both departments will work closely to ensure coordination across these areas and with relevant departments and stakeholders.

Department of Homeland Security: DHS is responsible for ensuring integrity of the Nation's infrastructure, domestic security, providing support to entry and exit screening for pandemic influenza at the borders, facilitating coordination for the overall response to a pandemic, and the provision of a common operating picture for all departments and agencies of the Federal Government. DHS is also responsible for securing the Nation's borders and facilitating legitimate trade and travel through U.S. ports of entry.

DHS supports coordination of the NRP, which is the primary mechanism for coordination of the Federal Government response to Incidents of National Significance, and will form the basis of the Federal pandemic response. The NRP provides an organizing framework for coordinating a variety of support areas, including transportation, mass care, and public affairs, which are led by other Federal departments (see Chapter 3 for more detail). DHS will collaborate with other departments on transportation and border decisions, including the ability to control the spread of a pandemic (Department of Health and Human Services (HHS), Department of Agriculture (USDA), Department of Transportation (DOT), and Department of the Interior (DOI)), understand social and economic consequences (Department of Commerce (DOC), DOT, Department of the Treasury (Treasury), Department of State (DOS), HHS, USDA, DHS components, DOI, and key stakeholders), international and domestic implications (DOS, DOT, DOC, DHS components, and key stakeholders), and to obtain the economic and operational feasibility of actions (DOT, DOC, DHS components, and key stakeholders).

Department of Health and Human Services: HHS's primary responsibilities are to protect the health of all U.S. citizens and provide essential human services. With respect to transportation and borders, HHS will be involved in entry and exit screening and, in consultation with Department of Labor (DOL), protecting the health of transportation and border workers who are implementing measures to limit spread. HHS will support rapid containment of localized outbreaks domestically. HHS will provide recommendations to State, local, tribal, and private sector entities on the ability of transportation restrictions to limit the spread of a pandemic, patient movement, and plans for traveler screening, isolation, and quarantine at ports of entry. In addition, HHS and USDA are responsible for the exclusion and seizure of infectious animals or animal products. HHS exercises this authority with respect to human health, while USDA exercises this authority with respect to animal health.

Department of Transportation: DOT will implement priorities to maintain essential functions of the national transportation system, and provide emergency management and guidance for civil transportation resources and systems. In its role in the global transportation network, DOT will conduct outreach with its established public and private stakeholders — strategically coordinating with international, domestic, and other Federal Government participants, consistent with its responsibilities under the NRP in support of DHS. DOT will consider the short- and long-term economic impacts of a pandemic on the transportation sector in order to develop strategies that might prevent disruption of transportation services.

Department of Defense: DOD's primary responsibilities are those actions required to protect DOD forces, maintain operational readiness, and sustain critical military missions. DOD will increase its readiness to sustain critical DOD services to support the NRP and elements of the U.S. Government's international response. DOD can provide additional support to the extent that DOD's National Security readiness is not compromised.

When directed by the Secretary of Defense in accordance with law, DOD will collaborate with DOS and DOT in building international partnerships and enhancing their transportation capability. Once an

outbreak occurs, DOD may play a role, consistent with existing agreements and legal authorities, in implementation of movement controls, controlling movement into and out of areas/borders with affected populations, and assisting in the transportation/movement of rapid response teams, medical countermeasures (antiviral medications and vaccines, if available), and logistical support materials to infected and at-risk populations according to established plan and guidelines when other public or private sector assets are not available.

Department of State: DOS will facilitate international cooperation and coordination and keep foreign governments, international businesses and organizations, and the public informed of U.S. policies and measures affecting travel and transportation. DOS will also communicate travel risk information to U.S. citizens residing and traveling abroad so as to allow them to make informed decisions and plans. In the event of U.S. Government-sponsored evacuations, DOS will provide appropriate assistance to U.S. citizens overseas.

Department of Agriculture: USDA is responsible for protecting the Nation's livestock, including poultry, from exotic or foreign animal diseases, such as highly pathogenic avian influenza. With respect to transportation and borders, USDA will determine, based on the country of origin and other factors, which articles, live animals, or animal products have the potential for introducing or spreading an exotic disease and will establish restrictions or exclusions on their importation into, and/or movements within, the United States. If live animals are not excluded from importation, USDA determines which live animals must undergo USDA-supervised quarantine and health examination prior to final entry into the United States.

Department of the Interior: DOI is responsible for permitting and inspection of wildlife and wildlife products in trade into and out of the United States. With respect to transportation and borders, DOI will work in partnership with DHS, USDA, and DOS to enforce and publicize wildlife border controls and, if appropriate, utilize its own permitting authorities to restrict the import or export of wild birds.

Department of Labor: DOL's primary responsibilities are those actions required to protect the health and safety of workers, including communication of information related to pandemic influenza to workers and employers, and other relevant activities.

State, Local, and Tribal Entities

State and community pandemic preparedness plans should address key transportation issues and outline social distancing measures and strategies to mitigate consequences. States will face challenges in availability of essential commodities, demands for services that exceed capacity, and public pressure to restrict transportation in ways that may hinder economic sustainment and delivery of emergency services and supplies.

State, local, and tribal entities should develop and exercise pandemic influenza plans that address transportation's role in maintaining State and community functions, including delivery of essential services, containment strategies, providing critical services to citizens, support for public health measures, and other key regional or local issues. State and local governments should involve transportation and health professionals to identify transportation options, consequences, and implications. Transportation and border plans should be integrated as part of a comprehensive State plan that addresses the full range of pandemic preparedness (i.e., public health, animal health, protecting institutions, and law enforcement, public safety, and security). States will also need to coordinate closely with neighboring States/regions and the Federal Government to assess the interdependencies of local, State, and national decisions on the viability of the sector.

The Private Sector and Critical Infrastructure Entities

The private sector will play an integral role in preparedness before a pandemic begins and should be part of the national response. As they prepare, respond, sustain, and recover from a pandemic, transportation owners/operators will strive to maintain as close to normal operations as possible within the constraints of a pandemic.

The private sector should develop pandemic influenza plans that identify challenges and outline strategies to sustain core transportation and border functions and mitigate economic consequences. Entities should engage the full spectrum of preparedness planning to maintain essential services as close to normal operations as possible within the constraints of a pandemic.

Individuals and Families

It is important for U.S. citizens to recognize and understand the degree to which their actions will govern the course of a pandemic. The success or failure of border and transportation measures are ultimately dependent upon the acts of individuals, and the collective response of 300 million U.S. citizens will significantly influence the shape of the pandemic and its medical, social, and economic outcomes (see *Individual, Family, and Community Response to Pandemic Influenza* between Chapters 5 and 6). Individuals will, in general, respond to a pandemic and to public health interventions in ways that they perceive to be congruent with their interests and their instinct for self-preservation, and border and transportation authorities should tailor their risk communication campaigns and interventions accordingly. This will directly affect the willingness of the public to participate in travel-related screening and support voluntary domestic and international travel limitations.

International Partners

The response to a pandemic will be a global one, necessitating action by international organizations and governments. DOT and DHS have relationships with many international organizations, governments, and the private sector due to the global nature of today's economy. In close coordination with DOS, DOT and DHS will leverage their international relationships to assist in ensuring the continued movement of goods, services, and people (see Chapter 4 — International Efforts).

Actions and Expectations

5.1. Pillar One: Preparedness and Communication

This section provides an overview of planning expectations across the transportation and border sector (i.e., the private sector, State and local entities, and the Federal Government) and a detailed discussion of actions the Federal Government will take to support preparedness.

Effective planning for a pandemic will require the development of plans, procedures, policies, and training to prepare for, respond to, and recover from a pandemic.

a. Planning for a Pandemic

- 5.1.1. Develop Federal implementation plans to support the *National Strategy for Pandemic Influenza*, to include all components of the U.S. Government and to address the full range of consequences of a pandemic.**

- 5.1.1.1. DHS and DOT shall establish an interagency transportation and border preparedness working group, including DOS, HHS, USDA, DOD, DOL, and DOC as core members, to develop planning assumptions for the transportation and border sectors, coordinate preparedness activities by mode, review products and their distribution, and develop a coordinated outreach plan for stakeholders, within 6 months. Measure of performance: interagency working group established, planning assumptions developed, preparedness priorities and timelines established by mode, and outreach plan for stakeholders in place.
- 5.1.1.2. HHS and DHS, in coordination with the National Economic Council (NEC), DOD, DOC, U.S. Trade Representative (USTR), DOT, DOS, USDA, Treasury, and key transportation and border stakeholders, shall establish an interagency modeling group to examine the effects of transportation and border decisions on delaying spread of a pandemic, and the associated health benefits, the societal and economic consequences, and the international implications, within 6 months. Measure of performance: interagency working group established, planning assumptions developed, priorities established, and recommendations made on which models are best suited to address priorities.
- 5.1.1.3. DHS and DOT, in coordination with DOD, HHS, USDA, Department of Justice (DOJ), and DOS, shall assess their ability to maintain critical Federal transportation and border services (e.g., sustain National Air Space, secure the borders) during a pandemic, revise contingency plans, and conduct exercises, within 12 months. Measure of performance: revised contingency plans in place at specified Federal agencies that respond to both international and domestic outbreaks and at least two interagency exercises carried out to test the plans.
- 5.1.1.4. DHS and DOT, in coordination with DOD, HHS, USDA, USTR, DOL, and DOS, shall develop detailed operational plans and protocols to respond to potential pandemic-related scenarios, including inbound aircraft/vessel/land border traffic with suspected case of pandemic influenza, international outbreak, multiple domestic outbreaks, and potential mass migration, within 12 months. Measure of performance: coordinated Federal operational plans that identify actions, authorities, and trigger points for decision making and are validated by interagency exercises.
- 5.1.1.5. DOD, in coordination with DHS, DOT, DOJ, and DOS, shall conduct an assessment of military support related to transportation and borders that may be requested during a pandemic and develop a comprehensive contingency plan for Defense Support to Civil Authorities, within 18 months. Measure of performance: Defense Support to Civil Authorities plan in place that addresses emergency transportation and border support.
- 5.1.1.6. DOT, in coordination with DHS, DOD, DOJ, HHS, DOL, and USDA, shall assess the Federal Government's ability to provide emergency transportation support during a pandemic under NRP ESF #1 and develop a contingency plan, within 18 months. Measure of performance: completed contingency plan that includes options for increasing transportation capacity, the potential need for military

support, improved shipment tracking, potential need for security and/or waivers for critical shipments, incorporation of decontamination and workforce protection guidelines, and other critical issues.

5.1.2. Continue to work with States, localities, and tribal entities to establish and exercise pandemic response plans.

- 5.1.2.1. DHS and HHS, in coordination with DOT and USDA, shall review existing grants or Federal funding that could be used to support transportation and border-related pandemic planning, within 4 months. Measure of performance: all State, local, and tribal governments are in receipt of, or have access to, guidance for grant applications.
- 5.1.2.2. DOT, in coordination with DHS, HHS, and transportation stakeholders, shall convene a series of forums with governors and mayors to discuss transportation and border challenges that may occur in a pandemic, share approaches, and develop a planning strategy to ensure a coordinated national response, within 12 months. Measure of performance: strategy for coordinated transportation and border planning is developed and forums initiated.
- 5.1.2.3. DOT and DHS, in coordination with HHS, USDA, and transportation stakeholders, shall develop planning guidance and materials for State, local, and tribal governments, including scenarios that highlight transportation and border challenges and responses to overcome those challenges, and an overview of transportation roles and responsibilities under the NRP, within 12 months. Measure of performance: State, local, and tribal governments have received or have access to tailored guidance and planning materials.
- 5.1.2.4. State, community, and tribal entities, in coordination with neighboring States and communities, the private sector, transportation providers, and health professionals, should develop transportation contingency plans that identify a range of options to respond to different stages of a pandemic, including support for public health containment strategies, maintaining State and community functions, transportation restriction options and consequences, delivery of essential goods and services, and other key regional or local issues, within 18 months.
- 5.1.2.5. DHS and DOT, in coordination with DOD and States, shall develop a range of options to cope with potential shortages of commodities and demand for essential services, such as building reserves of essential goods, within 20 months. Measure of performance: options developed and available for State, local, and tribal governments to refine and incorporate in contingency plans.

5.1.3. Continue to work with States, localities, and tribal entities to integrate non-health sectors, including the private sector and critical infrastructure entities, in these planning efforts.

- 5.1.3.1. DHS, in coordination with DOT, HHS, and USDA, shall conduct tabletop discussions and other outreach with private sector transportation and border

entities to provide background on the scope of a pandemic, to assess current preparedness, and jointly develop a planning guide, within 8 months. Measure of performance: private sector transportation and border entities have coordinated Federal guidance to support pandemic planning, including a planning guide that addresses unique border and transportation challenges by mode., within 8 months. Measure of performance: private sector transportation and border entities have coordinated Federal guidance to support pandemic planning, including a planning guide that addresses unique border and transportation challenges by mode.

- 5.1.3.2. DHS, in coordination with DOT, HHS, DOC, Treasury, and USDA, shall work with the private sector to identify strategies to minimize the economic consequences and potential shortages of essential goods (e.g., food, fuel, medical supplies) and services during a pandemic, within 12 months. Measure of performance: the private sector has strategies that can be incorporated into contingency plans to mitigate consequences of potential shortages of essential goods and services.
- 5.1.3.3. Private sector transportation and border entities, in coordination with States and customers, should develop pandemic influenza plans that identify challenges and outline strategies to sustain core functions, essential services, and mitigate economic consequences, within 16 months.

b. Communicating Expectations and Responsibilities

5.1.4. Provide guidance to the private sector and critical infrastructure entities on their role in the pandemic response, and considerations necessary to maintain essential services and operations despite significant and sustained worker absenteeism.

- 5.1.4.1. HHS, in coordination with DHS, DOT, and DOL, shall establish workforce protection guidelines and develop targeted educational materials addressing the risk of contracting pandemic influenza for transportation and border workers, within 6 months. Measure of performance: guidelines and materials developed that meet the diverse needs of border and transportation workers (e.g., customs officers or agents, air traffic controllers, train conductors, dock workers, flight attendants, transit workers, ship crews, and interstate truckers).
- 5.1.4.2. DHS, in coordination with DOT, DOL, Office of Personnel Management (OPM), and DOS, shall disseminate workforce protection information to stakeholders, conduct outreach with stakeholders, and implement a comprehensive program for all Federal transportation and border staff within 12 months. Measure of performance: 100 percent of workforce has or has access to information on pandemic influenza risk and appropriate protective measures.
- 5.1.4.3. HHS, in coordination with DHS, DOT, DOD, Environmental Protection Agency (EPA), and transportation and border stakeholders, shall develop and disseminate decontamination guidelines and timeframes for transportation and border assets and facilities (e.g., airframes, emergency medical services transport vehicles, trains, trucks, stations, port of entry detention facilities) specific to

pandemic influenza, within 12 months. Measure of performance: decontamination guidelines developed and disseminated through existing DOT and DHS channels.

5.2. Pillar Two: Surveillance and Detection

Early warning of a pandemic is critical to being able to rapidly employ resources to contain the spread of the virus. An effective detection system will save lives by allowing us to activate our response plans before the arrival of a pandemic virus in the United States. DHS will work closely with DOT, HHS, USDA, and DOS to develop and be prepared to implement screening protocols to enhance pre-departure, en route, and arrival screening at the U.S. border (land, air, and sea) for potentially infected travelers, animals, and other cargo.

a. Ensuring Rapid Reporting of Outbreaks

5.2.1. Advance mechanisms for “real-time” clinical surveillance in domestic acute care settings such as emergency departments, intensive care units, and laboratories to provide local, State, and Federal public health officials with continuous awareness of the profile of illness in communities, and leverage all Federal medical capabilities, both domestic and international, in support of this objective.

5.2.1.1. HHS and USDA, in coordination with DHS, DOT, DOS, DOD, DOI, and State, local, and international stakeholders, shall review existing transportation and border notification protocols to ensure timely information sharing in cases of quarantinable disease, within 6 months. Measure of performance: coordinated, clear interagency notification protocols disseminated and available for transportation and border stakeholders.

5.2.2. Develop and deploy rapid diagnostics with greater sensitivity and reproducibility to allow onsite diagnosis of pandemic strains of influenza at home and abroad, in humans, to facilitate early warning, outbreak control, and targeting of antiviral therapy.

5.2.2.1. DHS, in coordination with HHS and DOD, shall deploy human influenza rapid diagnostic tests with greater sensitivity and specificity at borders and ports of entry to allow real-time health screening, within 12 months of development of tests. Measure of performance: diagnostic tests, if found to be useful, are deployed; testing is integrated into screening protocols to improve screening at the 20-30 most critical ports of entry.

b. Using Surveillance to Limit Spread

5.2.3. Develop mechanisms to rapidly share information on travelers who may be carrying or may have been exposed to a pandemic strain of influenza, for the purposes of contact tracing and outbreak investigation.

5.2.3.1. DHS, in coordination with HHS, DOT, DOS, and DOD, shall work closely with domestic and international air carriers and cruise lines to develop and implement protocols (in accordance with U.S. privacy law) to retrieve and

rapidly share information on travelers who may be carrying or may have been exposed to a pandemic strain of influenza, within 6 months. Measure of performance: aviation and maritime protocols implemented and information on potentially infected travelers available to appropriate authorities.

5.2.4. Develop and exercise mechanisms to provide active and passive surveillance during an outbreak, both within and beyond our borders.

- 5.2.4.1. HHS, in coordination with DHS, DOT, DOS, DOC, and DOJ, shall develop policy recommendations for aviation, land border, and maritime entry and exit protocols and/or screening and review the need for domestic response protocols or screening within 6 months. Measure of performance: policy recommendations for response protocols and/or screening.
- 5.2.4.2. HHS, DHS, and DOT, in coordination with DOS, DOC, Treasury, and USDA, shall develop policy guidelines for international and domestic travel restrictions during a pandemic based on the ability to delay the spread of disease and the resulting health benefits, associated economic impacts, international implications, and operational feasibility, within 8 months. Measure of performance: interagency travel curtailment policy guidelines developed that address both voluntary and mandatory travel restrictions.
- 5.2.4.3. DOS, in coordination with DHS, DOT, and HHS, in consultation with aviation, maritime, and tourism industry stakeholders as appropriate, and working with international partners and through international organizations as appropriate, shall promote the establishment of arrangements through which countries would: (1) voluntarily limit travel if affected by outbreaks of pandemic influenza; and (2) establish pre-departure screening protocols for persons with influenza-like illness, within 16 months. Measure of performance: arrangements for screening protocols are negotiated.
- 5.2.4.4. DOS and HHS, in coordination with DHS, DOT, and transportation and border stakeholders, shall assess and revise procedures to issue travel information and advisories related to pandemic influenza, within 12 months. Measure of performance: improved interagency coordination and timely dissemination of travel information to stakeholders and travelers.
- 5.2.4.5. DOT and DHS, in coordination with HHS, DOD, DOS, airlines/air space users, the cruise line industry, and appropriate State and local health authorities, shall develop protocols¹³ to manage and/or divert inbound international flights and vessels with suspected cases of pandemic influenza that identify roles, actions, relevant authorities, and events that trigger response, within 12 months. Measure of performance: interagency response protocols for inbound flights completed and disseminated to appropriate entities.

¹³Protocols will be revised as new rapid diagnostic tests become available.

¹⁴Protocols will be revised as new rapid diagnostic tests become available.

- 5.2.4.6. HHS, in coordination with DHS, DOT, DOS, DOD, air carriers/air space users, the cruise line industry, and appropriate State and local health authorities, shall develop en route protocols for crewmembers onboard aircraft and vessels to identify and respond to travelers who become ill en route and to make timely notification to Federal agencies, health care providers, and other relevant authorities, within 12 months. Measure of performance: protocols developed and disseminated to air carriers/air space users and cruise line industry.
- 5.2.4.7. DHS, DOT, and HHS, in coordination with transportation and border stakeholders, and appropriate State and local health authorities, shall develop aviation, land border, and maritime entry and exit protocols and/or screening protocols,¹⁴ and education materials for non-medical, front-line screeners and officers to identify potentially infected persons or cargo, within 10 months. Measure of performance: protocols and training materials developed and disseminated.
- 5.2.4.8. DHS and HHS, in coordination with DOT, DOJ, and appropriate State and local health authorities, shall develop detection, diagnosis, quarantine, isolation, EMS transport, reporting, and enforcement protocols and education materials for travelers, and undocumented aliens apprehended at and between Ports of Entry, who have signs or symptoms of pandemic influenza or who may have been exposed to influenza, within 10 months. Measure of performance: protocols developed and distributed to all ports of entry.
- 5.2.4.9. DHS, in coordination with DOS, HHS, Treasury, and the travel and trade industry, shall tailor existing automated screening programs and extended border programs to increase scrutiny of travelers and cargo based on potential risk factors (e.g., shipment from or traveling through areas with pandemic outbreaks) within 6 months. Measure of performance: enhanced risk-based screening protocols implemented.
- 5.2.4.10. HHS, DHS, and DOT, in coordination with DOS, State, community and tribal entities, and the private sector, shall develop a public education campaign on pandemic influenza for travelers, which raises general awareness prior to a pandemic and includes messages for use during an outbreak, within 15 months. Measure of performance: public education campaign developed on how a pandemic could affect travel, the importance of reducing non-essential travel, and potential screening measures and transportation and border messages developed based on pandemic stages.
- 5.2.5. Develop screening and monitoring mechanisms and agreements to appropriately control travel and shipping of potentially infected products to and from affected regions if necessary, and to protect unaffected populations.**
- 5.2.5.1. HHS and DHS, in coordination with DOS, DOT, DOD, DOL, and international and domestic stakeholders, shall develop vessel, aircraft, and truck cargo protocols to support safe loading and unloading of cargo while preventing transmission of influenza to crew or shore-side personnel, within 12 months.

- Measure of performance: protocols disseminated to minimize influenza spread between vessel, aircraft, and truck operators/crews and shore-side personnel.
- 5.2.5.2. USDA, in coordination with DHS, DOI, and HHS, shall review the process for withdrawing permits for importation of live avian species or products and identify ways to increase timeliness, improve detection of high-risk importers, and increase outreach to importers and their distributors, within 6 months. Measure of performance: revised process for withdrawing permits of high-risk importers.
- 5.2.5.3. USDA, in coordination with DOI, DHS, shall enhance protocols at air, land, and sea ports of entry to identify and contain animals, animal products, and/or cargo that may harbor viruses with pandemic potential and review procedures to quickly impose restrictions, within 6 months. Measure of performance: risk-based protocols established and in use.
- 5.2.5.4. USDA, in coordination with DHS, shall review the protocols, procedures, and capacity at animal quarantine centers to meet the requirements outlined in Part 93 of Title 9 of the Code of Federal Regulations, within 4 months. Measure of performance: procedures in place to respond effectively and efficiently to the arrival of potentially infected avian species, including provisions for adequate quarantine surge capacity.
- 5.2.5.5. USDA, in coordination with DHS, DOJ, and DOI, shall enhance risk management and anti-smuggling activities to prevent the unlawful entry of prohibited animals, animal products, wildlife, and agricultural commodities that may harbor influenza viruses with pandemic potential, and expand efforts to investigate illegal commodities, block illegal importers, and increase scrutiny of shipments from known offenders, within 9 months. Measure of performance: plan developed to decrease smuggling and further distribution of prohibited agricultural commodities and products with influenza risk.
- 5.2.5.6. USDA, DHS, and DOI, in coordination with DOS, HHS, and DOC, shall conduct outreach and expand education campaigns for the public, agricultural stakeholders, wildlife trade community, and cargo and animal importers/exporters on import and export regulations and influenza disease risks, within 12 months. Measure of performance: 100 percent of key stakeholders are aware of current import and export regulations and penalties for non-compliance.

5.3. Pillar Three: Response and Containment

As the threat of a pandemic increases, the United States will implement incremental, risk-based measures at ports of entry and require similar pre-departure measures at select foreign points of embarkation. Regardless of where an outbreak occurs, the U.S. Government will use its authorities and resources to support rapid containment – whether working with international partners to contain overseas outbreaks or supporting State, local, or private sector efforts to contain domestic outbreaks. DHS should work with DOS, DOT, HHS, Treasury, and USDA to implement risk-based measures to slow the spread of a pandemic, minimize social and economic

consequences both internationally and domestically, and ensure operational feasibility. Following is a range of options that will be considered and the agency or agencies responsible for implementation (see also Chapter 4 — International Efforts).

In support of DHS, DOT serves as the coordinator and primary agency for ESF #1. This support function is designed to provide transportation support to assist in domestic incident management and coordinate the recovery, restoration, and safety/security of the transportation sector. Under the NRP, other support agencies include USDA, DOC, DOD, Department of Energy (DOE), DHS, DOI, DOJ, DOS, General Services Administration (GSA), and the U.S. Postal Service.

a. Containing Outbreaks

5.3.1. Encourage all levels of government, domestically and globally, to take appropriate and lawful action to contain an outbreak within the borders of their community, province, state, or nation.

- 5.3.1.1. DOS and DHS, in coordination with DOT, DOC, HHS, Treasury, and USDA, shall work with foreign counterparts to limit or restrict travel from affected regions to the United States, as appropriate, and notify host government(s) and the traveling public. Measure of performance: measures imposed within 24 hours of the decision to do so, after appropriate notifications made.
- 5.3.1.2. DOS, in coordination with DOT, HHS, DHS, DOD, air carriers, and cruise lines, shall work with host countries to implement agreed upon pre-departure screening based on disease characteristics and availability of rapid detection methods and equipment. Measure of performance: screening protocols agreed upon and put in place in countries within 24 hours of an outbreak.
- 5.3.1.3. DOS, in coordination with HHS, DHS, and DOT, shall offer transportation-related technical assistance to countries with outbreaks. Measure of performance: countries with outbreaks receive U.S. offer of technical support within 36 hours of an outbreak.
- 5.3.1.4. DHS, in coordination with DOS, USDA and DOI, shall provide countries with guidance to increase scrutiny of cargo and other imported items through existing programs, such as the Container Security Initiative, and impose country-based restrictions or item-specific embargoes. Measure of performance: guidance, which may include information on restrictions, is provided for increased scrutiny of cargo and other imported items, within 24 hours upon notification of an outbreak
- 5.3.1.5. DHS, in coordination with DOT, HHS, DOS, DOD, USDA, appropriate State and local authorities, air carriers/air space users, airports, cruise lines, and seaports, shall implement screening protocols at U.S. ports of entry based on disease characteristics and availability of rapid detection methods and equipment. Measure of performance: screening implemented within 48 hours upon notification of an outbreak.

5.3.1.6. DHS, in coordination with DOT, HHS, USDA, DOD, appropriate State, and local authorities, air carriers and airports, shall consider implementing response or screening protocols at domestic airports and other transport modes as appropriate, based on disease characteristics and availability of rapid detection methods and equipment. Measure of performance: screening protocols in place within 24 hours of directive to do so.

5.3.2. Where appropriate, use governmental authorities to limit non-essential movement of people, goods, and services into and out of areas where an outbreak occurs.

5.3.2.1. DHS, DOS, and HHS, in coordination with DOT and USDA, shall issue travel advisories/public announcements for areas where outbreaks have occurred and ensure adequate coordination with appropriate transportation and border stakeholders. Measure of performance: coordinated announcements and warnings developed within 24 hours of becoming aware of an outbreak and timely updates provided as required.

5.3.2.2. DHS and DOT, in coordination with DOS and Treasury, and international and domestic stakeholders, shall consider activating plans, consistent with international law, to selectively limit or deny entry to U.S. airspace, U.S. territorial seas (12 nautical miles offshore), and ports of entry, including airports, seaports, and land borders and/or restrict domestic transportation, based on risk, public health benefits, and economic impacts. Measure of performance: measures implemented within 6 hours of decision to do so.

5.3.2.3. DHS, in coordination with USDA, DOS, DOC, DOI, and shippers, shall rapidly implement and enforce cargo restrictions for export or import of potentially contaminated cargo, including embargo of live birds, and notify international partners/shippers. Measure of performance: measures implemented within 6 hours of decision to do so

b. Sustaining Infrastructure, Essential Services, and the Economy

5.3.3. Encourage the development of coordination mechanisms across American industries to support the above activities during a pandemic.

5.3.3.1. HHS and USDA, in coordination with DHS, DOT, DOS, and DOI, shall provide emergency notifications of probable or confirmed cases and/or outbreaks to key international, Federal, State, local, and tribal transportation and border stakeholders through existing networks. Measure of performance: emergency notifications occur within 24 hours or less of events of probable or confirmed cases or outbreaks.

5.3.3.2. DHS and DOT, in coordination with DOS, shall gather information from the private sector, international, State, local, and tribal entities, and transportation associations to assess and report the status of the transportation sector. Measure of performance: decision makers have current and accurate information on the status of the transportation sector.

- 5.3.4. Provide guidance to activate contingency plans to ensure that personnel are protected, that the delivery of essential goods and services is maintained, and that sectors remain functional despite significant and sustained worker absenteeism.**
- 5.3.4.1. DHS and DOT shall notify border and transportation stakeholders and provide recommendations to implement contingency plans and/or use authorities to restrict movement based on ability to limit spread, economic and societal consequences, international considerations, and operational feasibility. Measure of performance: border and transportation stakeholders receive notification and recommendations within no more than 24 hours (depending on urgency) of an outbreak or significant development that may warrant a change in stakeholder actions or protective measures.
- 5.3.4.2. DHS and DOT shall consider activating contingency plans as needed to ensure availability of Federal personnel at more critical facilities and higher volume crossings or hubs. Measure of performance: Federal services sustained at high-priority/high-volume facilities.
- 5.3.4.3. DHS, if needed, will implement contingency plans to maintain border control during a period of pandemic influenza induced mass migration. Measure of performance: contingency plan activated within 24 hours of notification.
- 5.3.4.4. DHS and DOT, in coordination with USDA, DOI, DOC, and DOS, shall consult with the domestic and international travel industry (e.g., carriers, hospitality industry, and travel agents) and freight transportation partners to discuss travel and border options under consideration and assess potential economic and international ramifications prior to implementation. Measure of performance: initial stakeholder contacts and solicitation for inputs conducted within 48 hours of an outbreak and re-established if additional countries affected.
- 5.3.4.5. DOT shall issue safety-related waivers as needed, to facilitate efficient movement of goods and people during an emergency, balancing the need to expedite services with safety, and States should consider waiving state-specific regulatory requirements, such as size and weight limits and convoy registration. Measure of performance: all regulatory waivers as needed balance need to expedite services with safety.
- 5.3.4.6. DOJ and DHS shall protect targeted shipments of critical supplies and facilities by providing limited Federal security forces under Emergency Support Function #13 - Public Safety and Security (ESF #13) of the NRP, as needed. Measure of performance: all appropriate Federal, State, local, and tribal requests for Federal law enforcement and security assistance met via activation of ESF #13 of the NRP. (See also Chapter 8 - Law Enforcement, Public Safety, and Security.)
- 5.3.4.7. DHS, in coordination with DOS, DOT, DOD, and the Merchant Marine, shall work with major commercial shipping fleets and the international community to ensure continuation of maritime transport and commerce, including activation of plans, as needed, to provide emergency medical support to crews of vessels that are not capable of safe navigation. Measure of performance: maritime

transportation capacity meets demand and vessel mishaps remain proportional to number of ship movements.

- 5.3.4.8. DOD, in coordination with DHS and DOS, shall identify those domestic and foreign airports and seaports that are considered strategic junctures for major military deployments and evaluate whether additional risk-based protective measures are needed, within 18 months. Measure of performance: identification of critical air and seaports and evaluation of additional risk-based procedures, completed.

5.3.5. Determine the spectrum of infrastructure-sustainment activities that the U.S. military and other government entities may be able to support during a pandemic, contingent upon primary mission requirements, and develop mechanisms to activate them.

- 5.3.5.1. DOT, in coordination with DHS and other ESF #1 support agencies, shall monitor and report the status of the transportation sector, assess impacts, and coordinate Federal and civil transportation services in support of Federal agencies and State, local, and tribal entities (see Chapter 6 — Protecting Human Health, for information on patient movement (ESF #8)). Measure of performance: when ESF #1 is activated, regular reports provided, impacts assessed, and services coordinated as needed.
- 5.3.5.2. DOT, in coordination with DHS and other ESF #1 support agencies, shall coordinate emergency transportation services to support domestic incident management, including transport of Federal emergency teams, equipment, and Federal Incident Response supplies. Measure of performance: all appropriate Federal, State, local, and tribal requests for transportation services provided on time via ESF #1 of the NRP.
- 5.3.5.3. DOT, in coordination with DHS, State, local, and tribal governments, and the private sector, shall monitor system closures, assess effects on the transportation system, and implement contingency plans. Measure of performance: timely reports transmitted to DHS and other appropriate entities, containing relevant, current, and accurate information on the status of the transportation sector and impacts resulting from the pandemic; when appropriate, contingency plans implemented within no more than 24 hours of a report of a transportation sector impact or issue.
- 5.3.5.4. DOT, in support of DHS and in coordination with other ESF #1 support agencies, shall work closely with the private sector and State, local, and tribal entities to restore the transportation system, including decontamination and re-prioritization of essential commodity shipments. Measure of performance: backlogs or shortages of essential commodities and goods quickly eliminated, returning production and consumption to pre-pandemic levels.
- 5.3.5.5. DOD, when directed by Secretary of Defense and in accordance with law, shall monitor and report the status of the military transportation system and those military assets that may be requested to protect the borders, assess impacts (to include operational impacts), and coordinate military services in support of

Federal agencies and State, local, and tribal entities. Measure of performance: when DOD activated, regular reports provided, impacts assessed, and services coordinated as needed.

- 5.3.5.6. DOT and DHS, in coordination with NEC, Treasury, DOC, HHS, DOS, and the interagency modeling group, shall assess the economic, safety, and security related effects of the pandemic on the transportation sector, including movement restrictions, closures, and quarantine, and develop strategies to support long-term recovery of the sector, within 6 months of the end of a pandemic. Measure of performance: economic and other assessments completed and strategies implemented to support long-term recovery of the sector.

c. Ensuring Effective Risk Communication

5.3.6. Ensure that timely, clear, coordinated messages are delivered to the American public from trained spokespersons at all levels of government and assist the governments of affected nations to do the same.

- 5.3.6.1. DOT and DHS, in coordination with HHS, DOS, and DOC, shall conduct media and stakeholder outreach to restore public confidence in travel. Measure of performance: outreach delivered and traveling public resumes use of the transportation system at or near pre-pandemic levels.
- 5.3.6.2. DHS and DOT, in coordination with DOS, DOD, HHS, USDA, DOI, and State, local, and tribal governments, shall provide the public and business community with relevant travel information, including shipping advisories, restrictions, and potential closing of domestic and international transportation hubs. Measure of performance: timely, consistent, and accurate traveler information provided to the media, public, and business community.