



Implementation Plan Three Year Summary

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Introduction

In 2006, the U.S. Government published the *National Strategy for Pandemic Influenza Implementation Plan (Implementation Plan)*, which laid out steps necessary to address the threat of a severe influenza such as the one posed if the currently circulating avian H5N1 influenza evolved into an easily transmissible human pathogen. The *Implementation Plan* defined a “severe pandemic” as one that has significant implications for the economy, national security, and the basic functioning of society. It assigned specific responsibilities to Federal departments and agencies, with specific timelines for implementation and measures of progress. Furthermore, it provided initial guidance to State, local, and tribal entities, businesses, and non-governmental organizations (NGOs) and other partners.

This Three Year Summary provides a historical record to report the Federal Government’s progress in addressing actions due to be completed within 36 months of the initial release of the *Implementation Plan* and reflects that progress as of April 30, 2009. Although the closely-monitored H5N1 influenza strain did not evolve into a human pandemic strain over those three years, a different influenza virus caused a pandemic in 2009. In late April 2009, human outbreaks associated with a novel influenza virus, 2009 H1N1 Influenza A, were confirmed in Mexico and the United States. On June 11, 2009, the WHO officially declared an influenza pandemic and raised its pandemic alert phase to 6. Fortunately, however, the characteristics of 2009 H1N1 influenza virus have not caused the economic or societal interruptions anticipated in the *Implementation Plan* and its actions. 2009 H1N1 disease severity has been generally similar to what is seen during regular influenza seasons (although different age groups have been predominantly affected, with most cases, and most severe cases, occurring in older children and adults less than 65 years of age).

Moreover, 2009 H1N1 influenza is continuing to circulate, and response efforts are ongoing. Thus, the Three Year Summary does not describe how 2009 H1N1-related response activities have contributed to progress in fulfilling the 324 actions in the *Implementation Plan*. Instead, the *Three Year Summary* provides a detailed record of U.S. pandemic preparedness at the time the 2009 H1N1 flu outbreak began. Thus, this record can serve as a reference point for future reviews of the response to the 2009 H1N1 flu pandemic. Accordingly, it

does not incorporate additional planning, activities or lessons learned from the 2009 H1N1 experience and should not be construed as reflecting the current state of pandemic preparedness.

Prior updates to the *Implementation Plan*, also posted on www.flu.gov, include six-month, one-year, and two-year reviews of progress made in addressing the *Implementation Plan's* 324 action items. The format of the Three Year Summary is similar to prior updates. The actions are reproduced from the *Implementation Plan* and are organized by the chapters of the *Implementation Plan*:

Chapter 4: International Efforts

Chapter 5: Transportation and Borders

Chapter 6: Protecting Human Health

Chapter 7: Protecting Animal Health

Chapter 8: Law Enforcement, Public Safety, and Security

Chapter 9: Institutions: Protecting Personnel and Ensuring Continuity of Operations

Each action, in bold, is followed by a summary of progress, prepared by relevant departments and agencies.

The status of each action is indicated directly after the action number. A determination of “complete” indicates the intent of the action has been accomplished; however, continuous improvement is always the goal. Due to a desire to constantly improve upon and not lose momentum gained from past efforts, including scientific research and outreach to key stakeholders, work may be continuing for many of these actions, whether labeled here as “complete” or “in progress.” A determination of “in progress” indicates additional work remains to meet the goal of the action item.

The Three Year Summary is divided into four sections.

The first section includes only those actions due within the specified time period of review (36 months in this review). Two hundred sixty-nine items had actions due by 36 months. Two hundred forty-four were designated "complete" and 25 were designated "in progress."

The second section includes those actions due beyond the specified time period of review, which is currently 36 months. Only one action, 6.1.8.1., which is due at 60 months, remains in this category. A status update is provided for this action.

The third section includes those 20 actions in the *Implementation Plan* that do not direct the readiness of specific, individual Federal departments. All but 17 of the 324 actions in the *Implementation Plan* are directed toward the Federal Government and have a measure of performance. These 17 actions without a measure of performance are directed toward non-Federal entities and advisory in nature and are included in this section. Three additional actions included in this section are aimed at the Federal Government writ large and include measures of performance. Progress associated with these 3 actions are detailed, while the 17 actions directed toward non-Federal entities are not specifically addressed in this report.

The fourth section includes the 34 actions that have measures of performance and timeframes for assessment associated with an actual pandemic or animal outbreak in the United States. As noted above, the 2009 H1N1 pandemic is continuing to unfold and response efforts are ongoing; thus the update to the actions listed below does not include 2009 H1N1-related activities. The benchmarks set forth in these 34 actions (and others) will be considered in after-action reviews conducted by Federal departments and agencies in response to 2009 H1N1 influenza.

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Chapter 4: International Efforts

4.1.1.1. Complete

DOS, in coordination with HHS, USAID, DOD, and DOT, shall work with the Partnership, the Senior UN System Coordinator for Avian and Human Influenza, other international organizations (e.g., WHO, World Bank, OIE, FAO) and through bilateral and multilateral initiatives to encourage countries, particularly those at highest risk, to develop and exercise national and regional avian and pandemic response plans within 12 months. Measure of performance: 90 percent of high-risk countries have response plans and plans to test them.

The Department of State (DOS) has emphasized to all countries that they should have response plans to ensure pandemic preparedness. DOS supports preparedness efforts in more than 75 countries, along with the World Health Organization (WHO), the Food and Agriculture Organization (FAO), the World Organization for Animal Health (OIE), and other international and in-country partners. WHO has indicated that all 193 WHO Member States have some form of national pandemic preparedness plans and that it is working to expand the number of countries who have funded the plans and established standard operating procedures. WHO also reports that 90 percent of those countries considered high-risk have response plans and plans to test them. HHS/CDC developed the National Inventory of Core Capabilities for Pandemic Influenza Preparedness and Response (National Inventory) to document the status and progress of preparedness over time by measuring indicators of quality, coverage, and timeliness in the realm of human health. While current risk varies by country and region of the world, the National Inventory offers practical information that national and international public health agencies and policy-makers can use to better prepare for future outbreaks and a possible pandemic. In 2008, HHS/CDC completed data collection in 40 countries worldwide.

The National Inventory has been translated into six languages and complements the WHO recommendations for countries to assess their preparedness and identify immediate steps to fill identified gaps. For example, the findings have been used to promote cross-border collaboration to enhance preparedness, support harmonization of national and international preparedness and response plans, and encourage exchange of information between national and sub-national levels. The second round of data collection begins in early 2010. Upon completion, participating countries will have high-quality data to demonstrate tangible progress in specific domains of preparedness and response.

4.1.1.2. Complete

USDA, USAID, and HHS shall use epidemiological data to expand support for animal disease and pandemic prevention and preparedness efforts, including provision of technical assistance to veterinarians and other agricultural scientists and policymakers, in high-risk countries within 12 months. Measure of performance: all high-risk and affected countries have in place (1) national task forces meeting regularly with representation from both human and animal health sectors, government ministries, businesses, and NGOs; (2) national plans, based on scientifically valid information, developed, tested, and implemented for containing influenza in animals with human pandemic potential and for responding to a human pandemic.

All affected and high-risk countries have national task forces in place and have either developed or are developing national plans for avian and pandemic influenza response. To strengthen global preparedness and planning, the U.S. Government (USG) has provided technical assistance and support for planning efforts to government ministries, international organizations, and private-sector partners for their respective avian and pandemic plans in affected, high-risk, and at-risk countries. The USG is implementing a national inventory of

core capabilities for pandemic preparedness and response that will provide aggregated data on the status of national response plans and capabilities. Results from 40 countries were received by December 31, 2008. The USG assists efforts to increase surveillance, prevention, and containment capacity at both national and local levels. Since 2005, the USG has partnered to support training for more than 129,000 animal health workers and 36,000 human health workers in technical areas related to disease surveillance, detection, and response elements of national influenza preparedness and response plans. At the global level, we are supporting WHO's Global Outbreak and Alert Response Network (GOARN) and the Global Avian Influenza Network for Surveillance to collect and share data related to highly pathogenic avian influenza (HPAI) H5N1 control; this provides critical support for early warnings, which are a significant component of national preparedness and response.

4.1.1.3 Complete

DOD, in coordination with DOS and other appropriate Federal agencies, host nations, and regional alliance military partners, shall, within 18 months: (1) conduct bilateral and multilateral assessments of the avian and pandemic preparedness and response plans of the militaries in partner nations or regional alliances such as NATO focused on preparing for and mitigating the effects of an outbreak on assigned mission accomplishment; (2) develop solutions for identified national and regional military gaps; and (3) develop and execute bilateral and multilateral military-to-military influenza exercises to validate preparedness and response plans. Measure of performance: all countries with endemic avian influenza engaged by U.S. efforts; initial assessment and identification of exercise timeline for the military of each key partner nation completed.

The Department of Defense (DOD) has conducted assessments and exercises and/or developed exercise timelines with military allies and partners that have elected to participate. Combatant commands work with Ministries of Defense to further advance their planning and training, assist in developing solutions for identified national and regional military shortfalls, and develop and execute bilateral and multilateral military-to-military influenza exercises to validate preparedness and response plans.

Combatant commands have conducted numerous exercises and conferences with partner nations throughout 2008, and the following have already taken place in 2009: 1) a joint workshop between U.S. Northern Command, Mexico, and Canada; 2) an exercise with U.S. Northern Command, U.S. Southern Command, and the Caribbean nations; 3) U.S. Pacific Command has hosted a 5day exercise with 21 partner militaries; and 4) U.S. European Command hosted an exercise with multiple European nations in attendance.

4.1.2.1. Complete

DOS shall ensure strong USG engagement in and follow-up on bilateral and multilateral initiatives to build cooperation and capacity to fight pandemic influenza internationally, including the Asia-Pacific Economic Cooperation (APEC) initiatives (inventory of resources and regional expertise to fight pandemic influenza, a region-wide tabletop exercise, a Symposium on Emerging Infectious Diseases to be held in Beijing in April 2006 and the Regional Emerging Disease Intervention (REDI) Center in Singapore), the United States-China Joint Initiative on Avian Influenza, and the United States-Indonesia-Singapore Joint Avian Influenza Demonstration Project. DOS should also develop a strategy to expand the number of countries fully cooperating with U.S. and/or international technical agencies in the fight against pandemic influenza, within 6 months. Measure of performance: finalized action plans that outline goals to be achieved and timeframes in which they will be achieved.

The USG has engaged in a broad range of bilateral and multilateral initiatives to build capacity to fight pandemic influenza abroad. The USG pursues an active international program through its leadership role in, and shaping the agenda of, ministerial conferences co-sponsored by the International Partnership on Avian and Pandemic Influenza (IPAPI). Conferences in Bamako, New Delhi, and Sharm el-Sheikh convened

around 100 countries; the next conference is tentatively scheduled to be held in Vietnam in early 2010. Regarding pledges, the USG has set the standard by allocating more than \$949 million of the nearly \$3 billion pledged by the international community. The USG, in collaboration with U.N. organizations, also supports preparedness efforts in more than 75 countries including the World Health Organization. The USG also has been active in the regional Asia-Pacific Economic Cooperation Forum (APEC), including the June 2007 Health Ministers Meeting on pandemic preparedness, ongoing support of the APEC Emerging Infections Network (EINet), a series of regional training activities in 2007 and 2008 to strengthen pandemic preparedness of small and medium enterprises, and in 2008 by promoting best practices for live-bird markets to improve developing country bird-market conditions. Bilaterally, the USG has also extended support to 39 at-risk countries to strengthen disease surveillance, public education, and veterinary services.

4.1.2.2. Complete

HHS shall staff the REDI Center in Singapore within 3 months. Measure of performance: USG staff provided to REDI Center.

A former official with the National Institute of Allergy and Infectious Diseases, within HHS's National Institutes of Health, became the Executive Director of the REDI Center in November 2006. Since early 2007, the Regional Emerging Diseases Intervention (REDI) Center has been assisting Indonesia in implementing a pilot project to control animal and human infection in Tangerang District and Municipality and trained 100 referral hospitals in case management and hospital infection control.

4.1.2.3. Complete

USDA, working with USAID and the Partnership, shall support the FAO and OIE to implement an instrument to assess priority countries' veterinary infrastructure for prevention, surveillance, and control of animal influenza and increase veterinary rapid response capacity by supporting national capacities for animal surveillance, diagnostics, training, and containment in at-risk countries, within 9 months. Measure of performance: per the OIE's Performance, Vision, and Strategy Instrument, assessment tools exercised and results communicated to the Partnership, and priority countries are developing, or have in place, an infrastructure capable of supporting their national prevention and response plans for avian or other animal influenza.

With assistance from USDA and USAID, all priority countries are developing, and some have in place, infrastructure that can support their national prevention and response plans for animal outbreaks. OIE has evaluated infrastructure in 79 countries to identify any necessary improvements and to request appropriate resources from international donors. USDA and USAID are providing training, technical assistance, and emergency commodities to governments that need assistance.

4.1.2.4. Complete

USDA, in coordination with DOS, USAID, the OIE, and other members of the Partnership, shall support FAO to enhance the rapid detection and reporting of, response to, and control or eradication of outbreaks of avian influenza, within 12 months. Measure of performance: an international program is established and providing functional support to priority countries with rapid detection and reporting of, response to, and control or eradication of outbreaks of avian influenza, as appropriate to the country's specific situation.

In 2005, the USG launched a Highly Pathogenic Avian Influenza International Coordination Group to manage rapid assessment and emergency response missions to combat avian influenza abroad and to serve as a focal point for interagency and FAO collaboration. USDA and USAID also support an international Crisis

Management Center within FAO and work to ensure its coordination with WHO. In 2008, USDA transitioned responsibility for the international response to AI to more permanent staff, and dissolved the International Coordination Group.

4.1.2.5. Complete

HHS, in coordination with USAID, shall increase rapid response capacity within those countries at highest risk of human exposure to animal influenza by supporting national and local government capacities for human surveillance, diagnostics, and medical care, and by supporting training and equipping of rapid response and case investigation teams for human outbreaks, within 9 months. Measure of performance: trained, deployable rapid response teams exist in countries with the highest risk of human exposure.

Cambodia, Indonesia, Laos, Nigeria Thailand, and Vietnam — countries that have experienced human cases of infection with highly pathogenic avian influenza A (H5N1) — have established trained, deployable, rapid response teams (RRTs): As of March 2009:

Cambodia: RRTs in all 24 provinces, in addition to several teams at the national level

Indonesia: RRTs in 22 provinces and 200 districts

Laos: RRTs in all 18 provinces, plus one National Team

Nigeria: RRTs at the Federal level (1) and at each of the state levels (36)

Thailand: More than 1,000 provincial and district-level RRTs

Vietnam: RRTs in all 64 provinces and in all 668 districts. In addition, the four regional Public Health Institutes and the Department of Preventive Medicine at the Ministry of Health headquarters each maintain several high-level teams for regional and national deployment.

4.1.2.6. Complete

DOD, in coordination with DOS, host nations, and regional alliance military partners, shall assist in developing priority country military infection control and case management capability through training programs, within 18 months. Measure of performance: training programs carried out in all priority countries with increased military infection control and case management capability.

In coordination with DOS, DOD has performed military infection control and case management assessments and training programs in all priority countries with the exception of those where the nations' Ministry of Defense, Ministry of Health, or political limitations would not allow.

4.1.2.7. Complete

Treasury shall encourage and support MDB programs to improve health surveillance systems, strengthen priority countries' response to outbreaks, and boost health systems' readiness, consistent with legislative voting requirements, within 12 months. Measure of performance: projects that fit relevant MDB criteria approved in at least 50 percent of priority countries.

With Treasury's encouragement, the world's multilateral development banks have moved quickly to undertake programs that improve health surveillance systems, strengthen countries' response to outbreaks, and boost health system readiness. The World Bank has pledged up to \$500 million for country programs to

deal with a pandemic and is administering a multi-donor trust fund. It is also playing a critical role in tracking and coordinating donor funding.

At the Beijing International Pledging Conference on Avian and Human Influenza in January 2006, the Asian Development Bank (ADB) pledged \$470 million, as part of the total pledge of \$1.9 billion by donors and international agencies. ADB would focus on a regional response, coordinating its activities with country-level initiatives led by the World Bank. The \$470 million pledge would comprise: 1) \$300 million in loans that can be rapidly mobilized if requested by DMCs; 2) proposed reallocation of savings in ongoing loan projects for \$100 million; and 3) \$70 million in grants. No DMCs thus far have requested emergency loans from ADB.

The \$70 million grant finances three operations: 1) \$30.9 million Greater Mekong Subregion Regional Communicable Disease Control Project covering Cambodia, Lao PDR and Vietnam; 2) \$1.2 million RETA on Epidemiological Surveillance and Response for Communicable Diseases covering Indonesia, Malaysia, and the Philippines; and 3) \$38 million Regional Prevention and Control of Avian Influenza in Asia and the Pacific Project covering all DMCs.

The GMS Project aims to strengthen national surveillance and response systems and enhance regional cooperation in communicable disease control, linking regional, national, and provincial levels through regional policy dialogue, information sharing, and capacity building in Cambodia, Lao PDR, and Vietnam. The project is ongoing and scheduled to close June 2010. A second phase is being planned.

RETA 6305 aimed to support interventions to reduce vulnerability to communicable diseases through enhanced surveillance and response mechanisms including mapping, information systems development and research in partnership with the Ministries of Health of Indonesia, Malaysia and the Philippines. The Project was completed in November 2008.

The Regional Project aims to assist DMCs to prevent and control avian influenza and other communicable diseases through regional capacity building and regional coordination activities. The Project is implemented through partner agencies, most notably the World Health Organization (WHO) and the Food and Agriculture Organization (FAO), as well as regional institutions such as the Association of South East Asian Nations (ASEAN) Secretariat, and regional civil society organizations. The Project is ongoing and scheduled to close August 2010.

Our latest project progress report is publicly available on the ADB website: www.adb.org/projects/project.asp?id=39662

4.1.3.1. Complete

USAID, HHS, and USDA shall conduct educational programs focused on communications and social marketing campaigns in local languages to increase public awareness of risks of transmission of influenza between animals and humans, within 12 months. Measure of performance: clear and consistent messages tested in affected countries, with information communicated via a variety of media have reached broad audiences, including health care providers, veterinarians, and animal health workers, primary and secondary level educators, villagers in high-risk and affected areas, poultry industry workers, and vendors in open air markets.

The USG has provided technical assistance and support for communications and public education efforts in more than 50 countries to raise awareness, make accurate information about avian influenza readily available, and change behaviors that spread the virus. Working with government ministries, international organizations such as UNICEF, WHO, and FAO, as well as private sector groups and NGO networks, the partner agencies have helped provide technical assistance, advocacy, training, logistical support, and outreach materials for use at both the national and community level. Target audiences include health and veterinary workers, national

and local leaders and spokespeople, the media, high-risk groups such as poultry farmers, and the general public. Messages have been developed for maximum impact on the target audience and in keeping with technical guidance; outreach has been conducted at both the community level and through mass media campaigns in order to reach a variety of audiences. Such outreach during a television campaign in Indonesia, for example, is estimated to have reached more than 160 million viewers, and outreach activities conducted during a popular festival in Laos that draws visitors from all provinces and from rural areas reached up to 40,000 visitors.

4.1.3.2. Complete

HHS and USAID shall work with the WHO Secretariat and other multilateral organizations, existing bilateral programs and private sector partners to develop community- and hospital-based health prevention, promotion, and education activities in priority countries within 12 months. Measure of performance: 75 percent of priority countries are reached with mass media and community outreach programs that promote AI awareness and behavior change.

The USG has worked in 95 percent of priority countries in coordination with WHO, UNICEF, and national governments to implement mass media, community-based, and hospital-based outreach programs that raise awareness of the risks of avian influenza and promote preventive behaviors to reduce human exposure in these countries. The USG has also supported activities for health facilities and healthcare workers in 63 percent of priority countries that include training for community-based health workers, developing clinical care guidance, providing logistical support, and improving infection control and surveillance procedures. For example, HHS/CDC is working with WHO, the REDI Center, and JHPIEGO to implement train-the-trainer programs on teaching respiratory infection control and prevention to healthcare workers.

4.1.4.1. Complete

DOS and HHS, in coordination with other agencies, shall ensure that the top political leadership of all affected countries understand the need for clear, effective coordinated public information strategies before and during an outbreak of avian or pandemic influenza within 12 months. Measure of performance: 50 percent of priority countries that developed outbreak communication strategies consistent with the WHO September 2004 Report detailing best practices for communicating with the public during an outbreak.

DOS has continually stressed the importance of transparency and outbreak communications in bilateral discussions and at global and regional forums, consistent with World Health Organization (WHO) guidelines. The USG has also conducted worldwide training of health officials and journalists. In September 2004, WHO published *Outbreak Communications: Best Practices for Communicating with the Public during an Outbreak*, (available online at: www.who.int/csr/resources/publications/WHO_CDS_2005_32/en/index.html) organized around five essential practices: building trust, announcing early, being transparent, respecting public concerns, and planning in advance. At least 14 out of 19 priority countries have developed outbreak communications strategies consistent with the WHO report. They are Azerbaijan, Cambodia, Canada, China, Egypt, India, Laos, Mexico, Nigeria, Romania, Thailand, Turkey, Ukraine, and Vietnam. The USG, under Department of State lead, is also developing international messaging guidelines for both USG medical and non-medical messages.

4.1.4.2. Complete

DOS and HHS, in coordination with other agencies, shall implement programs within 3 months to inform U.S. citizens, including businesses, NGO personnel, DOD personnel, and military family members residing and traveling abroad, where they may obtain accurate, timely information, including

risk level assessments, to enable them to make informed decisions and take appropriate personal measures. Measure of performance: majority of registered U.S. citizens abroad have access to accurate and current information on influenza.

The USG, through the State Department's Bureau of Consular Affairs (CA), has provided pandemic influenza information on www.travel.state.gov for more than 4 years. To date, the online Pandemic Influenza Fact Sheet has received more than 952,000 page views since its inception in September 2005. CA's flyer for overseas Americans, "Options During a Pandemic" (previously, "Remain in Country During a Pandemic") has had more than 40,000 hits. A majority of the 2.5 million Americans registered with the 260 U.S. Embassies or Consulates abroad have received information and pandemic influenza. Posts have disseminated CA's flyers (the "Fact Sheet," "FAQs," and "Options During a Pandemic") to registered Americans and to numerous community and business organizations.

4.1.4.3. Complete

DOS and HHS shall ensure that adequate guidance is provided to Federal, State, tribal, and local authorities regarding the inviolability of diplomatic personnel and facilities and shall work with such authorities to develop methods of obtaining voluntary cooperation from the foreign diplomatic community within the United States consistent with USG treaty obligations within 6 months. Measure of performance: briefing materials and an action plan in place for engaging with relevant Federal, State, tribal and local authorities.

The USG's plan to provide guidance to the foreign diplomatic community designates the DOS Office of Foreign Missions website as the forum for communications with the foreign diplomatic community. Senior State Department officials have briefed foreign missions on avian and pandemic influenza preparedness. In addition, the State Department has prepared a series of messages, consistent with those prepared for domestic audiences that emphasize the international nature of a pandemic and the crucial role of international cooperation in mounting an effective international response. These messages are targeted for foreign governments as well as foreign missions in the United States. In the event of a severe pandemic, the State Department will quickly disseminate guidance to State, local, and tribal authorities through the national organizations representing local jurisdictions and states, and then directly to governors' and tribal leaders' offices. To further support planning at multiple levels, HHS helps disseminate this guidance to State, local, and tribal public health authorities and DHS incorporates this guidance into training exercises for State, local, and tribal authorities.

4.1.4.4. Complete

USAID, USDA, and HHS shall work with the WHO Secretariat, FAO, OIE, and other donor countries within 12 months to implement a communications program to support government authorities and private and multilateral organizations in at-risk countries in improving their national communications systems with the goal of promoting behaviors that will minimize human exposure and prevent further spread of influenza in animal populations. Measure of performance: 50 percent of priority countries have improved national avian influenza communications.

With support from the U.S. Government, national communications efforts have been strengthened in 95 percent of priority countries through activities that build national communications capacity and stress awareness campaigns to promote changes in behavior. The USG is working with host governments and international organizations – including WHO, FAO, OIE, and UNICEF – as well as other donors and the private sector to provide both technical and operational support for such activities. USG agencies have supported the training of nearly 192,000 people to deliver messages about the hazards of avian influenza to poultry farmers and the general public, and are engaging community members to participate in sharing information about avian influenza, its risks, and how to report suspected cases.

4.1.4.5. Complete

USAID, in coordination with DOS, HHS, and USDA, shall develop and disseminate influenza information to priority countries through international broadcasting channels, including international USG mechanisms such as Voice of America and Radio Free Asia (radio, television, shortwave, internet), and share lessons learned and key messages from communications campaigns, within 12 months. Measure of performance: local language briefing materials and training programs developed and distributed via WHO and FAO channels.

USAID and its partner agencies have used a wide variety of channels and media to disseminate key behavior change messages to prevent the spread of avian influenza and have worked to advance communications on avian and pandemic influenza risks in more than 50 countries. The USG has developed, tested, and distributed materials (print and broadcast) in local languages and have also produced materials in Arabic, English, French, Portuguese, Russian, and Spanish. Many of these materials are available online. Partners include WHO, FAO, and UNICEF; international broadcasting networks such as the Voice of America; national media outlets and government ministries; and non-governmental organizations such as the Red Cross and Veterinarians Without Borders (AVSF).

4.1.5.1. Complete

DOS, in coordination with other agencies, shall use the Partnership and bilateral and multilateral diplomatic contacts on a continuing basis to encourage nations to increase international production capacity and stockpiles of safe and effective human vaccines, antiviral medications, and medical material within 12 months. Measure of performance: increase by 50 percent the number of priority countries that have plans to increase production capacity and/or stockpiles.

The United States contributed a total of \$24.4 million to support the World Health Organization's (WHO) global pandemic influenza action plan to increase vaccine supply and international production capacity. In 2007, an initial \$10 million contribution enabled WHO to award up to \$2.5 million per grantee to vaccine manufacturers developing influenza vaccine production facilities in Brazil, India, Indonesia, Mexico, Thailand, and Vietnam. In 2009, with an additional \$14.4 million contributed by the U.S. Government, WHO plans to continue grants of \$1-2 million to India, Indonesia, Thailand, and Vietnam, and will issue new grants to Egypt, Korea, Romania and Serbia. WHO will also issue training and consulting awards of \$250,000 to Brazil and Mexico. In FY 2009, the U.S. Congress appropriated another \$15 million that will be used to continue building international pandemic preparedness capacity.

Most priority countries have also taken steps to produce or acquire pre-pandemic vaccine and establish personal protective equipment (PPE) and antiviral stockpiles, including the Association of Southeast Asian Nations.

The USG continues to discuss with Global Health Security Initiative members and other international partners stockpiling influenza countermeasures, operational aspects of maintaining and deploying stockpiles, and evolving stockpile strategies.

4.1.5.2. Complete

HHS and USAID shall work to coordinate and set up emergency stockpiles of protective equipment and essential commodities other than vaccine and antiviral medications for responding to animal or human outbreaks within 9 months. Measure of performance: essential commodities procured and available for deployment within 24 hours.

USAID has developed an international stockpile of essential non-pharmaceutical commodities – including 1.5

million PPE kits and 15,000 decontamination kits – which are generally available for international deployment within 24 hours of emergency notification. USAID has deployed commodities from this stockpile to support avian influenza surveillance and response efforts in nearly 80 countries. Emergency stockpiles have been pre-positioned in high-priority countries, and related training of 350 local trainers (in 21 countries) in use of this equipment, in addition to support for trainings in proper shipping of laboratory specimens have been provided. In March 2008, a Regional Distribution Center (RDC) in Bangkok was established to house a stockpile of nearly 50,000 PPE kits and 400 decontamination kits for deployment to destinations in South and Southeast Asia within 24 hours of emergency notification. As of April 2009, stockpiles of protective equipment (and antivirals for rapid responders during the initial response) were also available to be deployed within 24 hours from U.S. Global Disease Detection (GDD) Centers in China, Guatemala, Kenya, and Thailand, and from the HHS/CDC Office in South Africa. Emergency stockpiles are also under development at GDD Centers in Egypt and Kazakhstan.

4.1.5.3. Complete

HHS shall provide technical expertise, information, and guidelines for stockpiling and use of pandemic influenza vaccines within 6 months. Measure of performance: all priority countries and partner organizations have received relevant information on influenza vaccines and application strategies.

HHS developed and produced materials on pandemic influenza vaccine strategies and capacity-building that were disseminated to all State Department-designated pandemic influenza focus countries. The package was also sent to WHO Headquarters and distributed to GHSAG (Global Health Security Action Group) countries. WHO is exploring the possibility of establishing an international pandemic influenza vaccine stockpile against animal influenza strains identified as having pandemic potential, and possible funding mechanisms to support it. HHS is participating in and supporting WHO in these activities. Also, the USG continues to share information with WHO and its partners in the Global Health Security Initiative on how pre-pandemic and pandemic vaccine strategies, policies, and prioritization are evolving.

4.1.5.4. Complete

USDA and USAID, in cooperation with FAO and OIE, shall provide technical expertise, information and guidelines for stockpiling and use of animal vaccines, especially to avian influenza affected countries and those countries at highest risk, within 6 months. Measure of performance: all priority countries and relevant international organizations have received information on animal vaccines' efficacy and application strategies to guide country-specific decisions about preparedness options.

U.S. Embassies and missions have ensured that all priority countries have received international guidance on the use of animal vaccines. USDA and USAID have collaborated with academic institutions to produce a training program on the use of animal vaccines and vaccination strategies and provided support for an international scientific conference in March 2007 on avian influenza vaccination standards, trade implications, strategies for implementation, and experiences to date.

4.1.6.1. Complete

DOS, in coordination with HHS and other agencies, shall continue to work through the Partnership and other bilateral and multilateral venues to build international cooperation and encourage countries and regional organizations to develop diagnostic, research and vaccine manufacturing capacity within 24 months. Measure of performance: global diagnostic and research capacity increased significantly compared to 24 months earlier; significant investments made to expand international vaccine manufacturing capacity.

The United States contributed a total of \$24.4 million to support the World Health Organization's (WHO) global pandemic influenza action plan to increase vaccine supply and international production capacity. In 2007, an initial \$10 million contribution enabled WHO to award up to \$2.5 million per grantee to vaccine manufacturers developing influenza vaccine production facilities in Brazil, India, Indonesia, Mexico, Thailand, and Vietnam. In 2009, with an additional \$14.4 million contributed by the U.S. Government, WHO plans to continue grants of \$1-2 million to India, Indonesia, Thailand, and Vietnam, and will issue new grants to Egypt, Korea, Romania, and Serbia. WHO will also issue training and consulting awards of \$250,000 to Brazil and Mexico. In FY 2009, the U.S. Congress appropriated another \$15 million that will be used to continue building international pandemic preparedness capacity.

The USG will use these contract awards to transfer diagnostic and research technology to at-risk, developing countries. The USG has also invited WHO to a recent USG interagency global influenza diagnostics workshop. The USG has consulted with Global Health Security Initiative partners on assisting developing countries to develop influenza diagnostics and has provided \$3.4 million to expand Institut Pasteur's influenza laboratory and diagnostic work in Africa and Asia.

4.1.6.2. Complete

HHS, in coordination with the WHO Secretariat, shall establish at least six new sites for Collaborative Clinical Research on Emerging Infectious Diseases to conduct collaborative clinical research on the diagnostics, therapeutics, and natural history of avian influenza and other human emerging infectious diseases. In addition, within 18 months it will provide in-country support for one or more partner countries for human avian influenza clinical trials. Measure of performance: cooperative programs established in six new sites, to include the initiation of research protocols and design of clinical trials.

The Southeast Asia Infectious Diseases Research Network (SEA ICRN) has been established as a multi-lateral, collaborative partnership of hospitals and institutions in Indonesia, Thailand, United Kingdom, United States, and Vietnam. Partners currently include the U.S. National Institutes of Health, Oxford University, Wellcome Trust, and WHO. The SEA ICRN currently consists of thirteen sites, including Indonesia (2), Thailand (4), Vietnam (5), and HHS/NIH (1). The mission of the SEA ICRN is to advance the scientific knowledge and management of human influenza through integrated, collaborative clinical research while building clinical research capacity in the region. The SEA ICRN exceeds the measurement of performance of establishing six new sites by establishing thirteen sites.

4.1.6.3. Complete

USDA shall generate new information on avian vaccine efficacy and production technologies and disseminate to international organizations, animal vaccine manufacturers, and countries at highest risk within 6 months. Measure of performance: information disseminated to priority entities.

USDA has distributed information on avian influenza vaccines and vaccination to the two primary international animal health organizations (FAO and OIE), to multiple national and international animal health industry and trade associations, and to representatives of international vaccine manufacturers. USDA scientists have presented information at international conferences and symposia, as well as to governments and poultry industries in key priority and at-risk countries. Video training modules have also been developed and are being distributed to countries in Africa, Asia, and Central and South America. USDA will continue to disseminate vaccine efficacy information as new experiments are designed, implemented, and completed. The measure of performance has been met by completed research studies that disseminated new information on avian vaccine efficacy and production technologies to priority entities.

The dissemination of vaccine efficacy information is continuing as new experiments are designed,

implemented, and completed. Information has been disseminated to FAO, OIE, Animal Health Institute (AHI), United States Animal Health Association (USAHA) Transmissible Diseases of Poultry Committee, and the Emerging and Exotic Diseases Committee; Agriculture, Fisheries and Conservation Department of the Government of Hong Kong; European Director of Quality Vaccines (80 representatives from 21 European countries and Israel), American Association of Pharmaceutical Scientists (an international association with attendees from Asia, Europe, and North America vaccine manufacturers), Government of Vietnam (joint Foreign Agricultural Service and Agricultural Research Service project), poultry industry in Brazil, International Symposium on Avian Pathology (400 poultry veterinarians from Latin American countries), International Egg Commission, International Poultry Forum, and Colleges of Veterinary Medicine at Michigan State University, Oklahoma State University, and Tuskegee University.

Agricultural Research Service (ARS) scientists participated and presented at the “Options for the Control of Influenza VI Conference” from June 17-23, 2007. One of the key objectives of this conference was to promote international and multidisciplinary collaboration, supporting the full spectrum of influenza research, from basic science to the development of new vaccines and antiviral agents, to epidemiology and control programs. ARS scientists and other international experts met in Jakarta to discuss Indonesia's vaccination strategy to control avian influenza in animals. The aim of the International AI Vaccination Seminar held on June 11-12, 2007 was to upgrade basic knowledge about the vaccination program implementation and to review current methods and recent experiences in the use of vaccination as one of the tools to control and prevent losses due to avian influenza. It was also an opportunity to discuss the appropriate decision-making process for the implementation of a vaccination strategy. The seminar was jointly organized by the Directorate General of Livestock Services Ministry of Agriculture, the Forum of the Indonesian Poultry Society, and the USDA.

4.1.7.1. Complete

DOS shall work with HHS and USAID, in collaboration with the WHO Secretariat, to coordinate the USG contribution to an international stockpile of antiviral medications and other medical countermeasures, including international countermeasure distribution plans and mechanisms and agreed prioritization of allocation, within 6 months. Measure of performance: release of proposed doctrine of deployment and concept of operations for an international stockpile.

Up to 5 percent of HHS' antiviral drug stockpile could be made available to support international containment efforts. The USG is also assisting at-risk countries in the development of local, national, and regional pandemic influenza plans, which include antiviral drug distribution plans.

The USG has forward-deployed a small stockpile of antiviral drugs overseas to complement the Association of Southeast Asian Nations (ASEAN) and World Health Organization (WHO) stockpiles and assist with international containment. In the event an influenza outbreak occurs outside the United States, the USG will ask that the affected nation draw first from its own stockpiles, then access regional and international stockpiles, and lastly, request the U.S. forward-deployed stockpile.

4.1.7.2. Complete

The Department of Justice (DOJ) and DOS, in coordination with HHS, shall consider whether the USG, in order to benefit from the protections of the Defense Appropriations Act, should seek to negotiate liability-limiting treaties or arrangements covering U.S. contributions to an international stockpile of vaccine and other medical countermeasures, within 6 months. Measure of performance: review initiated and decision rendered.

DOJ and DOS have previously conducted several reviews on whether the United States should seek to

negotiate liability-limiting treaties or arrangements covering U.S. contributions to an international stockpile of vaccines. We have conducted a third review and continue to find there is no compelling need to seek such arrangements. With input from HHS, DOJ and DOS continue to monitor relevant factors that could warrant a change in that finding.

4.1.7.3. Complete

USDA, in collaboration with FAO and OIE, shall develop and provide best-practice guidelines and technical expertise to countries that express interest in obtaining aid in the implementation of a national animal vaccination program, within 4 months. Measure of performance: interested countries receive guidelines and other assistance within 3 months of their request.

USDA has worked with FAO and OIE to develop and deliver best practice guidelines and technical expertise to interested countries in a number of ways. For example, USDA helped develop and update the FAO–OIE Global Strategy for Progressive Control of Highly Pathogenic Avian Influenza eradication and an OIE technical manuscript on emergency management. Through USDA funding, representatives from all priority countries were able to attend a vaccination seminar hosted by FAO/OIE. USDA also collaborated with Iowa State University to produce a multimedia training module on animal vaccines and vaccination strategies; this training module is currently being disseminated to interested countries. USDA has met all requests for assistance with literature, expert consultations, or training courses to address the various concerns.

4.1.8.1. Complete

HHS shall support the Los Alamos H5 Sequence Database and the Institute for Genomic Research (TIGR), for the purpose of sharing avian H5N1 influenza sequences with the scientific community within 24 months. Measure of performance: completed H5 sequences entered into both the Los Alamos database and GenBank and annotated.

The HHS/NIH National Institute of Allergy and Infectious Diseases (NIAID) is supporting the influenza virus sequencing and annotation project at the J. Craig Venter Institute (JCVI; formerly The Institute for Genomic Research, or TIGR), including avian and human H5 viruses. All the influenza virus sequences are rapidly (within 45 days from generation) deposited into GenBank for public access. The HHS/NIH/NIAID-funded Influenza Database, BioHealthBase, is a public and freely available database resource that provides and integrates a variety of critical data types and sets including genomics, proteomics, functional genomics, metabolomics, immunogenic/antigenic, genotype/phenotype, clinical data and systems biology host-pathogen networks datasets. The HHS/NIH/NIAID has funded the transfer of the Los Alamos National Laboratory (LANL) Influenza Sequence Database to NIAID BioHealthBase.

4.1.8.2. Complete

HHS shall enhance a regional influenza genome reference laboratory in Singapore within 9 months. Measure of performance: capacity to sequence complete influenza virus genome established in Singapore; all reported novel animal influenza samples sequenced and made available on public databases.

The Genomics Institute of Singapore is now fully staffed and equipped to sequence and characterize viral genomes. The institute is working with partners in Indonesia and Vietnam to isolate and sequence the causative agents of viral pneumonias, including avian influenza. Sequences of special scientific interest will be published in a peer-reviewed journal; complete sequences will be submitted to GenBank. Since 2005 the Genomics Institute of Singapore (GIS) has been testing flu like illness specimens from the region and has sequenced the genomes. GIS has been training scientists from Indonesia to sequence AI viruses.

4.1.8.3. Complete

USDA and USAID shall work with international organizations, governments, and scientific entities to disseminate and exchange information to bolster and apply avian influenza prevention and response plans in priority countries, within 12 months. Measure of performance: 50 percent of priority countries have national epizootic prevention and response plans based upon pragmatic, comprehensive, and scientifically valid information.

All priority countries currently have national prevention and response plans for highly pathogenic avian influenza, where critical elements may be applied for other epizootics. USAID and USDA have worked with more than 40 countries to improve national and local planning efforts, and collaborate with partners including WHO, FAO, and PAHO to conduct simulations and trainings for national officials and responders, increase the availability of scientific information about H5N1 influenza through research, and enhance international cooperation and transparency in influenza surveillance and detection. The USG has deployed nearly 600,000 sets of personal protective equipment (PPE) and other critical commodities for use in influenza surveillance and outbreak response worldwide, and a Regional Distribution Center in Bangkok was established to deploy commodities to destinations in South and Southeast Asia within 24 hours of suspected outbreaks. In addition, the USG has launched South Asia and Central, East, Southern, and West Africa regional activities with FAO to increase cross-border collaboration as we strengthen avian influenza preparedness, surveillance, and response efforts.

4.1.8.4. Complete

HHS and DOD, in coordination with DOS, shall enhance open source information sharing efforts with international organizations and agencies to facilitate the characterization of genetic sequences of circulating strains of novel influenza viruses within 12 months. Measure of performance: publication of all reported novel influenza viruses which are sequenced.

HHS/CDC and DOD worked with domestic and international partners to facilitate characterization of genetic sequences of circulating strains of novel influenza viruses.

For U.S. isolates, HHS/CDC, in partnership with the Association of Public Health Laboratories (APHL), publishes sequence data on all novel influenza strains detected in the United States. Also, in August 2006, HHS/CDC and APHL announced the publication and analysis of more than 650 sequences of seasonal influenza viruses including H1N1, H3N2, and B influenza viruses.

For international isolates, HHS/CDC works with WHO to encourage sharing of viruses from countries with avian flu activity. Sequence analysis of these specimens is a crucial component of HHS/CDC's role in providing technical support to the WHO Global Influenza Surveillance Network. Overseas isolates are also obtained by DOD overseas research laboratories via the DOD Influenza Surveillance Program. Any sample determined to represent a novel influenza virus (e.g., H5N1) is sent to HHS/CDC for culture and sequencing, and all sequences are shared with WHO. Publication of sequence data on non-U.S. isolates requires the approval of the country that submitted the specimen for sequencing. In practice, that means that while nearly all suspected H5 viruses are promptly sequenced by the HHS/CDC Influenza Laboratory or another WHO Collaborating Center, there is sometimes a delay of days to weeks before the sequences are published. HHS/CDC has immediate access to the conclusions of the sequence analysis or to the data itself via the WHO Global Influenza Surveillance Network even in cases where the sequence data is not promptly published.

4.2.1.1. Complete

DOS, in coordination with other agencies, shall work on a continuing basis through the Partnership

and through bilateral and multilateral diplomatic contacts to promote transparency, scientific cooperation, and rapid reporting of avian and human influenza cases by other nations within 12 months. Measure of performance: all high-risk countries actively cooperating in improving capacity for transparent, rapid reporting of outbreaks.

The United States has through its strong leadership in the 2007 World Health Assembly (WHA) and International Partnership on Avian and Pandemic Influenza (IPAPI) ministerial conferences (including Sharm el-Sheikh 2008) to urge continued rapid sample sharing and reporting. The USG has targeted technical training and commodity assistance to improve capacity for prompt reporting of API outbreaks in at least 80 countries. The time between affected countries' avian outbreak detection and reporting to OIE has decreased. In addition, the Department of State has taken the lead in a series of sessions at WHO's Intergovernmental Meeting on Pandemic Influenza Preparedness, at which the focus has been ensuring rapid, systematic and timely sharing of influenza samples.

4.2.1.2. Complete

HHS, in coordination with DOS, shall, to the extent feasible, negotiate bilateral agreements with key affected countries on health cooperation including transparency, sample and data sharing, and development of rapid response protocols; and develop and train in-country rapid response teams to quickly assess and report on possible outbreaks of avian and human influenza, within 12 months. Measure of performance: agreements established with Vietnam, Cambodia, and Laos, 100 teams throughout Asia, including China, Thailand, and Indonesia, trained and available to respond to outbreaks.

Bilateral agreements on health cooperation have been established with the Governments of Cambodia and Vietnam, and USG support for collaborative activities with Laos is provided via a cooperative agreement with WHO/WPRO. These agreements cover the establishment of rapid response teams (RRTs) to assess and report on suspected cases and outbreaks of avian and human influenza. Also, more than 5,000 RRTs have been established throughout Asia, including provincial and district level teams in Cambodia, Laos, and Vietnam, as well as in Bangladesh, China, India, Indonesia, and Thailand.

4.2.1.3. Complete

HHS shall place long-term staff at key WHO offices and in select affected, high-risk, and at-risk countries to provide coordination of HHS-sponsored activities and to serve as liaisons with HHS within 9 months. Measure of performance: placement of staff and increased coordination with the WHO Secretariat and Regional Offices.

HHS has placed long-term staff in Bangladesh, Cambodia, China, Egypt, Guatemala, India, Indonesia, Kazakhstan, Kenya, Laos, Peru, Thailand, and Vietnam to coordinate activities and technical assistance. Additionally, HHS has increased coordination capacity globally by placing staff at WHO headquarters, at its regional offices in the Republic of Congo, India, and the Philippines, and at the European CDC in Stockholm. HHS is working on placing staff in Nigeria as well as the WHO regional office in Cairo and its Pan-American Health Office in Washington, D.C.

4.2.1.4. Complete

HHS shall, to the extent feasible, negotiate agreements with established networks of laboratories around the world to enhance its ability to perform laboratory analysis of human and animal virus isolates and to train in-country government staff on influenza-related surveillance and laboratory diagnostics, within 6 months. Measure of performance: completed, negotiated agreement, and financing mechanism with at least one laboratory network outside the United States.

Agreements with Institut Pasteur and the Gorgas Institute have been developed, including \$3.4 million obligated to Institut Pasteur, and \$2 million to the Gorgas Institute for projects that focus on laboratory and field-based epidemiologic surveillance, analysis, and training.

4.2.1.5. Complete

HHS shall support the WHO Secretariat to enhance the early detection, identification and reporting of infectious disease outbreaks through WHO's Influenza Network and Global Outbreak and Alert Response Network (GOARN) within 12 months. Measure of performance: expansion of the network to regions not currently part of the network.

HHS/CDC, in partnership with DOD and USAID, supports WHO activities that enhance and expand global disease surveillance and response. These efforts facilitate early detection, identification, and reporting of cases or outbreaks of pandemic influenza that arise anywhere in the world. Activities included enhancements and expansion of the WHO Global Influenza Surveillance Network and the Global Outbreak Alert and Response Network (GOARN).

HHS/CDC has also expanded the network of Global Disease Detection (GDD) Centers, which work closely with WHO-Geneva and WHO Regional and Country Offices. Currently GDD Centers are located in China, Egypt, Guatemala, Kazakhstan, Kenya, and Thailand. Plans are underway to establish a new GDD center in India. The GDD Centers are helping to fill gaps in global public health capabilities, in accordance with the requirements of the International Health Regulations (IHR)(2005).

HHS/CDC continues to work with ministries of health to support Field Epidemiology Training Programs (FETPs) and Field Epidemiology and Laboratory Training Programs (FELTPs) in Brazil, Central America (Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras), Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan), China, Egypt, Ethiopia, Ghana, India, Jordan, Kenya (with trainees from Kenya and South Sudan), Nigeria, Saudi Arabia, the South Caucasus Region (Armenia, Azerbaijan and Georgia), Thailand (with trainees from Cambodia, southern China, Laos, Malaysia, Myanmar, Thailand, Vietnam), Tanzania, and Zimbabwe. Two new FELTPs in Pakistan and South Africa were established in 2006 in partnership with USAID and the Global AIDS Program (CDC-GAP). HHS/CDC is also supporting the development of new programs in Afghanistan, Angola, Bangladesh, Belize, Central Africa (Cameroon, Central Africa Republic, and the Democratic Republic of Congo), Iraq, Morocco, Mozambique, Panama, Rwanda, and a regional program in West Africa (initially including Burkina Faso, Mali, Niger, and Togo). In 2010, HHS/CDC plans to complete a distance-based comprehensive influenza response training curriculum that will be used for initial refresher training of FETP students, Epidemic Intelligence Service (EIS) Officers, and internationally deployed staff persons.

4.2.1.6. Complete

USAID, in coordination with USDA, shall initiate a pilot program to evaluate strategies for farmer compensation and shall engage and leverage the private sector and other donors to increase the availability of key commodities, compensation, financing and technical support for the control of avian influenza within 6 months. Measure of performance: a model compensation program measured in value of goods and services available for compensation is developed.

In partnership with the World Bank Group, FAO, and the Government of Indonesia, the USG developed and launched a replicable compensation model that was integrated with ongoing community-based influenza surveillance and control efforts. The USG is supporting the Government of Bangladesh through direct financial and technical assistance in efforts to improve and, where appropriate, scale up compensation activities for avian influenza control. The USG has worked with the World Bank Group, FAO, and other

international organizations to research and recommend compensation strategies, including non-monetary incentives, to encourage farmers' full participation in influenza surveillance programs and control measures in priority and high-risk countries. The USG with FAO has produced a compensation module available online and has conducted workshops in the Americas and Southeast Asia. Resulting discussions about approaches to compensation and indemnity have been particularly valuable for consideration and preparedness in high-risk countries where avian influenza has not yet surfaced.

4.2.1.7. Complete

USAID, HHS, USDA, and DOS shall support NGOs, FAO, OIE, WHO, the Office of the Senior UN System Coordinator for Avian and Human Influenza, and host governments to expand the scope, accuracy, and transparency of human and animal surveillance systems and to streamline and strengthen official protocols for reporting avian influenza cases, within 6 months. Measure of performance: 75 percent of priority countries have established early warning networks, international case definitions, and standards for laboratory diagnostics of human and animal samples.

All priority countries have established early-warning networks for H5N1 in animals and conform to disease definitions and diagnostic standards for influenza established by the World Organization for Animal Health. More than 75 percent of priority countries have human and animal influenza early-warning capabilities, and all abide by international case definitions; more than 75 percent have laboratories that meet standards for human diagnosis. U.S. Government agencies have provided technical assistance to strengthen surveillance systems in all priority countries, support to international organizations for human and animal health to promote early warning surveillance for influenza outbreaks in high-risk and affected countries, and training to strengthen human and animal diagnostic laboratories in the detection of influenza virus in priority countries. The USG has provided equipment including real-time PCR diagnostic machines and reagents, and training on the use of these tools to increase diagnostic capacity at critical reference laboratories. This effort was fundamental to help FAO launch an influenza surveillance network in Central and West Africa. The USG also supports efforts to track H5N1 in wild migratory birds, including training on effective wild-bird handling, sampling, and data collection to help control the spread of H5N1 through the Wild Bird Global Avian Influenza Network for Surveillance (GAINS). Resulting census data from more than 105 million bird observations are being made available via an open database and mapping system. Through GAINS efforts, more than 40,000 samples have been collected for H5N1 analysis and approximately 2,700 people have been trained in field techniques.

4.2.2.1. Complete

HHS and USDA, in collaboration with one or more established networks of laboratories around the world, including the WHO Influenza Network, shall train staff from priority countries' Ministries of Health and Agriculture, to conduct surveillance and perform epidemiologic analyses on influenza-susceptible species and manage and report results of findings, within 12 months. Measure of performance: 75 percent of priority countries have access to multi-year epidemiology and surveillance training programs.

USDA training activities are complemented by HHS/CDC public health training efforts, which include regional Train-the-Trainer Rapid Response Team (RRT) workshops on applied epidemiology and post-event disease surveillance for avian and pandemic influenza. Master trainers who complete the regional RRT workshops train provincial-level responders, who in turn train district-level responders. Additional RRT workshops and Incident Command System (ICS) trainings were conducted worldwide in 2008 and plans are underway to deliver additional workshops for priority and high-risk countries.

4.2.2.2. Complete

HHS and USDA shall increase support of scientists tracking potential emergent influenza strains through disease and virologic surveillance in susceptible animal species in priority countries within 9 months. Measure of performance: surveillance for emergent influenza strains expanded in priority countries.

HHS and USDA have expanded surveillance for emerging influenza strains in priority countries. Efforts include: collecting and analyzing influenza viruses from animals in high-risk Asian countries; conducting North American surveillance with Canada and Mexico; supporting the USAID- and HHS/CDC-sponsored Wild Bird Global Avian Influenza Network project to enhance surveillance in eight priority countries; expediting rapid characterization and publication of viral sequences via the HHS/NIH Influenza Genome Sequencing Project; and awarding research funds to study evolving influenza viruses. USDA is collaborating with other countries on avian influenza-related research, providing training, and helping to collect and transport field specimens to diagnostic laboratories.

4.2.2.3. Complete

HHS, in coordination with DOD, shall provide support to Naval Medical Research Unit (NAMRU) 2 in Jakarta, Indonesia and Phnom Penh, Cambodia, the Armed Forces Research Institute of Medical Sciences in Bangkok, Thailand, and NAMRU-3 in Cairo, Egypt to expand and expedite geographic surveillance of human populations at-risk for H5N1 infections in those and neighboring countries through training, enhanced surveillance, and enhancement of the Early Warning Outbreak Recognition System, within 12 months. Measure of performance: reagents and technical assistance provided to countries in the network to improve and expand surveillance of H5N1 and number of specimens tested by real-time processing.

HHS has provided technical and financial support to NAMRU-2 and NAMRU-3 to support geographic surveillance of human populations at risk for H5N1 infections in Afghanistan, Armenia, Azerbaijan, Bulgaria, Cambodia, China, Djibouti, Egypt, Georgia, Ghana, Indonesia, Iraq, Jordan, Kazakhstan, Kyrgyzstan, Laos, Libya, Morocco, Nigeria, Oman, Pakistan, Romania, Saudi Arabia, Sudan, Syria, Thailand, Ukraine, Uzbekistan, and Vietnam. DOD partners also include the U.S Air Force School of Aerospace Medicine (USAFSAM) and the Armed Forces Research Institute of Medical Sciences (AFRIMS).

The number of influenza specimens submitted by NAMRU-2 and NAMRU-3 to HHS/CDC for testing increased between 2005 and 2006, and then declined in 2007 as more countries were able to do their own diagnostic testing. In 2005, NAMRU-2 submitted 615 specimens (including 51 H5 or suspected H5 specimens), and NAMRU-3 submitted 90 specimens (none of which were H5 or suspected H5 specimens). In 2006, NAMRU-2 submitted 754 specimens (including 500 H5 or suspected H5 specimens), and NAMRU-3 submitted 423 (including 50 H5 or suspected H5 specimens). During calendar year 2007, NAMRU-3 submitted 97 samples, and NAMRU-2 62 samples. In 2008, NAMRU-3 submitted 188 influenza isolates to the HHS/CDC for further characterization. Due to changing operational priorities, NAMRU-2 sent only 3 isolates to the HHS/CDC in 2008.

4.2.2.4. Complete

HHS shall enhance surveillance and response to high priority infectious disease, including influenza with pandemic potential, by training physicians and public health workers in disease surveillance, applied epidemiology and outbreak response at its GDD Response Centers in Thailand and China and at the U.S.-China Collaborative Program on Emerging and Re-Emerging Infectious Diseases, within 12 months. Measure of performance: 50 physicians and public health workers living in priority countries receive training in disease surveillance applied epidemiology and outbreak response.

More than 250 public health workers from priority countries have been trained in disease surveillance, field

epidemiology, and outbreak response. Physicians in Laos, Cambodia, and Vietnam are also receiving hospital-based training in infection control and/or case management during a severe influenza pandemic.

4.2.2.5. Complete

DOD shall develop active and passive systems for inpatient and outpatient disease surveillance at its institutions worldwide, with an emphasis on index case and cluster identification, and develop mechanisms for utilizing DOD epidemiological investigation experts in international support efforts, to include validation of systems/tools and improved outpatient/inpatient surveillance capabilities, within 18 months. Measure of performance: monitoring system and program to utilize epidemiological investigation experts internationally are in place.

The Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) is a near-real-time system of syndromic surveillance based on outpatient diagnoses from all DOD Military Treatment Facilities (MTFs) around the world. ESSENCE is operational with approximately 800 monitors at installation, regional, Service, and DOD levels. DOD laboratories collect, analyze, and monitor viral cultures and serological specimens from selected domestic and international influenza sentinel sites. Both passive and active reportable medical events monitoring for confirmed cases of influenza occurs throughout the DOD. With respect to inpatient capability, while near-real-time surveillance of hospital admissions is not currently possible, 90 percent of MTF inpatients have an outpatient visit during their hospital stay (76 percent within one day of admission). Consequently, disposition codes associated with outpatient records can be used as a proxy for inpatient events. The Johns Hopkins University Applied Physics Laboratory has confirmed the usefulness of the military disposition data as a proxy for disease severity and as a mechanism for decreasing the number of false positive alerts. This functionality has been identified as a critical requirement for ESSENCE Block 3 (currently in development phase of acquisition) and funding is secure. Limited IM/IT development, test, and evaluation (DT&E) environments and other acquisition challenges have pushed expected deployment of ESSENCE Block 3 to sometime in 2010. The DOD continues to maintain close collaborative relationships with the Centers for Disease Control, the World Health Organization, and an international network of infectious disease experts (via the Armed Forces Health Surveillance Center's Global Emerging Infections Surveillance and Response directorate).

4.2.2.6. Complete

DOD shall monitor the health of military forces worldwide (CONUS and OCONUS bases, deployed operational forces, exercises, units, etc.), and in coordination with DOS, coordinate with allied, coalition, and host nation public health communities to investigate and respond to confirmed infectious disease outbreaks on DOD installations, within 18 months. Measure of performance: medical surveillance "Watchboard" reports show results of routine monitoring, number of validated outbreaks, and results of interventions.

DOD uses a wide variety of sources to monitor the health of military forces worldwide to ensure a comprehensive health picture (for example, ESSENCE, disease & injury category surveillance in deployed settings, reportable medical events in all settings, and febrile respiratory illness population-based surveillance in recruit settings, among others). Our disease reporting mechanisms have been clarified to meet the new International Health Reporting guidelines.

Coordination of DOD overseas laboratory activities with DOS occurs regularly with our Global Emerging Infections Surveillance and Response System (GEIS) overseeing the monitoring of the health of military forces worldwide. GEIS's monitoring capability is executed through their partner agencies within DOD such as the Naval Health Research Center (NHRC), the Air Force Institute for Occupational Health (AFIOH), and the overseas laboratories. Each agency evaluates its data and passes conclusions to GEIS. Those with

permissions to the GEIS site (the information is restricted to partner medical agencies) can obtain the results of the agency and internal GEIS analysis of the health status of the force.

In order to facilitate DOD's ability to respond to disease outbreaks on DOD installations and the exchange of information, DOD has assigned medical liaisons to the World Health Organization Headquarters in Geneva and at the Centers for Disease Control in Atlanta. In 2009, DOD GEIS will be working an initiative with WHO to improve clinical opportunities for DOD medical personnel to provide actual experience and assist in the treatment of tropical infections which will benefit medical surveillance activities, validate outbreaks, and provide intervention. The DOD Watchboard has developed into a publically accessible website to ensure wide dissemination and understanding of DOD policy. Because this is a publically accessible website, DOD has not posted specific medical surveillance information due to the sensitive nature of that type of information. DOD has instead chosen to link the Watchboard to the DOD GEIS page where those with appropriate permission are able to access the GEIS information.

4.2.2.7. Complete

DOD, in coordination with DOS and with the cooperation of the host nation, shall assist with influenza surveillance of host nation populations in accordance with existing treaties and international agreements, within 24 months. Measure of performance: medical surveillance “Watchboard” expanded to include host nations.

For more than a decade, DOD GEIS has been responsible for coordinating the DOD Global Influenza Surveillance network of sentinel collection sites and participating laboratories. In the past 3 years, DOD GEIS expanded this network to encompass more than 70 countries worldwide. At the core of this surveillance effort are the five DOD overseas research labs located in Egypt, Indonesia, Kenya, Peru, and Thailand, with each responsible for extending influenza surveillance in their respective regions in coordination with DOS, HHS/CDC, and WHO. Each of these foreign sites is also coordinated with the local U.S. Embassy to harmonize U.S. Government influenza surveillance efforts. In addition, DOD GEIS supports a DOD/DOS project through the Walter Reed Army Institute of Research Division of Virus Diseases that is establishing influenza surveillance at 26 U.S. Embassies globally.

DOD assists host nations where overseas labs exist and other nations on a regional basis, as per formal agreements accomplished in coordination with DOS. Results of DOD surveillance activity involving foreign nationals are extremely sensitive and cannot be placed on a public website such as the Watchboard. Summary reports are available to approved users on a restricted Global Emerging Infections Surveillance and Response System (GEIS) website after the nation has publicly released the results themselves. Refer to item 4.2.2.6 for further information.

4.2.3.1. Complete

HHS shall develop and implement laboratory diagnostics training programs in basic laboratory techniques related to influenza sample preparation and diagnostics in priority countries within 9 months. Measure of performance: 25 laboratory scientists trained in influenza sample preparation and diagnostics.

HHS/CDC has provided reverse transcriptase-polymerase chain reaction (RT-PCR) H5N1 protocols to 13 priority countries for detection of human cases of avian influenza A (H5N1): *Azerbaijan*, Cambodia, Canada, China, Egypt, India, Indonesia, Laos, Nigeria, Pakistan, Russia, Thailand, and Vietnam. 45 laboratory staff from priority countries have received HHS/CDC-sponsored training in H5 RT-PCR testing in Bangkok, *Kazakhstan*, Uganda, United States, or in-country.

4.2.3.2. Complete

HHS in collaboration with one or more established networks of laboratories, including the WHO Influenza Network, shall train staff from priority countries on influenza-related laboratory diagnostics, within 12 months. Measure of performance: 100 percent of priority countries have training programs established.

All 19 priority countries have access to established diagnostics training programs, including hands-on trainings at WHO National Influenza Centers, regional laboratory workshops coordinated by HHS/CDC, training programs at DOD laboratories, and USAID-supported courses on sample collection, use of rapid diagnostics for human and animal samples, and international sample-shipping procedures. In addition, all priority countries have been provided with resources and technical assistance for development and enhancement of influenza-related laboratory diagnostic capacity. HHS/CDC continues to provide additional H5 RT-PCR training opportunities both in Atlanta and in-country, as needed to ensure that trained staff is available and able to perform influenza-related laboratory diagnosis in priority countries.

4.2.3.3. Complete

HHS, in cooperation with the WHO Secretariat and other donor countries, shall expand an existing specimen transport fund that enables developing countries to transport influenza samples to WHO regional reference laboratories and collaborating centers, within 6 months. Measure of performance: 100 percent of priority countries funded for sending influenza samples to WHO regional reference laboratories.

More than \$1 million in HHS funding was invested to improve the ability to rapidly transport influenza samples to WHO for analysis. A portion of these funds were set aside to finance the shipping of samples as they become available. The balance of these funds was used to conduct training workshops on the proper transport of dangerous materials and protocols for specimen transport.

4.2.3.4. Complete

HHS shall invest in the development and evaluation of more accurate rapid diagnostics for influenza to enhance the ability of the global healthcare community to rapidly diagnose influenza, within 18 months. Measure of performance: new grants and contracts issued to researchers to develop and evaluate new diagnostics.

HHS has issued new grants and contracts for development and evaluation of new diagnostics that will enhance the ability of the global healthcare community to rapidly diagnose influenza. These include:

Contracts to develop point-of-care tests for use in doctors' offices

Awards to advance development of influenza diagnostic devices for use in hospital laboratories

Contracts to maintain an initial repository of influenza viruses for use by these point-of-care developers of diagnostic tests

Cooperative agreements to support clinical evaluation of a Human Influenza Real-Time RT-PCR Detection and Characterization Panel that can detect specific influenza strains, enabling Laboratory Research Network (LRN) and public health laboratories to identify novel (and potentially pandemic) strains of influenza

HHS/NIH continues to support research to develop new and innovative diagnostic technologies, including:

Microchip technology to detect influenza strains

An antiviral resistance (AVR) chip that can detect adamantane sensitivity

A simple, sample handling kit for virus samples and a handheld, portable field reader

Microarrays that can detect multiple respiratory pathogens and genetic elements

Rapid point-of-care pandemic influenza tests, based on multiplex PCR-based assays

“Mass Tag” PCR-based detection of pathogens, including respiratory viruses

4.2.3.5. Complete

HHS and USAID shall work with the WHO Secretariat and private sector partners, through existing bilateral agreements, to provide support for human health diagnostic laboratories by developing and giving assistance in implementing rapid international laboratory diagnostics protocols and standards in priority countries, within 12 months. Measure of performance: 75 percent of priority countries have improved human diagnostic laboratory capacity.

In coordination with WHO, private sector and non-governmental partners, HHS and USAID have helped all priority countries improve diagnostic protocols, upgrade laboratories, and reduce the amount of time required to diagnose H5N1. United States support in Cambodia and Ukraine, for example, helped strengthen national laboratories to meet standards to serve as official WHO National Influenza Centers. The USG has also provided direct technical assistance or diagnostic equipment and supplies for laboratories in 13 of 19 priority countries and emergency sample collection and shipping kits to eight priority countries, in addition to supporting training in human surveillance for more than 21,000 people. Through support to WHO in Russia, for example, infectious diseases clinicians receive training as a component of national preparedness for avian and pandemic influenza, and related essential commodities will be distributed to laboratories and clinics for use in diagnostic activities. The USG is also providing support to expand the WHO Global Influenza Surveillance Network; for example, U.S. assistance facilitated the establishment of a first-ever national influenza laboratory in Laos that is now an active participant in the Network.

4.2.3.6. Complete

USDA and USAID shall work with FAO and OIE to provide technical support for animal health diagnostic laboratories by developing and implementing international laboratory diagnostic protocols, standards, and infrastructure in priority countries that can rapidly screen avian influenza specimens from susceptible animal populations, within 12 months. Measure of performance: 75 percent of priority countries have improved animal diagnostic laboratory capacity.

USDA and USAID have helped 95 percent of priority countries improve their capacity for surveillance and laboratory diagnosis through training, technical assistance, and the provision of commodities (such as protective gear) and rapid diagnostic materials. USDA and USAID also work with FAO and other international partners to implement surveillance protocols, increase access to international reference laboratories, and strengthen national laboratories.

4.2.3.7. Complete

USDA and USAID shall provide technical expertise to help priority countries develop their cadre of veterinary diagnostic technicians to screen avian influenza specimens from wild and domestic bird populations, and other susceptible animals, rapidly and in a manner that adheres to international

standards for proficiency and safety, within 12 months. Measure of performance: all priority countries have access to laboratories that are able to screen avian influenza specimens and confirm diagnoses in a manner that supports effective control of cases of avian influenza.

All priority countries now have access to laboratory diagnostic capacity for avian influenza either through national laboratories or through regional reference laboratories. USAID and USDA have provided assistance to all priority countries to improve animal surveillance and early warning and to ensure access to laboratory diagnosis. In addition, the United States has entered into bilateral agreements with Cambodia, China, and Mexico to assist in training and in carrying out wild bird surveillance.

4.2.3.8. Complete

DOD, in coordination with HHS, shall develop and refine its overseas virologic and bacteriologic surveillance infrastructure through Global Emerging Infections Surveillance and Response System (GEIS) and the DOD network of overseas labs, including fully developing and implementing seasonal influenza laboratory surveillance and an animal/vector surveillance plan linked with WHO pandemic phases, within 18 months. Measure of performance: animal/vector surveillance plan and DOD overseas virologic surveillance network developed and functional.

The DOD Global Emerging Infection Surveillance and Response System (GEIS) actively refines its global network on an ongoing basis. This is done directly with the overseas labs, Combatant Commands, HHS, and USDA. DOD established a joint working group with HHS/CDC to ensure efficient use of resources in overseas settings. This working group addresses best practices, selects projects or regions for collaborative research, and determines the best-suited organization to address various tasks. DOD relies on USDA and civilian public health offices to handle animal/vector surveillance in the domestic setting. GEIS and HHS/CDC coordinate on animal/vector surveillance as part of the overseas laboratory activities.

4.2.3.9. Complete

DOD, in coordination with HHS, shall prioritize international DOD laboratory research efforts to develop, refine, and validate diagnostic methods to rapidly identify pathogens, within 18 months. Measure of performance: completion of prioritized research plan, resources identified, and tasks assigned across DOD medical research facilities.

DOD currently has ongoing research initiatives, primarily within GEIS-funded laboratories, that are addressing surveillance of pandemic influenza outbreaks. These labs continue to develop and validate rapid diagnostic assays that are used in these laboratories for research and population-based surveillance purposes. DOD Health Affairs has compiled a complete inventory of DOD research and development efforts. On April 21-22, 2008, DOD Health Affairs co-hosted a meeting with the HHS Assistant Secretary for Preparedness and Response to examine research and development gaps, regulatory issues, etc, with respect to further development of rapid diagnostics for pandemic influenza throughout the entire U.S. Government. DOD Health Affairs is continuously coordinating with HHS/CDC and the Laboratory Response Network, specifically by placing a DOD Health Affairs liaison to the HHS/CDC, to ascertain each organization's ongoing efforts with respect to rapid diagnosis of pandemic influenza.

4.2.3.10. Complete

DOD shall work with priority nations' military forces to assess existing laboratory capacity, rapid response teams, and portable field assay testing equipment, and fund essential commodities and training necessary to achieve an effective national military diagnostic capability, within 18 months. Measure of performance: assessments completed, proposals accepted, and funding made available to

priority countries.

The Department of Defense performed assessments in all priority countries with the exception of those where the nations' Ministry of Defense, Ministry of Health, or political limitations would not allow. DOD has worked with and conducted training with other nations to enhance their lab capability. Combatant commands have worked with partners to develop and improve infection control programs and develop training and exercise programs. In addition, the military laboratories assist regional partner nations with testing and diagnosis.

4.2.4.1. Complete

HHS and USAID shall, in coordination with regional and international multi-lateral organizations, develop village-based alert and response surveillance systems for human cases of influenza in priority countries, within 18 months. Measure of performance: 75 percent of all priority countries have established a village alert and response system for human influenza.

For human influenza, more than 75 percent of priority countries have established early-warning capacity. A strong early-warning system for human outbreaks requires the ability to recognize signs of an outbreak at the community level and the ability to report possible outbreaks up to the central level. HHS/CDC and USAID have supported a variety of activities that address both of these goals through training, communications, technical assistance, and logistical and commodity support for human surveillance. Key activities include training health workers and volunteers, raising awareness of the risks of H5N1 in humans among health workers and the general population, and strengthening protocols for reporting potential cases to relevant authorities. We have also engaged communities through national- and local-level outreach by encouraging participation in disease surveillance and development of early-warning networks focused particularly on poultry, which can be a proxy for possible human infections. These activities directly complement human-health efforts and raise awareness about H5N1 risks and proper biosecurity measures that can be taken to help limit its spread.

4.2.4.2. Complete

DOD shall incorporate international public health reporting requirements for exposed or ill military international travelers into the Geographic Combatant Commanders' pandemic influenza plans within 18 months. Measure of performance: reporting requirements incorporated into Geographic Combatant Commanders' pandemic influenza plans.

DOD is currently revising DOD Directive 6200.03 (Public Health Emergency Management) which will include guidance on emergency pandemic influenza alerting and notification of exposed and ill military personnel (see also task 4.2.2.6.). Geographic Combatant Command Plans have been updated based upon USNORTHCOM Global Synchronization Plan 3551 baseline requirements. In each Geographic Combatant Command (GCC) plan is an Annex R which describes reporting requirements based on phase.

4.2.5.1. Complete

HHS and USAID shall develop, in coordination with the WHO Secretariat and other donor countries, rapid response protocols for use in responding quickly to credible reports of human-to-human transmission that may indicate the beginnings of an influenza pandemic, within 12 months. Measure of performance: adoption of protocols by WHO and other stakeholders.

With HHS and USAID input and support, WHO has released a revised and updated [version of rapid response and containment protocols for review by stakeholders](#). The agencies participated in developing protocols and

guidelines for the use and coordination of international antiviral stockpiles to be used for containment. USAID is supporting the work of WHO and FAO to develop coordinated protocols for responding to avian influenza outbreaks and assisted in developing a UN Pandemic Preparedness and Humanitarian Response Plan. WHO is currently revising its pandemic preparedness guidelines, and the USG is working in close coordination with both a variety of UN agencies and the IFRC to assist countries to plan for a possible pandemic.

4.2.5.2. In Progress

HHS, in coordination with DOS and other agencies participating in the Security and Prosperity Partnership, shall pursue cooperative agreements on pandemic influenza with Canada and Mexico to create and implement a North American early warning surveillance and response system in order to prevent the spread of infectious disease across the borders, within 9 months. Measure of performance: implementation of early warning surveillance and response system.

Border states, provinces, and Federal representatives from Canada, Mexico, and the United States are in the process of receiving read-only access to health surveillance reporting systems in each country (CIOSC in Canada, NotificaMex in Mexico, and Epi-X in the United States). Designated Canadian and Mexican public health professionals currently have access to Epi-X. The USG has had much success establishing a two-way exchange of epidemiological data with Canada. Public health professionals from the United States currently have access to CIOSC. Work continues on a bilateral basis with Mexico, and USG officials will have access to NotificaMex, once it goes online.

The USG has invested more than \$35 million since FY 2003 in the Early Warning Infectious Disease Surveillance (EWIDS) U.S. Program and its counterpart in Mexico (EWIDS-Mexico). Both programs have supported Mexican and U.S. border states' efforts to improve cross-border surveillance and epidemiological investigation response capabilities, build health alert reporting and laboratory capacity, and hire and train relevant public health professionals. Early warning infectious disease surveillance infrastructure and communications among public health professionals along and across the borders have improved as a result.

4.2.5.3. Complete

USDA and USAID shall provide technical expertise to priority countries in order to expand the scope and accuracy of systematic surveillance of avian influenza cases, within 12 months. Measure of performance: 75 percent of priority countries have expanded animal surveillance capabilities.

All priority countries have expanded their animal surveillance capabilities. Through bilateral programs and in collaboration with FAO and OIE, we have assisted priority countries through delivery of grants, technical courses and workshops, and critical equipment to strengthen and increase influenza surveillance in poultry and wild birds. Ongoing strategic focus areas include influenza diagnostic protocols, epidemiology, and global information systems for avian influenza data collection, management, and analyses, and influenza early-warning networks. In addition, the USG has conducted training in surveillance in live bird markets and entered into bilateral agreements with Cambodia, Canada, China, Greenland, Mexico, and Russia for cooperation on influenza surveillance of wild birds. Altogether, more than 61,000 people have been trained in avian influenza surveillance. The USG is continuing to support efforts to enhance collaboration between Agriculture and Health on H5N1 influenza surveillance in animals and people.

4.2.6.1. Complete

DHS, USDA, DOI, and USAID, in collaboration with priority countries, NGOs, WHO, FAO, OIE, and the private sector shall support priority country animal health activities, including development of

regulations and enforcement capacities that conform to OIE standards for transboundary movement of animals, development of effective biosecurity measures for commercial and domestic animal operations and markets, and identification and confirmation of infected animals, within 12 months. Measure of performance: 50 percent of priority countries have implemented animal health activities as defined above.

All priority countries have implemented activities to improve official veterinary services and biosecurity measures for animal health. With support from USDA, the OIE is assisting interested countries to implement the Performance of Veterinary Services (PVS) tool to help them identify resources and prioritize steps for their official veterinary services to consistently uphold international animal health standards. Thus far, the OIE has completed 79 PVS missions in all regions of the world. USDA, DOI, and USAID have supported activities related to avian influenza prevention, surveillance and diagnosis, and containment measures in 95 percent of priority countries through training, technical assistance, and financial and logistical support. They have collaborated with international organizations, the private sector, and host countries to enhance biosecurity in the poultry sector, particularly the live bird market system. They also support FAO-led initiatives for cross-border collaboration to fight the spread of avian influenza in South Asia and Central, East, Southern, and West Africa and have provided essential commodities and training in their use to maintain biosecurity in influenza surveillance. These agencies have conducted international technical assistance and training on highly pathogenic avian influenza (HPAI) surveillance in wildlife with several priority countries and are also supporting the Global Avian Influenza Network for Surveillance to monitor avian influenza in wild birds, track genetic changes in virus isolates, and increase transparency of disease information.

4.2.7.1. Complete

DOS, in coordination with DOT, DHS, HHS, and U.S. Trade Representative (USTR), shall collaborate with WHO, the International Civil Aviation Organization (ICAO), and the International Maritime Organization (IMO) to assess and revise, as necessary and feasible, existing international agreements and regulations governing the movement and shipping of potentially infectious products, in order to ensure that international agreements are both adequate and legally sufficient to prevent the spread of infectious disease, within 12 months. Measure of performance: international regulations reviewed and revised.

The USG has reviewed existing international regulations and agreements governing the movement and shipping of potentially infectious products and have concluded that there is no need to revise them at this time. The USG believes that the current regimen is both adequate and legally sufficient to prevent the spread of infectious disease.

4.2.7.2. Complete

USDA shall provide technical assistance to priority countries to increase safety of animal products by identifying potentially contaminated animal products, developing screening protocols, regulations, and enforcement capacities that conform to OIE avian influenza standards for transboundary movement of animal products, within 36 months. Measure of performance: all priority countries have protocols and regulations in place or in process.

The USG has helped 95 percent of priority countries improve their capacity for surveillance and laboratory diagnosis through training, technical assistance, and the provision of commodities (such as protective gear) and rapid diagnostic materials. USDA is also working with FAO and other international partners to implement surveillance protocols, increase access to international reference laboratories, and strengthen national laboratories.

4.2.8.1. Complete

HHS and USAID shall develop community- and hospital-based infection control and prevention, health promotion and education activities in local languages in priority countries within 9 months. Measure of performance: local language health promotion campaigns and improved hospital-based infection control activities established in all South East Asian priority countries.

In collaboration with UN technical agencies, national governments, and other international partners, HHS and USAID have supported health promotion campaigns, hospital and health facility-based infection control activities, and public health communications planning and training in all South East Asian priority countries. In Cambodia, Indonesia, Laos, and Vietnam, we have helped train more than 70,500 people – including journalists - in delivering prevention messages and nearly 192,000 people worldwide. These efforts help promote behaviors that reduce the risk of human infection from avian influenza and enable early recognition of potential outbreaks to ensure appropriate response measures are taken. HHS and USAID have also helped develop communications materials and messages aimed at the general public and health workers. Working with WHO and ministries of health, HHS and USAID supported the development and dissemination of information on respiratory hygiene and cough etiquette for use in healthcare settings, and provided support to countries to build local capacity for crisis and outbreak communications.

4.3.1.1. Complete

DOS, in coordination with HHS, USDA, USAID, and DOD, shall coordinate the development and implementation of U.S. capability to respond rapidly to assess and contain outbreaks of avian influenza with pandemic potential abroad, including coordination of the development, training and exercise of U.S. rapid response teams; and coordination of U.S. support for development, training and exercise of, and U.S. participation in, international support teams. Measure of performance: agreed operating procedures and operational support for U.S. rapid response, and for U.S. participation in international rapid response efforts, are developed and function effectively.

As of April 2009, the State Department's Avian Influenza Action Group has been leading efforts to implement both USG unilateral rapid assessment and response teams and participation in international teams in response to both animal and human outbreaks. Additionally, HHS/CDC, USDA, and USAID have deployed response teams to assist countries in responding to animal disease outbreaks and assess suspected cases of human H5N1 infection in Africa, Asia, Eurasia, and Europe.

In cooperation with the Food and Agriculture Organization (FAO) and the World Organization for Animal Health (OIE), the USG has also provided assistance in one form or another to countries to respond to avian influenza to all 62 H5N1-affected countries. USDA and USAID lend expertise and funding for the Crisis Management Center-Animal Health (CMC-AH), an FAO-led collaboration with OIE and WHO, to coordinate response to animal outbreaks worldwide. Since its inception, the CMC-AH has responded to 20 HPAI outbreak missions in 12 countries.

4.3.1.2. Complete

DOS, in coordination with HHS, shall work with WHO and the international community to secure agreement (e.g., through a resolution at the World Health Assembly in May 2006) on an international containment strategy to be activated in the event of a human outbreak, including an accepted definition of a “triggering event” and an agreed doctrine for coordinated international action, responsibilities of nations, and steps they will take, within 4 months. Measure of performance: international agreement on a response and containment strategy.

In May 2005, the World Health Assembly (WHA) adopted the International Health Regulations (IHR) to

provide guidelines for international responses to public health emergencies of international concern. In May 2007, WHO issued its “Protocol on Rapid Operations to Contain the Initial Emergence of Pandemic Influenza,” developed with significant U.S. funding and technical input, and which includes revised “triggering guidelines” for rapid response. This protocol was updated and revised in April 2009. A WHO Pandemic Influenza Task Force includes USG experts and advises the WHO Director-General on the triggering event, containment, and response actions. The USG helped other countries to improve response and containment capacity in multiple at-risk countries, and reinforced broad acceptance of the International Health Regulations and related WHO protocols. The USG has also developed a curriculum on rapid pandemic response for public health personnel in other countries.

4.3.1.3. Complete

HHS, in coordination with DOS, and the WHO Secretariat, and USDA, USAID, DOD, as appropriate, shall rapidly deploy disease surveillance and control teams to investigate possible human outbreaks through WHO’s GOARN network, as required. Measure of performance: teams deployed to suspected outbreaks within 48 hours of investigation request.

HHS/CDC deploys teams of experts to help investigate suspected human cases of infection with avian influenza A (H5N1), generally within 48-72 hours of a host country or WHO request. Between January 2006 and January 2009, HHS/CDC staff assisted WHO and ministries of health in H5N1 investigations in Bangladesh, Cambodia, China, Djibouti, Egypt, Ghana, Indonesia, Laos, Nigeria, Pakistan, Romania, South Sudan, Thailand, Turkey, and Vietnam. As part of these efforts, HHS/CDC scientists have helped to investigate clusters of H5N1 cases to determine whether efficient human-to-human transmission is occurring. Clusters have been investigated in Thailand (2004), Indonesia (2005 and 2006), Pakistan (2007), and China (2007).

Outbreak resources and personnel are also provided as needed, by DOD, USDA, and USAID. For example, the NAMRU-2 laboratory in Jakarta, Indonesia, provided laboratory support for the investigation of 14 clusters of H5N1 human infections in Indonesia from 2005 - 2007, and the NAMRU-3 laboratory in Cairo, Egypt, has provided laboratory support for avian influenza outbreaks in 13 countries and has confirmed human or animal H5N1 infections in Afghanistan, Azerbaijan, Djibouti, Egypt, Ghana, Iraq, Kazakhstan, and Pakistan. In FY 2008 alone, they processed 134 human specimens from Egypt and Pakistan for influenza A H5N1 reference testing, of which 19 were positive.

4.3.1.4. Complete

DOS, in coordination with HHS, and the WHO Secretariat, and USDA, USAID, DOD, as appropriate, shall coordinate United States participation in the implementation of the international response and containment strategy (e.g., assigning experts to the WHO outbreak teams and providing assistance and advice to ministries of health on local public health interventions, ongoing disease surveillance, and use of antiviral medications and vaccines if they are available). Measure of performance: teams deployed to suspected outbreaks within 48 hours of investigation request.

In coordination with other USG agencies and WHO, HHS/CDC continues to deploy teams worldwide, to investigate suspected human cases of H5N1 infection, generally within 48-72 hours of a host country or WHO request. USAID and USDA also provide funding, staff, and experts to FAO and coordinate with WHO and OIE to support the FAO Crisis Management Center in Rome, which responds to animal outbreaks worldwide. USDA and USAID support multilateral and bilateral preparedness planning, including wild and domestic bird surveillance. In at-risk countries in Africa and Asia, the USG deployed nearly 600,000 personal protective equipment kits with related training. The USG also assisted the UN System Influenza Coordinator to develop a UN Pandemic Preparedness and Humanitarian Response Plan and to coordinate international

assistance for both human and animal disease surveillance and response.

4.3.1.5. Complete

USDA and USAID, in coordination with DOS, HHS, and DOD, and in collaboration with relevant international organizations, shall support operational deployment of rapid response teams and provide technical expertise and technology to support avian influenza assessment and response teams in priority countries as required. Measure of performance: all priority countries have rapid access to avian influenza assessment and response teams; deployment assistance provided in each instance and documented in a log of technical assistance rendered.

In 2005, the USDA launched a Highly Pathogenic Avian Influenza International Coordination Group to manage rapid assessment and emergency response missions to combat avian influenza abroad and to serve as a focal point for interagency and FAO collaboration. USDA and USAID also support the establishment of an international Crisis Management Center at FAO and work to ensure coordination with WHO. In cooperation with FAO and OIE, the USG has also provided assistance in one form or another to countries to respond to avian influenza in all 62 H5N1 affected countries. USAID and USDA have lent expertise and funding for the Crisis Management Center-Animal Health (CMC-AH), an FAO-led collaboration with OIE and WHO, to coordinate response to animal outbreaks worldwide. USDA and USAID support multilateral and bilateral preparedness planning, including wild and domestic bird surveillance. The USG has deployed nearly 600,000 personal protective equipment kits to affected and at-risk countries, and has also provided support for training on how to effectively use the equipment. The USG also assisted the UN System Influenza Coordinator to develop a UN Pandemic Preparedness and Humanitarian Response Plan and to coordinate international assistance for both human and animal disease surveillance and response.

Highly pathogenic avian influenza (HPAI) in poultry and birds can be transmitted to humans and therefore presents a real and growing threat to public health. In addition, if left unchecked, avian influenza among animal populations abroad could be introduced to the United States where it could have a devastating impact on U.S. agriculture and susceptible wildlife. As a result, the National Security Council established a “Rapid Response Policy” in which USDA will:

Ensure the decision to mobilize resources in a “rapid response” to requests for HPAI rapid assessment or response missions is made by having the Secretary of Agriculture consult with the Secretary of State and USDA technical advisors on a case-by-case basis.

USDA in coordination with the Secretary of State will first attempt to work through the FAO and OIE (to avoid duplication) who serve as coordinators of the international response to the animal health events such as highly pathogenic avian influenza or bilaterally if necessary.

In either case, the USG will support the rapid response or assessment mission by providing the appropriate combination of personnel resources, based on the situation, from any of the following four categories:

Roster of private technical experts, who have been recruited, trained and categorized by technical specialty and experience

USDA Forest Service National Incident Management Organization Teams (NIMO)

APHIS Animal Emergency Response Organization Incident Management Teams (IMT)

USDA Scientific and Technical personnel

USDA will coordinate with USAID for logistical support as it relates to personal protective equipment and

other supplies available for rapid shipment through the Deliver Project.

4.3.1.6. Complete

DOS shall lead USG engagement with the international community's effort to develop a coordinated plan for avian influenza assistance (funds, materiel, and personnel) to streamline national assistance efforts within 12 months. Measure of performance: commitments from countries on funds, personnel, and materiel they will contribute to an integrated and prioritized international prevention, preparedness, and response effort.

Global pledges of assistance to build capacity to fight avian influenza and promote pandemic preparedness currently total nearly \$3 billion. Of that amount, the cumulative U.S. pledge of \$949 million is the largest single commitment. The USG continues to work closely with the United Nations and World Bank to increase donor flexibility to adjust to changes in the global avian influenza and pandemic preparedness situation and to ensure commitments are disbursed.

4.3.1.7. Complete

DOS, in coordination with and drawing on the expertise of USAID, HHS, and DOD, shall work with the international community to develop, within 12 months, a coordinated, integrated, and prioritized distribution plan for pandemic influenza assistance that details a strategy for (1) strategic lift of WHO stockpiles and response teams, (2) theater distribution to high-risk countries, (3) in-country coordination to key distribution areas, and (4) establishment of internal mechanisms within each country for distribution to urban, rural, and remote populations. Measure of performance: commitments by countries that specify their ability to support distribution, and specify the personnel and material for such support.

DOS is actively supporting the central role of WHO and the UN system in leading international, regional, and country preparations for a possible global influenza pandemic. WHO is revising its pandemic preparedness guidance, including information on in-country coordination and logistics, and will issue revised guidance by the end of 2009. WHO has indicated that all 193 WHO Member States now have some form of national plans and that it is working to expand the number of countries who have funded the plans and established standard operating procedures. The USG participated in the development of protocols and guidelines for the use and coordination of prepositioned international antiviral stockpiles prepositioned by WHO. The United States also has prepositioned stockpiles of antiviral medications and essential non-pharmaceutical commodities.

4.3.1.8. Complete

DOS, in coordination with HHS, USDA, USAID, and DHS, and in collaboration with WHO, FAO, OIE, the World Bank and regional institutions such as APEC, the Association of Southeast Asian Nations and the European Community, shall, to the extent feasible, improve public affairs coordination and establish a set of agreed upon operating principles among these international organizations and the United States that describe the actions and expectations of the public affairs strategies of these entities that would be implemented in the event of a pandemic, within 6 months. Measure of performance: list of key public affairs contacts developed, planning documents shared, and coordinated public affairs strategy developed.

WHO, in consultation with HHS/CDC, has developed communication and public affairs guidelines, which we have shared with public affairs contacts throughout the UN system, the animal health organization OIE, the World Bank, and regional organizations. We periodically provide updates of our public diplomacy efforts to WHO, and UN experts participate in all State Department-sponsored media training on avian and pandemic

influenza. USG planning documents are available on the U.S. portal website www.flu.gov. The USG has shared our own list of international organization and government public affairs contacts with all other international organizations and governments, and are consulting with WHO to expand and update the network. Medical and non-medical international messaging guidance to be used during a pandemic has been drafted through an interagency effort led by DOS.

4.3.1.9. Complete

DOS and DOC, in collaboration with NGOs and private sector groups representing business with activities abroad, shall develop and disseminate checklists of key activities to prepare for and respond to a pandemic, within 6 months. Measure of performance: checklists developed and disseminated.

DOS and the U.S. Department of Commerce (DOC), in collaboration with the HHS/CDC, have compiled a checklist entitled “Pandemic Preparedness Planning for U.S. Businesses with Overseas Operations,” distributed both on the www.flu.gov website and through trade associations for use by non-governmental and private-sector organizations. DOC’s International Trade Administration, in conjunction with the DOS, has also developed guidance for small and medium-sized businesses in APEC economies. The guidance has been placed on the APEC website for use by all APEC member economies, but primarily for those APEC members with no robust pandemic preparedness plans.

4.3.2.2. Complete

DOD, in coordination with DOS, HHS, DOT, and DHS, will limit official DOD military travel between affected areas and the United States. Measure of performance: DOD identifies military facilities in the United States and OCONUS that will serve as the points of entry for all official travelers from affected areas, within 6 months.

In support of the National Strategy for Pandemic Influenza Implementation Plan, U.S. Transportation Command (TRANSCOM) is prepared to restrict or modify movement of DOD military personnel between affected areas. TRANSCOM will execute per the direction of the affected Geographic Combatant Command (GCC) to ensure military personnel are transferred and routed to designated ports of entry. These restrictions and/or modifications will limit the potential spread of influenza by enabling proper medical screening and in some cases isolation and quarantine of personnel traveling to and from affected areas. DOD, in conjunction with the GCCs (CENTCOM, EUCOM, NORTHCOM, PACOM, and SOUTHCOM), and in coordination with their Joint Interagency Coordinating Group (JIACG), which normally consists of all relevant departments and agencies, have identified facilities within their respective areas of responsibility to restrict movement of DOD personnel during the appropriate WHO Phase.

4.3.3.1. Complete

DOS, in coordination with HHS, USAID, USDA, and DOD, shall work with the Partnership to assist in the prompt and effective delivery of countermeasures to affected countries consistent with U.S. law and regulation and the agreed upon doctrine for international action to respond to and contain an outbreak of influenza with pandemic potential. Measure of performance: necessary countermeasures delivered to an affected area within 48 hours of agreement to meet request.

The USG has deployed countermeasures abroad prior to a global pandemic to counter a possible future severe pandemic. *Since 2005, USAID has deployed more than 800,000 Personal Protective Equipment kits in 88 countries for influenza preparedness, response, and mitigation activities. The USAID Avian and Pandemic Influenza Unit continues to support International Organizations such as the UN/FAO and UN/WHO as well as national Ministries of health and agriculture with health commodities to prepare for and respond to*

avian influenza.

The USG has also deployed PPE and antiviral stockpiles in Global Disease Detection Centers in China, Guatemala, Kenya, and Thailand, all available to regional countries within 24 hours of request. PPE was deployed to nearly 90 countries generally within 24 hours of notification of an outbreak. As of April 2009, the Departments of Defense and Health and Human Services were working on a Memorandum of Agreement to preposition Tamiflu abroad to reduce transport time in case of emergency.

4.3.4.1. Complete

DOS in collaboration with the Partnership and WHO shall negotiate international instruments and/or arrangements to facilitate the flow of rapid response teams and other public health, medical, and veterinary personnel across international borders, within 12 months. Measure of performance: negotiated agreements for facilitating deployment of rapid response teams deployed across international borders using instruments and/or arrangements as detailed above, within 48 hours of request.

DOS has consulted on this issue within the USG, as well as with the Food and Agriculture Organization (FAO); the World Health Organization; and the International Partnership on Pandemic Influenza. The discussions with WHO continue to ensure coordinated effort in the event of a pandemic outbreak. Within the USG, DOS, HHS, and USAID are in frequent communication about harmonizing a coordinated approach to rapid assessment and rapid containment operations abroad. The USAID Office of Foreign Disaster Assistance and HHS/CDC both report foreign missions here generally cooperate in granting visas rapidly. With USG support, FAO is assessing its rapid response pre-deployment arrangements, including visa procurement for response teams. To further underscore the need for prompt cooperation by affected countries, the Department of State issued a diplomatic note in 2007 to all foreign missions in Washington, requesting rapid granting of visas for U.S. avian and pandemic influenza emergency response teams.

4.3.4.2. Complete

DHS shall assist in the expeditious movement of public health, medical, and veterinary officials, equipment, supplies, and biological samples for testing through U.S. ports of entry/departure. Measure of performance: delivery of persons, equipment, and samples involved in the detection of and response to outbreaks of avian or pandemic influenza within 48 hours of decision to deploy.

Customs and Border Protection (CBP) is prepared to assist in the swift and efficient movement of respective officials, equipment, supplies, and properly permitted and packaged biological samples through U.S. ports of entry and departure. The Transportation Security Administration has screening management and screening checkpoint standard operating procedures covering protocols for items that may require special screening. Upon HHS/CDC request, the Coast Guard will transport HHS/CDC personnel in the maritime domain when it does not interfere with higher priority missions.

4.3.5.1. Complete

DOS shall organize an interagency group to analyze the potential economic and social impact of a pandemic on the stability and security of the international community, within 3 months. Measure of performance: issues identified and policy recommendations prepared.

DOS has formed an interagency group to examine the potential global economic impact of a pandemic. The group has addressed a preliminary set of issues, formulated policy recommendations, and identified border policies to protect the United States from the arrival of a pandemic from abroad. In addition, the Treasury

Department has led a U.S.-wide exercise of financial institutions to ensure U.S. financial-sector viability in a pandemic crisis.

4.3.5.2. Complete

Treasury shall urge the IMF to enhance its surveillance of priority countries and regions, including further assessment of the macroeconomic and financial vulnerability to an influenza pandemic, within 3 months. Measure of performance: updated, expanded IMF analysis of the potential impact of an influenza pandemic on priority countries and regions, as defined above.

In collaboration with the IMF and the multilateral development banks, Treasury plans to ensure that financial assistance to affected economies is provided on terms consistent with the goals of restoring economic activity and maximizing economic growth (within existing international financial agreements). The IMF stands ready to help address countries' balance of payments needs in response to a pandemic. The World Bank is tracking donor commitments for avian influenza programs and the Asian Development Bank is taking the lead in coordinating donor actions in Asia.

4.3.5.3. Complete

Treasury, in collaboration with the IMF and the multilateral development banks, shall take the lead on dialogue with creditor countries to ensure that financial assistance to affected economies is provided on terms consistent with the goals of restoring economic activity and maximizing economic growth (within existing international financial agreements), within 6 months. Measure of performance: official financing strategies in place that are consistent with the goals above.

International donors have endorsed the multi-donor framework for pandemic influenza developed by the World Bank, which calls for a flexible financing approach to take account of different kinds of contributions (cash, grants, loans, or in-kind) and donor procedures, consistent with the goals of minimizing economic disruptions and maintaining growth. The World Bank is monitoring donor disbursements to help ensure consistency with the framework. The Asian Development Bank is taking the lead in coordinating donor activities in the Asia and Pacific region. The IMF stands ready to meet members' balance of payments needs arising from a pandemic using existing facilities, including stand-by arrangements or emergency assistance.

4.3.6.1. Complete

DOS, in coordination with HHS, USAID, USDA, DOD, and DHS, shall lead an interagency public diplomacy group to develop a coordinated, integrated, and prioritized plan to communicate U.S. foreign policy objectives relating to our international engagement on avian and pandemic influenza to key stakeholders (e.g., the American people, the foreign public, NGOs, international businesses), within 3 months. Measure of performance: number and range of target audiences reached with core public affairs and public diplomacy messages, and impact of these messages on public responses to avian and pandemic influenza.

An interagency public diplomacy group completed this plan in November 2006. Domestic and international audiences may now seek information on the U.S. international avian and pandemic influenza engagement on multiple USG websites. The State Department alone has logged more than 100,000 hits on its avian influenza web pages since 2006 including 155 news stories. DOS arranged eighteen State Department-sponsored workshops on avian and pandemic influenza and taught health news reporting skills to more than 460 journalists from Africa, China, Indonesia, the Middle East, South Asia, and Vietnam via Broadcasting Board of Governors and Internews seminars. The Department of State assisted TV stations in Bangladesh, Chile, Egypt, Indonesia, and Nigeria to produce special documentaries broadcast to more than 80 million viewers

and purchased rights enabling TV stations in nine countries to broadcast the PBS documentary “Killer Flu” to 170 million viewers. U.S. Government agencies have arranged for expert speakers to address media, public health personnel, and other audiences in seven countries. We have broadcast special Voice of America news reports on avian influenza to broad audiences in affected regions, including Africa and South Asia.

4.3.6.2. Complete

DOS, in coordination with HHS, shall provide at least monthly updates to its foreign counterparts, through diplomatic channels and USG websites, regarding changes to national policy or regulations that may result from an outbreak, and shall coordinate posting of such information to USG websites (e.g., www.flu.gov). Measure of performance: foreign governments and key stakeholders receive authoritative and regular information on USG avian influenza policy.

An array of USG agencies - the DOS, HHS/CDC, USDA, DOD, and USAID - are in frequent contact with counterparts in foreign governments and international organizations. Senior officials from each agency travel to international conferences regularly. The State Department’s Special Representative on Avian and Pandemic Influenza conducts a bi-monthly conference call on avian and pandemic flu issues with key officials worldwide. A keystone of this information-sharing is U.S. participation in the International Partnership on Avian and Pandemic Influenza (IPAPI), which co-sponsored an inter-ministerial conference in Egypt in October 2008. A similar conference is planned for Vietnam in March 2010. Other international events at which information is exchanged include the semi-annual meetings of the World Health Organization and the World Health Assembly. The website www.flu.gov constitutes the principal USG internet source for flu-related materials. Each USG agency cited above, however, maintains its own website containing influenza articles, for which links are provided in www.flu.gov.

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Chapter 5: Transportation and Borders

5.1.1.1. Complete

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.

DHS, in coordination with Sector Specific Agencies and State, local, and tribal entities, is directly supporting the 18 Critical Infrastructure and Key Resources (CI/KR) Sector Coordinating Councils (SCCs) and Government Coordinating Councils (GCCs) by assisting each to develop and implement focused preparedness education, exercise, training, and information sharing outreach programs for their CI/KR public and private sector businesses. DHS has conducted a series of “webinars” and additional tabletop exercises will be conducted that will address specific topics that the transportation and border sectors may encounter.

General information on occupational health and safety practices outlined in the DOL/HHS Guidance on Preparing Workplaces for an Influenza Pandemic is applicable to employees responsible for border security. One example is OSHA's Guidance on Workplace Stockpiling of Respirators and Facemasks for Pandemic Influenza.

DHS and DOT have had working groups meet to coordinate many of the issues and clarify what roles would

be played in a pandemic. These conferences took place in the spring of 2007 and addressed priorities for the various stakeholders as well as DOT and TSA responsibilities in the transportation sectors. DOT gathered input from the other members on transportation planning that dealt with regulations and safety while issues that were determined to be security related were addressed by TSA.

5.1.1.2. Complete

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.

DHS has convened an interagency working group to address modeling and economic analysis issues, establish Federal-level priorities, develop an inventory of modeling capabilities for each priority, and recommend what priorities should be modeled. A wide range of modeling and simulation tools were evaluated — some of which have been used to support analysis of the economic impacts of a pandemic. Initial planning assumptions were developed (e.g., morbidity, mortality, absenteeism) which are included in department pandemic influenza plans, and have made recommendations related to which models are best suited to address priorities.

5.1.1.3. Complete

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.

DHS and DOT have developed pandemic contingency plans to ensure their ability to secure borders and sustain the National Airspace system. Agencies within DOT and DHS have conducted nearly a dozen internal exercises of those plans, as well as an interagency exercise.

5.1.1.4. In Progress

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.

Border mitigation measures are most effective in the context of slowing spread of disease from one continent to another. In light of this, planning has focused on the scenario of a severe virus with pandemic potential that emerges overseas. The U.S. Government (USG) has focused heavily on aviation-sector planning as international air travel is the most likely scenario for early introduction of a severe pandemic virus into the United States. The USG has developed a risk-based Concept of Operations and protocol for screening for illness at select international airports, working in close collaboration with key stakeholders, and will continue

to develop and exercise plans. The USG is also developing a coordinated aviation screening plan with Canada and Mexico; this “continental approach” will allow the Federal Government to focus only on international flights originating outside of North America and this trilateral relationship will also mitigate the need for screening for illness at land border ports of entry. Work also continues in the maritime sector; concepts for risk-based screening of have been developed.

5.1.1.5. Complete

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.

The Department of Defense has coordinated with the interagency to ensure military support is readily available in the event of an emergency. DOD is prepared to provide assistance, if support is requested and directed. Guidance and resources are outlined in several documents within the Department of Defense. The Department regularly received personnel requests from other government agencies to support such efforts. Currently, the National Response Framework establishes an all-hazards approach to enhance the ability of the United States to manage such domestic events. Furthermore, it forms the basis of how the Federal Government coordinated with the State, local, and tribal governments, as well as the private sector during incidents.

5.1.1.6. In Progress

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.

DOT is the lead for transportation under the Defense Production Act and would use that authority to increase transportation capacity during a pandemic emergency as required under this task. Individual States have mechanisms to temporarily suspend or relax regulations on the movement of material when an emergency is declared. In addition to these State options, when a local or regional emergency is declared by the President, by designated DOT officials or by appropriate State or local officials, existing Federal regulations are automatically activated to provide temporary relief from specific requirements for critical shipments. Under the Federal rules the automatic waivers apply to any motor carrier or driver operating a commercial motor vehicle (CMV) and provide for direct emergency assistance during the emergency regardless of the shipment involved. An application by the carrier or driver is not needed to activate these measures. This regulatory relief covers a range of options including hours of service requirements, driver qualification requirements, CMV operation, inspection, repair, and maintenance requirements, and employee safety and health standards.

The need for security is included in the National Response Framework and will incorporate the ESF-13 planning as a support role for this mission and will be carried out by the DOJ consistent with the guidance prescribed in HSPD-5. HHS/CDC/NIOSH released Interim Guidance for Cleaning Emergency Medical Service (EMS) Transport Vehicles during an Influenza Pandemic. This guidance may be modified or additional procedures may be recommended by HHS/CDC as part of the evaluation of an ill traveler, when an

influenza pandemic becomes widespread in the United States, or as new information about a pandemic strain becomes available. DHS/FEMA will maintain essential functions and services, coordinate Federal response and support interagency activities, and communicate with internal and external stakeholders.

As per the National Response Framework and the Memorandum of Understanding signed by the Secretaries of DOT and DHS, DOT is the primary and coordinating agency lead for Emergency Support Function (ESF)-1.

5.1.2.1. Complete

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.

All eligible entities have received program guidance documents announcing the availability of funding from Federal agencies. Members of the DHS-HHS Grant Programs Steering Committee reviewed their respective grants and other Federal funding programs. HHS, DHS, USDA, and DOT developed a program review chart, detailing transportation and border-related pandemic planning funding activities and disseminated the chart to all identified programs and entities. This will assist in greater leveraging of funds and less duplication, allowing awardees from one funding program to better coordinate with awardees of another funding program in the same or neighboring jurisdiction.

5.1.2.2. Complete

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.

DOT, DHS and HHS held preliminary meetings with the National Governors Association Center for Best Practices in 2006 to conceptualize an outreach strategy to State and local officials. Subsequently, the Departments collaborated with NGA which held a series of workshops beginning in April 2007 and ending in January 2008. Components of these workshops included outreach to members of the transportation sector to ensure preparedness for pandemic influenza, including continuity of critical infrastructure functions and essential services. Other topics included social distancing for employees, travel policies, and policies for handling a potential 40 percent absentee rate.

5.1.2.3. Complete

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.

A working group comprised of representatives from DOT, HHS, USDA, and DHS identified four documents that provide tailored guidance and planning materials and are available to State, local, and tribal governments as well as transportation stakeholders. The four documents are:

The Role of Law Enforcement in Public Health Emergencies (September, 2006); DOJ: Bureau of Justice Assistance

HHS Pandemic Influenza Plan Supplement 9: Managing Travel-Related Risk of Disease Transmission

DHS: Pandemic Influenza: Preparedness, Response, and Recovery; Guide for Critical Infrastructure and Key Resources (June 21, 2006)

DOL: Guidance on Preparing Workplaces for an Influenza Pandemic (OSHA 3327-02N 2007)

These documents have been posted on www.flu.gov and are readily accessible to all stakeholders. These documents have been referenced, and links to www.flu.gov are included in the guidance that was issued to States for the development of their individual State pandemic plans. The availability of these documents was also highlighted at the series of pandemic planning sessions for State, local, and private sector stakeholders that was coordinated by the National Governors Association (NGA) and conducted in all ten FEMA regions in 2007.

5.1.2.5. Complete

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.

This item was addressed by stakeholders during the Sector-Specific workshops conducted by the DHS Partnerships Outreach Division (POD) (formerly the Infrastructure Protection Division) in April 2007. Individual States have mechanisms to temporarily suspend or relax regulations on the movement of material when an emergency is declared such as during a hurricane. An additional measure available to respond to potential commodity shortages would take place when a local or regional emergency is declared by the President, by designated Federal Motor Carrier Safety Administration (FMCSA) officials, or by appropriate State or local officials. When this declaration is made, Federal regulations automatically provide temporary relief from specific safety requirements that apply to any motor carrier or driver operating a commercial motor vehicle (CMV) to provide direct emergency assistance during the emergency regardless of the commodity involved. Under these circumstances an application by the carrier or driver is not needed. This regulatory relief covers a range of options including hours of service requirements, driver qualification requirements, CMV operation, inspection, repair, and maintenance requirements, and employee safety and health standards. There is no contingency for stockpiling based on the just-in-time inventory system; the goal is to move the cargo and not store it due to the costs associated with warehousing and carrying inventory.

5.1.3.1. In Progress

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.

In coordination with interagency partners and the individual Government Coordinating Councils (GCC) and Sector Coordinating Councils (SCC), DHS has completed individual sector specific plans for all 18 of the Critical Infrastructure and Key Resource (CI/KR) sectors. Important components of the final plans and overall pandemic preparedness issues were highlighted in a series of webinars for which we have funding

have been completed. The largest number of participants to register for the webinars was in the Emergency Services Sector where more than 800 people registered. The webinars were able to accommodate more than 500 as the contractor increased the number of lines and the others were sent emails to view the webinars off line for the next sixty days. Several of the sectors did not wish to conduct individual webinars since their sectors had already conducted extensive exercises (Banking and Finance) and Nuclear had already conducted training. The webinar schedule was as follows:

June 17, 2008	IT and Communications
July 11, 2008	Pandemic Update with DHS CI/KR and HHS/CDC
July 17, 2008	Water
September 24, 2008	Commercial Facilities
October 22, 2008	Dams/Electric/Oil and Natural Gas
October 29, 2008	Food and Agriculture
December 12, 2008	Emergency Services I
December 16, 2008	Defense Industrial Base
December 19, 2008	Emergency Services II

DHS and the other agencies worked collaboratively to create the Critical Infrastructure Influenza Pandemic Preparedness, Response, and Recovery Guide. This guide is available at www.flu.gov and www.ready.gov. DHS directly supports all 18 CI/KR SCCs and GCCs and a [Final CI/KR planning and preparedness guide](#) which sets the framework for the sector-specific guides, was published in October 2006.

5.1.3.2. Complete

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.

The Federal Government has produced several tools for businesses of all types and sizes to assist them in planning for a severe pandemic. Several checklists have been produced that provide specific recommendations for pandemic planning. These checklists include information for businesses in general (Business Pandemic Influenza Planning Checklist), as well as Planning for U.S. Businesses with Overseas Operations, the Health Insurer Pandemic Influenza Planning Checklist, and the Travel Industry Pandemic Influenza Planning Checklist. These checklists have been used by State governments, local governments, and thousands of businesses and employers in this country and worldwide to improve their pandemic planning efforts.

5.1.4.1. Complete

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).

HHS/CDC has prepared a [Travel Industry Pandemic Influenza Planning Checklist](#) for a severe influenza pandemic, as well as [workforce protection guidelines](#) for airline crew and persons meeting passengers arriving from areas affected by avian influenza A (H5N1), as well as airline cleaning crews and baggage handlers, and airline workers who clean aircraft that have collided with birds. HHS/CDC/ NIOSH recently published guidance for protecting cargo trucking crews, which is available here: www.flu.gov/travel/cleaning_trucking.html. The OSHA document "[Guidance on Preparing Workplaces for an Influenza Pandemic](#)" is applicable to transportation and border workers.

5.1.4.2. Complete

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.

The USG has developed guidance on workforce protection based on current policies and authoritative documentation. As new authoritative information becomes available, guidance will be updated and disseminated. Topics include use of masks and antiviral medications, universal precautions for transportation and border personnel in preventing the spread of pandemic influenza, and specific guidance for low, medium, and high-risk exposure workplaces.

5.1.4.3. Complete

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.

HHS/CDC has developed guidance on pandemic-influenza-related cleaning and decontamination issues for use in a variety of transportation settings, working with other Federal agencies, industry partners, and experts in critical infrastructure issues. The new HHS documents provide occupational safety recommendations for:

Workers who clean airplanes, trains, trucks, ships, and emergency medical vehicles that have transported a suspected case of pandemic influenza, and

Custodial personnel at international port of entry detention facilities and transit stations.

These documents can be accessed at: www.flu.gov/professional/transport/index.html

General information about environmental issues and cleaning practices for use during a pandemic are available in the HHS/CDC [Interim Guidance on Environmental Management of Pandemic Influenza](#) and in the OSHA document [Guidance on Preparing Workplaces for an Influenza Pandemic](#).

5.2.1.1. Complete

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.

The USG has reviewed notification protocols to ensure that accurate information is available to border and transportation stakeholders in a timely manner. Several stakeholders have been added to notification distributions, and protocols include communication chains for notification of Federal, State, and local stakeholders throughout the country, both public and private. In October 2008, HHS/CDC conducted an interdepartmental conference with more than 80 participants representing the Departments of Defense (DOD), Homeland Security (DHS) including Customs and Border Protection (CBP) and Immigration and Customs Enforcement (ICE), Transportation Security Administration (TSA) and the Office of Health Affairs, Justice (DOJ), State (DOS), and Transportation (DOT), as well as Canada, Mexico, and the Air Transport Association. Participants reviewed lessons learned from two incidents involving travelers with active tuberculosis who crossed international borders and identified further activities to strengthen interagency communication and coordination with regard to management of cases of quarantinable disease at borders.

The USDA issued a ban on February 4, 2004, on all avian products from areas where the H5N1 virus was known to exist at the time. USDA has expanded the ban to include new countries with HPAI outbreaks. Since then, USDA has issued 46 notifications of embargoes of live birds or unprocessed bird products. [Information about specific embargoes, import restrictions, or other regulatory actions](#) is available to all stakeholders and the public.

5.2.3.1. Complete

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.

DHS and HHS utilize well-established aviation and maritime protocols to acquire and track public health data related to ill passengers. A Memorandum of Understanding between the Department of Homeland Security and the Department of Health and Human Services to facilitate requests for information on potentially infected international travelers in the event of a health emergency was signed by both parties in December 2006. Subsequent efforts include more detailed and specific information sharing protocols drafted in 2007 and in use between DHS Office of Health Affairs and HHS/CDC Division of Global Migration and Quarantine which enhance the ability of each Department and agency to identify and assist travelers and those with whom they came in contact with who may be ill with a pandemic strain of influenza.

5.2.4.1. In Progress

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 18 months. Measure of performance: policy recommendations for response protocols and/or screening.

The policy of the U.S. Government (USG) is to continue to move people, goods, and services through the borders during a severe influenza pandemic. The USG established a policy framework for management of persons and cargo in this context; travelers on U.S.-bound flights and vessels may be screened at the point of

embarkation, while en route and as they attempt to enter the United States, prior to the spread of disease to the United States. During that time, those travelers identified as potentially infected with or exposed to pandemic influenza would be managed appropriate to their potential exposure to pandemic disease. Entry screening is an integral component of the USG strategy for responding to and containing pandemic outbreaks. Further, DHS and HHS are pursuing a "continental strategy", which, once in place, would obviate the need for screening at land borders. DHS and HHS developed a proposed Concept of Operations (CONOPS) for aviation, land border, and maritime entry screening and exit screening. The CONOPS outline broad recommendations for pre-departure passenger communications and active surveillance of travelers. Detailed implementation plans are under development at aviation ports of entry, which offer the greatest opportunity for potentially delaying the onset of a severe influenza pandemic in the United States.

5.2.4.2. In Progress

HHS, DHS, and DOT, in coordination with DOS, DOC, Treasury, and USDA, shall develop policy guidelines for international travel restrictions during a pandemic based on the ability to delay the spread of disease and the resulting health benefits, associated economic impacts, international and domestic implications, and operational feasibility, within 8 months. Measure of performance: interagency travel curtailment policy guidelines developed that address both voluntary and mandatory travel restrictions.

The USG policy is to continue to move people, goods, and services across borders during a severe pandemic. During a severe pandemic, HHS will use existing traveler notification methods, such as Travel Health Warnings and Travel Health Precautions, to alert the traveling public to areas of greatest risk. HHS will recommend that non-essential travel be postponed during a severe influenza pandemic and will encourage sick persons to stay home.

5.2.4.3. Complete

DOS, in coordination 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.

The USG participated actively in International Civil Aviation Organization (ICAO) efforts to update aviation pandemic preparedness guidelines, including screening protocols. The guidelines are now posted on the ICAO public website. The United States also participated in an ICAO review in Asia to ensure that ICAO screening policies, training, and communication procedures were in place. In 2007 and 2008, ICAO extended the project to Africa and the Americas, and the USG again participated.

On maritime and land border screening, the USG also helped the World Health Organization (WHO) revise the International Health Regulations (IHRs) to include new strains of human influenza in the definition of reportable "public health emergencies of international concern." The regulations give WHO authority to recommend to its Member States both entry and exit screening at ports, airports, and land borders, if appropriate for the severity of the influenza strain.. The revised IHRs went into effect in July 2007.

5.2.4.4. Complete

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.

DOS and HHS, in coordination with DHS, DOT and USDA, formed an interagency working group to assess procedures on travel information during an influenza pandemic. The interagency group has identified key personnel within each agency responsible for updating and disseminating travel information. The agencies work through OMB to obtain interagency clearance for all publicly distributed pandemic influenza materials with policy implications. All participating agencies cite www.flu.gov as the USG clearinghouse for pandemic influenza information.

The Department of State maintains the www.travel.state.gov website, with travel information for all countries, as well as information regarding pandemic influenza planning and preparedness for overseas Americans. HHS/CDC maintains the Travelers' Health website at www.cdc.gov/travel, which includes pre-travel health recommendations for both short-term and long-term travelers.

The interagency group has cleared the draft protocol entitled, "Drafting and Clearance of Interagency Warden Messages to Alert Americans Abroad of a Pandemic Influenza Outbreak." This protocol permits the USG to communicate a unified message on pandemic preparedness to overseas Americans. Private American citizens will be directed to websites with planning guides, mitigation strategies, health tips, and emergency consular contact information.

5.2.4.5. In Progress

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 protocols 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.

If a severe influenza pandemic begins overseas, the U.S. Government (USG) policy is to screen all arriving international air travelers as one means to delay entry of the virus into the United States. The USG has focused heavily on aviation-sector planning as international air travel is the most likely scenario for early introduction of the pandemic virus into the United States. As such, in coordination with transportation and public health stakeholders, the USG has developed a risk-based Concept of Operations and an initial protocol for air passenger screening. This protocol will be further refined in coordination with key stakeholders and specific port communities, and exercises will be planned to further test and refine the protocol. The USG is also developing a coordinated aviation screening plan with Canada and Mexico; this "continental approach" will allow the Federal Government to focus only on international flights originating outside of North America and this trilateral relationship will also mitigate the need for screening for illness at land border ports of entry. Work also continues in the maritime sector; concepts for risk-based screening of maritime passengers have been developed.

5.2.4.6. Complete

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.

HHS, along with interagency partners, assisted the ICAO, the International Air Transport Association (IATA), and the Airports Council International (ACI), in developing protocols for reducing the risk of spreading pandemic influenza through air transport operations, including:

ICAO: [Guidelines for States Concerning the Management of Communicable Disease Posing a Serious Public Health Risk](#)

IATA: [Guidelines for: Cabin Crew, Maintenance Crew, Cargo & Baggage Handlers, Cleaning Crew, and Passenger Agents](#)

ACI: Guidelines for Airports

Protocols for reducing the risk of spreading influenza viruses through cruise ship operations have also been provided to the Cruise Lines International Association (CLIA), Chamber of Shipping of America (CSA), and individual cruise lines and are available on the HHS/CDC website:

[Preliminary Guidelines for the Prevention and Control of Influenza-Like Illness Among Passengers and Crew Members on Cruise Ships](#)

[Notification to Public Health Authorities of Ill Passengers and Crew on Ships Destined for the United States](#)

HHS/CDC/NIOSH recently released the following guidance: [Interim Guidance for Aircraft Cleaning When Pandemic Influenza is Suspected in a Passenger or Crew Member](#).

5.2.4.7. In Progress

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, 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.

In the event of a severe pandemic, DHS, HHS, and DOT have developed concept of operations (CONOPS) for aviation, land, and maritime screening and standard operating procedures for entry screening at aviation ports of entry. The CONOPS outlines broad recommendations for pre-departure passenger communications and active surveillance of travelers. Detailed implementation plans are under development at aviation ports of entry, which offer the greatest opportunity for potentially delaying the onset of a severe influenza pandemic in the United States. DHS and HHS have also begun to train their staff and are supporting the development of operational plans with State, local, and private sector stakeholders at select ports of entry.

5.2.4.8. In Progress

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.

Procedures and protocols have been developed to detect and manage travelers with suspect pandemic influenza and minimize transmission risk to other travelers and the public in the event of a severe influenza pandemic. These procedures have been distributed to 25 ports of entry and DHS, HHS, and DOT are

supporting the relevant State, local, and private sector stakeholders with the development of their operational plans.

HHS will provide guidance for Border Patrol, ICE, and other DHS components for actions necessary to assist persons suspected of having pandemic influenza apprehended "between the ports of entry" should this threat materialize.

5.2.4.9. In Progress

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.

In an effort to limit the economic impact of a severe pandemic it is the policy of the U.S. Government (USG) to continue to move people and cargo through the borders. Infection by a virus on the surface of cargo is deemed to be a low risk while infection by direct human contact is deemed to be a higher risk. The USG currently prohibits certain cargo from affected countries and targets potentially infected cargo through automated targeting systems. However, during a pandemic the policy will be to focus screening efforts on people rather than cargo. The USG has focused heavily on aviation-sector planning as international air travel is the most likely scenario for early introduction of the pandemic virus into the United States, should it first break out overseas. In a severe influenza pandemic, travelers on U.S.-bound flights can expect to be screened at the point of embarkation (according to International Health Regulations), while en route, and as they attempt to enter the United States, prior to the spread of disease to the United States. Those travelers identified as potentially infected with or exposed to pandemic influenza would be managed appropriate to their potential exposure to pandemic disease.

5.2.4.10. In Progress

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 18 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.

Components of this effort involve developing and evaluating public health communications materials targeted to international travelers and workers at U.S. ports of entry. The goals are to help raise awareness prior to a pandemic and to provide information during a pandemic. Activities include:

- Using focus groups to collect feedback on the informational needs of international travelers and their healthcare providers
- Developing public health messages for use if highly pathogenic avian influenza is detected in U.S. poultry or wildlife
- Ensuring that workers at airports and seaports will be able to receive and distribute up-to-date information during a pandemic
- Developing tools for disseminating information to international travelers about the link between avian influenza and bird smuggling

Public health communications tools include government websites that provide information to travelers, healthcare providers, and travel-industry workers—including such HHS/CDC sites as the Avian Influenza

Travel Page, the Travel Alert Notices, the RSS (Really Simple Syndication) Feed page, and the GovDelivery subscription service.

5.2.5.1. Complete

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.

HHS/CDC has developed occupational health and safety protocols to support safe loading and unloading of cargo during a severe influenza pandemic in order to minimize the spread of disease among vessel, aircraft, and truck operators and crews. These protocols may also be applicable to other port-side personnel. The protocols include guidance targeted to cargo handlers in trucking, maritime, and air transportation. HHS/CDC is also identifying the most efficient ways to disseminate information to employers, employees, and other stakeholders.

In 2007, it was determined in a Maritime Advisory Committee for Occupational Safety and Health meeting that the general information on occupational safety practices outlined in the DOL/HHS [Guidance on Preparing Workplaces for an Influenza Pandemic](#) is applicable to the maritime industry.

5.2.5.2. Complete

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.

USDA continues to review the new electronic permitting system to ensure that it is continuing to work at a highly efficient level.

5.2.5.3. Complete

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.

We continue to have protocols in place to identify and contain animals, animal products, or cargo that could harbor influenza viruses with pandemic potential. The protocols have been reviewed to ensure that restrictions can be imposed quickly. Training seminars on the handling and quarantine of live birds have been completed by designated personnel and made available via the internet.

5.2.5.4. Complete

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.

USDA and DHS have updated the protocols and procedures for handling birds, including smuggled birds that are encountered at ports of entry. Based on these protocols, we have determined that current surge capacity is adequate. Birds are safeguarded until the appropriate regulatory decision, which may involve quarantine, is made. Birds imported from a country affected by H5N1, however, are not allowed into the United States under any circumstance. These procedures have been incorporated into a bird handling seminar, which has been presented at ports of entry throughout the United States. Bird handling procedures are also referenced in a manual for CBP employees.

5.2.5.5. Complete

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.

Representatives from DOJ, DOI, USDA, and DHS developed a plan to decrease the smuggling and distribution of prohibited agricultural commodities and products with influenza risk. The comprehensive and coordinated approach outlined in the plan has enhanced interagency collaboration and communication. "Port Risk" committees that were established at ports of entry include members from various agencies involved with certain action items within the avian influenza plan. These risk committees provide a forum for communicating concerns and for planning of special operations that focus on prohibited and restricted avian influenza products. Special operations are carried out at land borders, maritime ports, airports, cargo and mail facilities, and commerce sites in collaboration with representatives from those same agencies. Collaboration continues on revision of the Memorandum of Understanding with USDA, DOI, DOJ, and DHS concerning the handling and quarantine of seized live birds.

5.2.5.6. Complete

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.

Informational materials on import and export regulations and influenza disease risks have been developed and distributed to 100 percent of the initial targeted stakeholders, including the public, agricultural stakeholders, the wildlife trade community, and cargo and animal importers/exporters. The materials currently are available through www.flu.gov and the USDA, CBP, DOI/FWS, and HHS/CDC websites. Posters (in English, French, and Spanish) on illegal bird smuggling are being distributed to all air, land, and sea ports throughout the United States. An import/export booklet is posted on the internet and is being printed for hard copy distribution. In addition, CBP developed a poster about illegal smuggling of birds and placed it in international airports throughout the country.

5.3.1.4. Complete

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.

CBP currently prohibits certain types of cargo and goods from countries affected with H5N1. Existing protocols are followed by CBP and USDA to disseminate information, and impose country-based restrictions and item-specific embargoes in response to outbreaks and disease status. Automated Targeting Systems (ATS) are routinely used to flag restricted cargo.

Notification protocols for Transportation and Border Stakeholders are in place. The protocols include policies for interagency notification about imported birds and bird products that pose a risk for avian influenza. They cover communications chains for notification of duty officers at HHS/CDC Quarantine Stations (located at 19 ports of entry throughout the country); Federal, State, and local partners (including public health agencies and emergency responders); and private stakeholders such as airports and airlines.

The US Fish and Wildlife Service/Department of the Interior (USFWS/DOI), and the Departments of State, Transportation, and Defense are now included as stakeholders in this notification process as well. The notifications are typically issued within 24 hours of an embargo.

Trade directors for specific geographical areas write letters to their agricultural counterparts in the affected country, detailing the disease and restrictions that impact trade. USDA/APHIS then reports to the World Trade Organization the changes in trade as a result of the newly imposed restrictions.

Countries affected by embargoes are directly notified by USDA via a letter to the country's Chief Veterinary Officer. The embargoes are also posted on the USDA/APHIS website that notifies industry, State, local, and the general public about the prohibition of birds and unprocessed bird products from H5N1 affected countries.

Information about CDC's regulatory actions and the countries from which importation is restricted is available to the public via the CDC website (www.cdc.gov/flu/avian/outbreaks/embargo.htm).

5.3.2.3. Complete

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.

CBP is prepared to work with other agencies to implement and enforce cargo restrictions for potentially contaminated cargo, including embargo of live birds, and promptly notify international partners/shippers within 6 hours. CBP currently utilizes cargo selectivity criteria in its Automated Targeting System (ATS) to flag possible poultry products from countries affected by H5N1.

CBP works closely with USDA, HHS/CDC, Office of Intelligence, and other public health authorities to address notices of outbreaks and country disease status. HHS/CDC and USDA can obtain assistance from CBP to target air cargo shipments in the automated manifest system. HHS/CDC can obtain access to Coast Guard's Ship Arrival Notification System (SANS) to check all inbound vessels for their itineraries. USDA and HHS/CDC inform CBP of restricted imports. CBP notifies HHS/CDC and USDA of questionable cargo shipments and also enforces established embargoes outlined by USDA and HHS/CDC.

HHS/CDC and USDA work collaboratively to ensure that notification protocols for Transportation and Border Stakeholders are in place. The protocols include policies for interagency notification about imported birds and bird products that pose a risk for avian influenza. They cover communications chains for

notification of duty officers at HHS/CDC Quarantine Stations (located at 20 ports of entry throughout the country); Federal, State, and local partners (including public health agencies and emergency responders); and private stakeholders such as airports and airlines.

5.3.3.2. Complete

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.

The reporting of the status of the transportation sector will be accomplished through the DOT Crisis Management Center using the information sharing mechanisms of the DOT modal administrations, the information sharing elements of the Transportation Sector-Specific Plan of the National Infrastructure Protection Plan (NIPP), namely the Transportation Government Coordinating Council (GCC) and the Sector Coordinating Council (SCC), as well as through the National Infrastructure Coordination Center (NICC) of the DHS National Operations Center (NOC).

5.3.4.8. Complete

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.

The Department of Defense, in coordination with the Departments of Homeland Security and State, have identified all associated airports and seaports that may be considered strategic junctures for military deployments and redeployments.

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Chapter 6: Protecting Human Health

6.1.1.2. Complete

HHS, in coordination with DHS, shall review and approve State Pandemic Influenza plans to supplement and support DHS State Homeland Security Strategies to ensure that Federal homeland security grants, training, exercises, technical, and other forms of assistance are applied to a common set of priorities, capabilities, and performance benchmarks, in conformance with the National Preparedness Goal, within 12 months. Measure of performance: definition of priorities, capabilities, and performance benchmarks; percentage of States with plans that address priorities, identify capabilities, and meet benchmarks.

HHS led a two-stage assessment process of 50 State, 5 U.S. Territory and District of Columbia (referred to as states) pandemic influenza operating plans for a severe influenza pandemic. Stage-1 spanned August 2006 to January 2007 and Stage-2 ran from January 2007 to December 2008, and included the participation of 14 Federal departments and White House Offices.

The Stage-2 guidance had a broader scope of Operating Objectives, more detailed Supporting Activities (i.e., tasks), and benefited more from stakeholder critique. The Operating Objectives were organized by three

State government goals during a pandemic:

Ensure Continuity of Operations of State Agencies and Continuity of State Government

Protect Citizens

Sustain/Support 17 Critical Infrastructure and Key Resource Sectors (CI/KR)

Each State received a copy of its individual scores and a copy of the summary report. The summary report was delivered to the White House Homeland Security Council and released publicly. States tended to have better developed operating plans on public health response oriented Operating Objectives. In addition to the assessments, the State [guidance](#) and scores are posted online.

6.1.1.3. Complete

DHS, in coordination with HHS, DOJ, DOT, and DOD, shall be prepared to provide emergency response element training (e.g., incident management, triage, security, and communications) and exercise assistance upon request of State, local, and tribal communities and public health entities within 6 months. Measure of performance: percentage of requests for training and assistance fulfilled.

The Federal Government's exercise and evaluation program provides direct support for State, local, and tribal exercises upon request. Exercises that address pandemic influenza response are eligible for funding support and vendor assistance. The Federal Government has fulfilled 100 percent of submitted training requests thus far.

6.1.2.2. Complete

HHS, in coordination with DHS, DOD, and VA, shall develop a joint strategy defining the objectives, conditions, and mechanisms for deployment under which NDMS assets, U.S. Public Health Service (PHS) Commissioned Corps, Epidemic Intelligence Service officers, and DOD/VA health care personnel and public health officers would be deployed during a pandemic, within 9 months. Measure of performance: interagency strategy completed and tested for the deployment of Federal medical personnel during a pandemic.

HHS has developed an Emergency Support Function #8 Pandemic Influenza Playbook. This playbook describes the public health and medical capabilities the Federal Government will bring to bear to support the National response to a severe pandemic influenza. It also describes the strategic utilization plan for Federal ESF #8 assets in this scenario. These strategic principles have been tested in multiple exercises.

6.1.2.3. Complete

HHS, in coordination with DHS, DOT, DOD, and VA, shall work with State, local, and tribal governments and leverage Emergency Management Assistance Compact agreements to develop protocols for distribution of critical medical materiel (e.g., ventilators) in times of medical emergency within 6 months. Measure of performance: critical medical material distribution protocols completed and tested.

HHS convened an internal and external stakeholder working group to review existing protocols for distribution of critical medical material in times of medical emergencies. The workgroup developed a concise protocol that: 1) provides basic information on Emergency Management Assistance Compact (EMAC)

agreements, 2) refers practitioners to their State emergency management agency, 3) provides links to other resources, and 4) provides space for documenting State-specific information. It has utility both prior to an event and during an event. The partner agencies represented in the workgroup sent the finished product to their respective constituency groups for wide distribution.

6.1.2.4. Complete

HHS, in coordination with DOD and VA, in collaboration with medical professional and specialty societies, within their domains of expertise, shall develop guidance for allocating scarce health and medical resources during a pandemic, within 6 months. Measure of performance: guidance developed and disseminated.

HHS developed a guidance document entitled “[Providing Mass Casualty Care with Scarce Resources: A Community Planning Guide](#).” The Community Planning Guide was created to provide community planners – as well as planners at the institutional, State, and Federal levels - with valuable information and insights that will help them in their efforts to plan for and respond to a mass casualty event (MCE). The document is not intended to reflect Federal policy, but to provide State and local planners with options to consider when planning their response to a MCE. The guide is available at www.flu.gov and www.ahrq.gov/research/mce/ and has been distributed at multiple national meetings where the content was presented.

6.1.2.5. Complete

HHS shall package and offer to the States and Territories the core operating components of an ESAR-VHP system within 6 months and encourage all States and tribal entities to implement the ESAR-VHP program by providing technical assistance and orientations at State and territory request to implement and operate Federal guideline (ESAR-VHP) compliant systems within 12 months. Measure of performance: guidance and technical assistance, as requested, provided to States to implement ESAR-VHP capability, compliant with Federal guidelines, in all States and U.S. Territories.

HHS defined the core operating components of an Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP) system by developing ESAR-VHP compliance requirements and timeframes that must be met by each State and Territory. Orientations and technical assistance were provided to all States and Territories. Since FY 2007, the compliance requirements have been incorporated into the Assistant Secretary for Preparedness and Response (ASPR) Hospital Preparedness Program Funding Opportunity Announcements and HHS/CDC Public Health Emergency Preparedness Program continuation guidance. Also, the compliance requirements will be included in the next version of the national ESAR-VHP guidelines, which should contain new and interim standards for 20 health professions occupations. In FY 2008, HHS/ASPR provided intensive technical assistance to the states, including the volunteer recruitment assistance and access to national databases, such as the American Board of Medical Specialties (ABMS), American Osteopathic Association (AOA), Drug Enforcement Administration (DEA), and the Federation of State Medical Boards (FSMB). Currently, 49 States and the District of Columbia have operational ESAR-VHP systems.

6.1.2.6. Complete

HHS, in coordination with the USA Freedom Corps and Citizen Corps programs, shall continue to work with States and local communities to expand the Medical Reserve Corps program by 20 percent within 12 months. Measure of performance: increase number of Medical Reserve Corps units by 20 percent, from 350 to 420 units.

The goal is realized. MRC had grown from 350 units to more than 800 units and 174,800 members by spring

2009. .

6.1.2.7. Complete

HHS, in coordination with DHS, DOD, VA and the USA Freedom Corps and Citizen Corps programs, shall prepare guidance for local Medical Reserve Corps coordinators describing the role of the Medical Reserve Corps during a pandemic, within 3 months. Measure of performance: guidance materials developed and published on Medical Reserve Corps website (www.medicalreservecorps.gov).

The goal is realized. [Pandemic Flu Planning Guidance for MRC Units](#) was posted on the Medical Reserve Corps website in May 2006.

6.1.2.8. Complete

DHS, in coordination with the USA Freedom Corps, shall direct other Citizen Corps programs to prepare guidance detailing appropriate pandemic preparedness activities for each program, within 3 months. Measure of performance: guidance materials developed and published on Citizen Corps website and component program websites.

DHS has included specific links to preparedness checklists and current information on the Citizen Corps home website (www.citizencorps.gov) with instructions on how to access updated information. Affiliates have included specific pandemic influenza guidelines on their respective websites to ensure that current information is available. DHS is also working with all Citizen Corps components related to developing and disseminating specific guidance on pandemic influenza preparedness activities.

6.1.3.1. Complete

HHS, in coordination with DHS, DOS, DOD, VA, and other Federal partners, shall develop, test, and implement a Federal Government public health emergency communications plan (describing the government's strategy for responding to a pandemic, outlining U.S. international commitments and intentions, and reviewing containment measures that the government believes will be effective as well as those it regards as likely to be ineffective, excessively costly, or harmful) within 6 months. Measure of performance: containment strategy and emergency response materials completed and published on www.flu.gov; communications plan implemented.

The USG Pandemic Influenza Communications Plan was drafted in November 2006 and implemented in real-time on several occasions over the last three years. The USG Plan elements include: communications goals, strategies, and tactics during a pandemic; the planning assumptions that will frame the USG communications response; the current agreed-upon Federal messages on pandemic flu preparedness and response; and a comprehensive listing of target audiences, credible Federal expert spokespeople, and roles and responsibilities of the relevant Federal agencies. Additional communications, containment, and emergency response activities include:

Government-wide tabletop exercises on pandemic communications

Media tabletop exercises with senior government officials and media representatives (reporters, bloggers, producers, and editors)

Development of plans outlining the first steps after the first suspected case(s) of H5N1 avian flu in birds or humans in the United States

Ongoing use and testing of the National and State Incident Communications Conference Lines (NICCL and

SICCL)

The plan is currently being used to inform the development of the Department of Homeland Security's Emergency Communications Plan.

6.1.3.2. Complete

HHS, in coordination with DHS, shall develop, test, update and implement (if necessary) a multilingual and multimedia public engagement and risk communications strategy within 6 months. Measure of performance: risk communication material completed and published on www.flu.gov and other venues; State summit meetings held.

All State summits are completed. Multiple public engagement and risk communications materials targeting key audiences have been produced and distributed via multiple channels. Those risk communications materials include: television and radio Public Service Announcements (PSAs), an Individuals & Family Planning Guide, a State and Local Planning Checklist, a Faith-based and Community Organizations Preparedness Checklist, a Business Planning Checklist, a Travel Industry Checklist, three School Planning Checklists (preschool, K-12, and college), and six Health Care Checklists (first responders, hospitals, medical offices, long-term care facilities, home health, and health insurers). All checklists are available on www.flu.gov and were distributed at all State summits.

Spanish, Chinese, and Vietnamese-language versions of www.flu.gov have been launched and translations of checklists and other key materials in nine different languages are ongoing. Essential flu communications materials are available in multiple languages, including Arabic, Chinese, Spanish, French, German, Italian, German, Russian, Tagalog, and Vietnamese.

6.1.3.3. Complete

HHS, in coordination with DHS, DOD, and the VA, and in collaboration with State, local, and tribal health agencies and the academic community, shall select and retain opinion leaders and medical experts to serve as credible spokespersons to coordinate and effectively communicate important and informative messages to the public, within 6 months. Measure of performance: national spokespersons engaged in communications campaign.

The USG Pandemic Influenza Communications and individual Federal agencies' plans include messaging and spokesperson development components. Numerous regional and local Crisis and Emergency Risk Communications trainings have been held for medical, veterans health, public health, tribal health, and local and regional spokespersons so that they are prepared to communicate health information to the public if a pandemic occurs. As of April 2009, at least 3,900 individuals have participated in these trainings. An online training course as well as a train-the-trainer program was implemented to support the local and regional trainings. Messaging coordination is supported by the Centers for Disease Control and Prevention Emergency Communications System.

6.1.4.1. Complete

State, local, and tribal public health and health care authorities, in collaboration with DHS, HHS, and the Department of Labor (DOL), should coordinate emergency communication protocols with print and broadcast media, private industry, academic, and nonprofit partners within 6 months. Measure of performance: coordinated messages from communities identified above.

Since 2006, more than 3,900 individuals participated in the Crisis and Emergency Risk Communications (CERC) regional and local trainings. In 2007, a web-based CERC training program was launched and as of

December 2008, more than 350 individuals completed the training for continuing education credits. Participants will serve as local spokespeople before, during, and after a pandemic. Since 2006, more than 8,500 CERC training materials were distributed domestically and internationally for local use. These materials include the CERC Leaders for Leaders Guide, Pandemic Flu Training Manual, CERC Z-Cards and wallet cards, and the Pan Flu Storybook.

Third-party outreach efforts include:

Development of planning checklists for a full range of stakeholders including State and local governments, the business community, schools, healthcare groups, and faith-based and community organizations (these checklists include recommendations to exercise communications plans)

On-going sector briefings and the development of "push" communications mechanisms to the private sector

Leveraging Epi-X technologies to expand outreach to clinicians, hospitals, and commercial laboratories

To support local and regional media outreach efforts, then-Secretaries Leavitt and Johanns participated in media roundtables with major print, wire, broadcast, and new media outlets on-going). Over the last three years, HHS led tabletop exercises with senior government officials and media leaders, including bloggers, in Washington, D.C., New York, Chicago, Miami, Atlanta, and Los Angeles to ensure collaboration in the event of a pandemic.

6.1.4.2. Complete

DOT, in cooperation with HHS, DHS, and DOC, shall develop model protocols for 9-1-1 call centers and public safety answering points that address the provision of information to the public, facilitate caller screening, and assist with priority dispatch of limited emergency medical services, within 12 months. Measure of performance: model protocols developed and disseminated to 9-1-1 call centers and public safety answering points.

DOT, in cooperation with DHS, HHS, DOC, and several national 9-1-1 call center and public safety answering point (PSAP) organizations, developed "Preparing for Pandemic Influenza: Recommendations for Protocol Development for 9-1-1 Personnel and Public Safety Answering Points (PSAPs)." The completed document is now publicly available on www.flu.gov and www.ems.gov. In January 2008, DOT disseminated more than 6,500 CD-ROM copies of "EMS Pandemic Influenza Guidelines for Statewide Adoption" and "Preparing for Pandemic Influenza: Recommendations for Protocol Development for 9-1-1 Personnel and Public Safety Answering Points (PSAPs)" to 9-1-1 call centers and public safety answering points throughout the United States.

Responding to stakeholder requests for additional guidance on the coordination of 9-1-1 and EMS with public health and healthcare information lines, DOT provided support to the HHS/CDC's Division of Healthcare Quality Promotion (DHQP) as it convened a stakeholder meeting which produced a draft document "Coordinating Call Centers for Responding to Pandemic Influenza and Other Public Health Emergencies: A Workbook for State and Local Planners."

On March 11, 2008, HHS released the document "Federal Guidance to Assist States in Improving State-Level Pandemic Influenza Operating Plans." DOT contributed to the creation of, and evaluation of State and Territorial submissions for, "Appendix B.13 – Integrate Public Safety Answering Points into Pandemic Preparedness," which was based on the 9-1-1 Guidelines. These results were released to the public in January 2009 in the report "Assessment of States' Operating Plans to Combat Pandemic Influenza: Report to Homeland Security Council."

6.1.5.1. Complete

HHS shall encourage and subsidize the development of State, territorial, and tribal antiviral stockpiles to support response activities within 18 months. Measure of performance: State, territorial, and tribal stockpiles established and antiviral medication purchases made toward goal of aggregate 31 million treatment courses.

As of April 1, 2009, State stockpiles had been established and substantial progress has been made towards the goal of 31 million regimens (treatment courses) of antiviral drugs, as more than 23 million treatment courses of influenza antiviral drugs have been procured and stored in State stockpiles under acceptable storage conditions. Contracts have been established by HHS for States to procure antiviral drugs at a subsidized cost. These treatment courses that States are stockpiling, combined with a pro-rata allotment of 44 million treatment courses of neuraminidase inhibitors in the Federal stockpile bring the total to 67 million treatment courses, as of April 2009. The goal for these collective antiviral drug stockpiles treatment courses is to provide treatment protection for 25 percent of the U.S. population during a declared influenza pandemic. Additionally, 2.8 million treatment courses of rimantadine in the Strategic National Stockpile are available for pandemic influenza viruses susceptible to the adamantane class of influenza antiviral drugs.

The contracts for this Federal subsidy program allow States, Washington, D.C., U.S. Territories, Freely Associated States of the Pacific, and three other U.S.-based jurisdictions (New York City, Chicago, and Los Angeles County) to purchase Roche's Tamiflu® (oseltamivir) and/or GSK's Relenza® (zanamivir) through pro rata subsidy. The Federal contracts have two mechanisms for procuring these antiviral drugs: either through a 25 percent Federal subsidy match based on contract-defined prices per treatment course, or through unsubsidized purchases that have no Federal subsidy match. These contracts were extended for another year for project areas to utilize.

6.1.6.1. Complete

HHS, in coordination with DOD, VA, and State, local, and tribal partners, shall define the mix of antiviral medications to include in the Strategic National Stockpile (SNS) and State stockpiles and develop recommendations for how the different agents are to be used, within 6 months. Measure of performance: development of policy concerning the selection, relative proportions, and use of antiviral medications in SNS and State stockpiles.

A working group including representatives from DHS, DOD, VA, HHS, the Association of State and Territorial Health Officials (ASTHO), and the National Association of County and City Health Officials (NACCHO) developed and approved a document entitled "Recommendations on Agents and Use of Influenza Antiviral Medications for Public Sector Stockpiles."

In light of the emergence of oseltamivir resistance in human H1N1 viruses circulating in Europe and North America in 2008-2009, HHS began a review of the composition of the Federal antiviral drug stockpile. Alternatives to the stockpile composition as of April 2009 (80:20 oseltamivir to zanamivir) will be informed by existing clinical studies of combination influenza antiviral drug therapies. Furthermore, HHS continues to support the development of new classes of influenza antiviral drugs.

6.1.6.2. Complete

HHS, in coordination with DOD, VA, and State, local, and tribal partners, shall define critical medical material requirements for stockpiling by the SNS and States to respond to the diversity of needs presented by a pandemic, within 9 months. Measure of performance: requirements defined and guidance provided on stockpiling.

HHS, in coordination with Federal partners, and State, local, and tribal partners, defined critical medical material for stockpiling by the Strategic National Stockpile (SNS) and States for use in a severe influenza pandemic. Four workgroups focused on ventilators and ventilator-associated equipment, personal protective equipment, pharmacological agents, and needles and syringes subsequently defined draft requirements for these material. A guidance document entitled “HHS Guidelines on Federal and State Stockpiles of Critical Medical Supplies for an Influenza Pandemic” with these recommendations has been completed, and was published in the HHS/ASPR’s Division of National Healthcare Preparedness Programs’ Announcement of Availability of Funds for the Hospital Preparedness Program, Pandemic Influenza Supplement for Medical Surge Capacity and Capability in 2007.

6.1.6.3. Complete

DOD, as part of its departmental implementation plan, shall conduct a medical materiel requirements gap analysis and procure necessary materiel to enhance Military Health System surge capacity, within 18 months. Measure of performance: gap analysis completed and necessary materiel procured.

The gap analysis has been completed regarding the products necessary to provide health care to our population at risk. The gaps were identified and closed with either the procurement of products or placing contingency contracts. DOD has placed contingency contracts for ventilators, needles, and syringes to support the mass vaccination process for both pre-pandemic and pandemic vaccines. DOD has also increased surge contracts for N-95 medical respirators and purchased antibiotics to support treatment of secondary infections that are often caused by influenza.

6.1.6.4. Complete

HHS, DOD, VA and the States shall maintain antiviral and vaccine stockpiles in a manner consistent with the requirements of FDA’s Shelf Life Extension Program (SLEP) and explore the possibility of broadening SLEP to include equivalently maintained State stockpiles, within 6 months. Measure of performance: compliance with SLEP requirements documented; decision made on broadening SLEP to State stockpiles.

In 2006, Shelf Life Extension Program (SLEP) participants (HHS, VA, and DOD) stated their compliance with existing SLEP requirements as set forth in the Interagency Agreement and respective Memoranda of Agreement. For example, VA maintains antiviral stockpiles that are contained in our All Hazards Emergency Caches in the SLEP. DOD, HHS, and VA determined that the inclusion of State stockpiles in the current SLEP program was not feasible at that time.

6.1.7.1. Complete

HHS, in coordination with DHS, DOJ, VA, and in collaboration with State, local, and tribal partners, shall determine the national medical countermeasure requirements to ensure the sustained functioning of medical, emergency response, and other front-line organizations, within 12 months. Measure of performance: more specific definition of sectors and personnel for priority access to medical countermeasures and quantities needed to protect those groups; guidance provided to State, local, and tribal governments and to infrastructure sectors for various scenarios of pandemic severity and medical countermeasure supply.

In July 2008, HHS and DHS, with collaboration from VA, DOL, DOD, EPA, DOT, DOC, and other agencies and sectors, co-published “[Guidance on Allocating and Targeting Pandemic Influenza Vaccine.](#)” This document describes which individuals (including individuals in certain sectors) may receive priority access to pandemic vaccine, based on pandemic severity, in the event of an influenza pandemic that adversely affects

government, economic, and critical infrastructure sectors.

HHS' policy is that the Federal Government and States should collectively stockpile sufficient antiviral drugs to provide treatment for 25 percent of the U.S. population during a declared influenza pandemic. The Federal Government reached its goal of stockpiling 44 million treatment courses of neuraminidase inhibitors. In addition, States made substantial progress towards the goal of establishing state stockpiles totaling 31 million regimens (treatment courses) of antiviral drugs. 23 million treatment courses of influenza antiviral drugs have been procured and stored in State stockpiles under acceptable storage conditions as of April 1, 2009. As of April 2009, there was no foreseen need to prioritize antiviral treatment, especially in those states that have purchased their full pro rata share of antiviral drugs.

While antiviral drug use strategies and public stockpiles are targeted primarily for treatment of persons with pandemic illness, expanded antiviral drug production allows prophylaxis to be a potentially viable additional use of antiviral drugs. Thus in December 2008, HHS published "[Guidance on Antiviral Drug Use during an Influenza Pandemic](#)" and "[Considerations for Antiviral Drug Stockpiling by Employers in Preparation for an Influenza Pandemic](#)" which provide guidance on whom should receive prioritized antiviral drugs for prophylactic purposes in the event of a severe influenza pandemic.

These recommendations were based, in part, on an analysis done by the Department of Homeland Security's National Infrastructure Advisory Council (see www.dhs.gov/niac).

6.1.7.2. In Progress

HHS shall establish and maintain stockpiles of pre-pandemic vaccines adequate to immunize 20 million persons against influenza strains that present a pandemic threat, as soon as possible within the constraints of industrial capacity. Measure of performance: procurement of 20 million courses of pre-pandemic vaccine against influenza strains presenting a pandemic threat.

HHS established a pre-pandemic vaccine stockpile representing four strains of H5N1 virus. We will continue to develop a stockpile of adjuvants, which could be used with any pre-pandemic vaccine.

6.1.7.3. Complete

HHS in collaboration with State/local partners shall procure and allocate sufficient stockpiles of countermeasures to ensure continuity of critical medical and emergency response operations, within 18 months, within the constraints of industrial capacity. Measure of performance: sufficient quantities of antiviral medications and other countermeasures procured and distributed between SNS and State stockpiles.

Antiviral drugs and other countermeasures have been procured for the Federal Strategic National Stockpile and for State and Territory stockpiles. As of April 2009, the goal is to achieve a combined stockpile of 75 million antiviral treatment courses (or regimens) for pro rata distribution to States and Territories to provide treatment for 25 percent of the U.S. population during a declared influenza pandemic.

Of the 75 million regimens, HHS is responsible for stockpiling 44 million, and HHS has reached that goal. HHS has been working with States and Territories to help them acquire their individual proportions of the 31 million regimens, based on population; 72 percent of these treatment courses (23 million) were purchased by States as of April 1, 2009. States and Territories can procure through a subsidy program in procure regimens of Tamiflu and Relenza, either through a 25 percent Federal subsidy match based on contract-defined prices per treatment course, or through unsubsidized purchases that have no Federal subsidy match.

Further, HHS maintains a containment cache of 6 million treatment regimens to serve as a reserve for U.S.

and international use to strategically slow the spread of influenza infection during the initial phases of a pandemic.

6.1.7.4. Complete

DOD shall establish stockpiles of vaccine against H5N1 and other influenza subtypes determined to represent a pandemic threat adequate to immunize approximately 1.35 million persons for military use within 18 months of availability. Measure of performance: sufficient vaccine against each influenza virus determined to represent a pandemic threat in DOD stockpile to vaccinate 1.35 million persons.

The Department of Defense procured 1.6 million doses of HHS/FDA approved and licensed H5N1 pre-pandemic vaccine (A/Vietnam 1203/2004) in FY 2006. 1.2 million doses have been bottled by the manufacturer and 400,000 doses are held in bulk storage. In FY 2007, DOD procured 16,000 doses of A/Indonesia/05/2005 pre-pandemic vaccine which are held in bulk. All pre-pandemic vaccine procured by DOD is stored by the manufacturer. Due to limited resources and evolving pre-pandemic vaccine, DOD is deferring near term vaccine acquisition until a more effective vaccine is available. Consistent with the current literature on mitigating effects of a pandemic, DOD will use a combination of vaccines, antivirals, and non-pharmaceutical interventions to protect the active force.

6.1.9.1. Complete

HHS shall, to the extent feasible, work with antiviral drug manufacturers and large distributors to develop agreements supporting the Federal procurement of available stocks of antiviral drugs both during the pre-pandemic and pandemic periods, within 12 months. Measure of performance: new antiviral medications procured by SNS, within the constraints of industrial capacity; Federal contracts in place with antiviral drug manufacturers and distributors.

By April 2009, 50 million treatment courses of influenza antiviral drugs (neuraminidase inhibitors) for treatment use during an influenza pandemic were procured by the HHS Office of the Assistant Secretary for Preparedness and Response's (ASPR) Biomedical Advanced Research and Development Authority (BARDA). This purchase occurred in December 2007, and the final shipment was delivered to the SNS by February 2008 ahead of schedule.

6.1.9.2. Complete

HHS, in collaboration with the States, shall purchase sufficient quantities of antiviral drugs to treat 25 percent of the U.S. population, with reserve of 6 million treatment courses for outbreak containment within 18 months, within the constraints of industrial capacity. Measure of performance: 50 million treatment courses of antiviral drugs procured by SNS; States and tribes make stockpile purchases toward aggregate 31 million treatment course goal.

By April 2009, 50 million treatment courses of influenza antiviral drugs (neuraminidase inhibitors) for treatment use during an influenza pandemic were procured by HHS Office of the Assistant Secretary for Preparedness and Response's (ASPR's) Biomedical Advanced Research and Development Authority (BARDA). This purchase occurred in December 2007, and final shipments delivered to the SNS by February 2008, ahead of schedule.

As of April 1, 2009, States have purchased more than 23 million courses of antiviral drugs toward the 31 million course goal, or 72 percent of that goal.

6.1.9.3. Complete

DOD shall procure 2.4 million treatment courses of antiviral medications and position them at locations worldwide within 18 months. Measure of performance: aggregate 2.4 million treatment courses of antiviral medications in DOD stockpiles.

The Department of Defense has procured and strategically pre-positioned 8.2 million treatment courses of Tamiflu in Europe, the Far East, Southwest Asia, and the continental United States. Additional treatment courses of Tamiflu sufficient to treat 30 percent of DOD population at risk have been procured and positioned at DOD medical treatment facilities around the world. 241,000 treatment courses of Zanamivir (Relenza) have also been procured and strategically positioned.

6.1.10.1. Complete

HHS, in coordination with the private sector, shall assess the ability of U.S.-based pharmaceutical manufacturing facilities to contribute surge capacity and to retrofit existing facilities for pandemic vaccine production. This assessment will be completed within 6 months and should inform efforts to expand vaccine capacity. Measure of performance: completed assessment.

Quarterly assessment of U.S. and global influenza vaccine manufacturing surge capacity were made through site visits and other communications to manufacturers, the International Federation of Pharmaceutical Manufacturers, and WHO. After each analysis, a summary table and graph of influenza vaccine manufacturing pandemic surge capacity and vaccine forecasts were developed. A request for information was issued to ascertain manufacturer's influenza vaccine capacity and needs for retrofitting existing facilities to produce pandemic influenza vaccines in an emergency. This resulted in the issuance of a RFP solicitation in June 2006 for retrofitting of existing facilities for pandemic influenza vaccine manufacturing. HHS awarded two contracts in June 2007 for retrofitting existing facilities to manufacture pandemic influenza vaccine and thus expand within three years domestic manufacturing surge capacity by 150 million doses.

6.1.10.2. Complete

HHS, in coordination with DHS, DOD, VA, DOC, DOJ, and Treasury, shall assess whether use of the Defense Production Act or other authorities would provide sustained advantages in procuring medical countermeasures, within 6 months. Measure of performance: analytical report completed on the advantages/disadvantages of invoking the Defense Production Act to facilitate medical countermeasure production and procurement.

An assessment report on the need for the use of the Defense Production Act (DPA) by HHS for pandemic influenza vaccine production was issued in June 2006 by HHS/ASPR/BARDA. The report found that there was no need for use of the DPA as other authorities were in place and contracts were operative for this purpose. An additional intergovernmental report was prepared and issued in December 2007. Regarding the need for DPA for all-hazards medical countermeasures, including those used in an influenza pandemic, as of April 2009, the assessment for vaccines remained the same; however, the second report recognized the potential need for DPA for rated orders of masks and respirators.

6.1.11.1. Complete

HHS shall assess its existing authorities and develop a plan of action to address any regulatory or other legal issues related to the expansion of domestic vaccine production capacity within 12 months. Measure of performance: regulatory and legal issues identified in assessment.

Following a 2004-2005 study conducted by PRTM, HHS identified two legal issues associated with the expansion of pandemic influenza vaccine domestic manufacturing capacity: 1) addressing the potential

liability of vaccine manufacturers; and 2) securing the necessary intellectual property rights to manufacture the vaccine. Both issues have been addressed.

The liability concerns were addressed by the issuance of a declaration under the Public Readiness and Emergency Preparedness Act (PREP Act) (Pub. L. 109-148) for the H5N1 vaccine by the Secretary of HHS in 2006. The PREP Act provides immunity from suit and liability to manufacturers, distributors, program planners, and other covered persons for “all claims for loss caused by, arising out of, relating to, or resulting from” administration and use of covered countermeasures, as specified in a declaration by the Secretary of HHS [See Section 319F-3 of the Public Health Service Act (42 U.S.C. §247d-6d)].

The intellectual property concerns were addressed by the issuance of licensing agreements between MedImmune and other influenza vaccine manufacturers in 2006-07 to manufacture H5N1 vaccines for the U.S. Government. MedImmune, the operating partner in a consortium of reverse genetics patent holders, holds the intellectual property rights to the H5N1 vaccine. Another intellectual property issue is the extension of U.S. Government patent rights to U.S.-licensed vaccine manufacturers for production of pre-pandemic vaccines stockpiled for the U.S. Government.

6.1.11.2. Complete

HHS shall develop a protocol and decision tools to implement liability protections and compensation, as authorized by the Public Readiness and Emergency Preparedness Act (Pub. L. 109-148), within 6 months. Measure of performance: publication of protocol and decision tools.

Pandemic influenza PREP Act protocol and decision tools were developed and published on www.flu.gov in December 2006. The protocol was used successfully for the PREP Act Declaration for H5N1 vaccines issued by HHS in January 2007. The January 2007 declaration was amended in August 2007 to include H7 and H9 vaccine candidates, and again in October 2008 to include H2 and H6 vaccine candidates. Also, in October and December 2008 two additional PREP Act declarations were issued for other pandemic influenza countermeasures. The first for the antiviral drugs oseltamivir phosphate (Tamiflu®) and zanamivir (Relenza®) and the second for pandemic influenza diagnostics, personal respiratory protection devices, and respiratory support devices.

6.1.12.1. Complete

HHS shall collaborate with health care providers, industry partners, and State, local, and tribal public health authorities to develop public information campaigns and other mechanisms to stimulate increased seasonal influenza vaccination, within 12 months. Measure of performance: domestic vaccine use increased relative to historical norms.

HHS implements regular integrated communications campaigns to increase vaccination rates for seasonal influenza. The centerpiece is National Influenza Vaccine Week, which usually takes place the week after Thanksgiving. As of March 2009, the campaign generated more than 880 million impressions with efforts continuing due to a late arriving influenza season.

HHS currently lacks an accurate method to measure vaccine usage, and uses vaccine distribution as a proxy measure. During the past several years, domestic vaccine distribution has increased, as follows:

2003-04	83.1 M doses
2004-05	57.0 M doses (significant vaccine shortage occurred this season)

2005-06	81.2 M doses
2006-07	102.5 M doses
2007-08	112.8 M doses
2008-09	114 M doses

6.1.13.1. Complete

HHS, in coordination with DHS, DOD, VA, and DOJ, and in collaboration with State, local, and tribal partners and the private sector, shall ensure that States, localities, and tribal entities have developed and exercised pandemic influenza countermeasure distribution plans, and can enact security protocols if necessary, according to pre-determined priorities (see below) within 12 months. Measures of performance: ability to activate, deploy, and begin distributing contents of medical stockpiles in localities as needed established and validated through exercises.

Guidance and resources have been provided to State, local, tribal, and territorial governments to help them develop local countermeasure distribution plans and conduct exercises for distribution of antiviral drugs and mass administration of vaccines consistent with existing Federal plans for a severe influenza pandemic.

All States and large cities have submitted countermeasure distribution plans and conducted exercises for antiviral distribution, in accordance with the HHS/CDC Strategic National Stockpile (SNS) Medical Countermeasure Distribution for Pandemic Influenza Exercise Guide. During the fall and winter of 2006-2007, most States conducted exercises involving large-scale seasonal influenza vaccination clinics in preparation for mass vaccination activities during an influenza pandemic. Two States (Arkansas and Ohio) also participated in a HHS/CDC Pre-Pandemic Influenza Vaccine Distribution Exercise in August 2007, which enhanced pandemic preparedness at the Federal, State, and manufacturer levels.

HHS/CDC conducted an exercise with public health agencies to collect State and local data from seasonal influenza vaccination clinics and monitor the number of doses of vaccine administered by each site. In addition, VA conducted an exercise with VA Hospitals and public health and emergency management agencies that included deployment of VA's emergency pharmacy caches in June 2008. As a result, VA is working on closed point of distribution (POD) development and is reviewing its pharmacy cache system with internal and external experts. DOD and HHS have an interagency agreement to fully cooperate and share resources within the DOD and SNS medical stockpiles in response to a catastrophic event. In February 2009, HHS/CDC conducted an internal exercise concerning the Division of the Strategic National Stockpile (DSNS)'s Pandemic Influenza Emergency Response Plan and the role of DSNS during a Pandemic.

6.1.13.2. Complete

HHS, in coordination with DOD, VA, States, and other public sector entities with antiviral drug stockpiles, shall coordinate use of assets maintained by different organizations, within 12 months. Measure of performance: plans developed for coordinated use of antiviral stockpiles.

Antiviral drugs have been procured for the Federal Strategic National Stockpile and for State and Territorial stockpiles. The goal is to achieve a combined stockpile of 75 million antiviral treatment courses (or regimens) for pro rata distribution to States and Territories to provide treatment for 25 percent of the U.S. population during a declared influenza pandemic. Of the 75 million regimens, HHS was responsible for stockpiling 44 million, and HHS has reached that goal. HHS has worked with States and Territories to help them acquire their individual proportions of the 31 million regimens goal set for them, based on population. DOD is stockpiling antiviral drugs for its active duty personnel, and VA is doing the same for its patient population

and healthcare workers.

6.1.13.3. Complete

HHS, in collaboration with State, territorial, tribal, and local health care delivery partners, shall develop and execute strategies to effectively implement target group recommendations as described below, within 12 months. Measure of performance: guidance on strategies to implement target group recommendations developed and disseminated to State, local, and tribal authorities for inclusion in pandemic response plans.

In July 2008, HHS and DHS co-published "[Guidance on Allocating and Targeting Pandemic Influenza Vaccine](#)" which provides guidance to States, Territories, and tribes on how limited supplies of vaccine may be allocated in the event of an influenza pandemic that affects the economy, critical infrastructure, the functioning of government and/or societal function, and describes the scientific and ethical framework for how this guidance was developed.

In December 2008, HHS published [Guidance on Antiviral Drug Use during an Influenza Pandemic](#) and [Considerations for Antiviral Drug Stockpiling by Employers in Preparation for an Influenza Pandemic](#). These guidance documents were the subject of an HHS PlanFirst Webcast in December 2008 to assist in dissemination of the policies and recommendations.

6.1.13.4. Complete

HHS, in coordination with DOD, VA, and in collaboration with State, local, and tribal governments and private sector partners, shall assist in the development of distribution plans for medical countermeasure stockpiles to ensure that delivery and distribution algorithms have been planned for each locality for antiviral distribution. Goal is to be able to distribute antiviral medications to infected patients within 48 hours of the onset of symptoms within 12 months. Measure of performance: distribution plans developed.

Guidance and resources have been provided to State, local, tribal, and territorial governments to aid local countermeasure distribution planning.

All States completed antiviral drug distribution plans for a severe influenza pandemic by April 2007, and submitted them to HHS/CDC for review. States are conducting exercises to test these plans in accordance with the HHS/CDC Strategic National Stockpile Medical Countermeasure Distribution for Pandemic Influenza Exercise Guide. SNS also has developed and disseminated a national distribution plan that describes how Federal assets will be delivered to States and cities during a pandemic.

VA's antiviral stockpiles will be distributed at VA healthcare sites according to Federal guidance and locally determined need. VA continues to work with HHS/CDC, DOD, its respective States and other partner agencies on exercises and deployment in a pandemic.

6.1.13.5. In Progress

HHS, in coordination with DHS, DOS, DOD, DOL, VA, and in collaboration with State, local, and tribal governments and private sector partners, shall develop plans for the allocation, distribution, and administration of pre-pandemic vaccine, within 9 months. Measure of performance: department plans developed and guidance disseminated to State, local, and tribal authorities to facilitate development of pandemic response plans.

While HHS has begun to draft guidance on the allocation of pre-pandemic vaccine for an H5N1 pandemic,

guidance on vaccine distribution and administration has been published and includes:

Pandemic Influenza Vaccination: A Guide for State, Local, Territorial, and Tribal Partners, December 2006. The purpose of the Guide is to assist State, local, territorial, and tribal officials in developing pandemic influenza vaccination plans. It includes updates on key issues, such as availability of pandemic and pre-pandemic vaccines, and a Vaccine Planning Checklist.

Update: Status of Pandemic Influenza Vaccine Manufacturing Capacity, Pre-Pandemic Stockpile, and Planning for Vaccine Distribution, December 2007.

[CDC Guidelines for Large-Scale Influenza Vaccination Clinic Planning](#)

“[Guidance on Allocating and Targeting Pandemic Influenza Vaccine](#)” July 2008. Developed by an HHS-led interagency group, this document provides guidance on distribution of initial stocks of vaccine, assuming a pandemic occurs that affects the functioning of the economy, government, critical infrastructure, and/or society. Priority groups for vaccination are defined in the healthcare, emergency services, and critical infrastructure sectors, as well as in the general population. The document also includes general recommendations on approaches to allocation and the importance of re-assessing and modifying the guidance, as needed, at the time of a pandemic.

6.1.13.6. Complete

DOT, in coordination with HHS, DHS, State, local, and tribal officials and other EMS stakeholders, shall develop suggested EMS pandemic influenza guidelines for statewide adoption that address: clinical standards, education, treatment protocols, decontamination procedures, medical direction, scope of practice, legal parameters, and other issues, within 12 months. Measure of performance: EMS pandemic influenza guidelines completed.

DOT, in coordination with DHS, HHS, and State, local, tribal and national emergency medical services (EMS) officials and stakeholder organizations, developed "EMS Pandemic Influenza Guidelines for Statewide Adoption." The completed document is now publicly available on www.flu.gov and www.ems.gov. In January 2008, DOT disseminated more than 6,500 CD-ROM copies of "EMS Pandemic Influenza Guidelines for Statewide Adoption" and "Preparing for Pandemic Influenza: Recommendations for Protocol Development for 9-1-1 Personnel and Public Safety Answering Points (PSAPs)" to 9-1-1 call centers and public safety answering points throughout the United States.

Responding to stakeholder requests for additional guidance on the coordination of 9-1-1 and EMS with public health and healthcare information lines, DOT provided support to HHS/CDC's Division of Healthcare Quality Promotion (DHQP) as it convened a stakeholder meeting which produced a draft document "Coordinating Call Centers for Responding to Pandemic Influenza and Other Public Health Emergencies: A Workbook for State and Local Planners."

On March 11, 2008, HHS released the document "Federal Guidance to Assist States in Improving State-Level Pandemic Influenza Operating Plans." DOT contributed to the creation of, and evaluation of State and Territorial submissions for, "Appendix B.12 – Integrate EMS and 9-1-1 into Pandemic Preparedness," which was based on the EMS Guidelines. These results were released to the public in January 2009 in the report "Assessment of States' Operating Plans to Combat Pandemic Influenza: Report to Homeland Security Council."

6.1.13.7. Complete

HHS, in coordination with DHS, DOT, DOD, and VA, shall work with State, local, and tribal

governments and private sector partners to develop and test plans to allocate and distribute critical medical materiel (e.g., ventilators with accessories, resuscitator bags, gloves, face masks, gowns) in a health emergency, within 6 months. Measure of performance: plans developed, tested, and incorporated into department plan, and disseminated to States and tribes for incorporation into their pandemic response plans.

The plan to allocate and distribute Federally-held materiel during a severe influenza pandemic has been developed and tested from the Federal standpoint. The plan entitled “Pandemic Influenza Allocation and Distribution Plan: Guidance to Project Areas,” was developed by HHS with the support of DOD, VA, DOT, DHS, Public Health Emergency Preparedness (PHEP) Project Areas, and commercial partners. The plan was tested in October 2006 and again from November 2006 through March 2007. The plan was incorporated into the HHS/CDC Operations Plan and disseminated to States for incorporation into their pandemic influenza response plans and for coordination with their respective local and tribal authorities.

6.1.13.8. Complete

DOD shall supply military units and posts, installations, bases, and stations with vaccine and antiviral medications according to the schedule of priorities listed in the DOD pandemic influenza policy and planning guidance, within 18 months. Measure of performance: vaccine and antiviral medications procured; DOD policy guidance developed on use and release of vaccine and antiviral medications; and worldwide distribution drill completed.

The antiviral medications Tamiflu and Relenza have been strategically positioned in Europe, the Far East, Southwest Asia, and the continental United States to allow for rapid distribution. Additionally, quantities of Tamiflu sufficient to treat 30 percent of the DOD population at risk have been procured and positioned at DOD medical treatment facilities around the world. In addition, the Defense Logistics Agency (DLA), responsible for the world-wide distribution of military materiel, transports similar items on a daily basis and has contingency capability built into its distribution system. The positioning of enough Tamiflu to treat 30 percent of the population at risk will greatly reduce the requirement for DLA to immediately transport supplies at the outset of a pandemic. The daily transport capability of DLA combined with the world-wide distribution of medical materiel already accomplished has eclipsed the need to hold distribution drills.

6.1.13.9. In Progress

HHS, in coordination with DOD, VA, and in collaboration with State, territorial, tribal, and local partners, shall develop/refine mechanisms to: (1) track adverse events following vaccine and antiviral administration; (2) ensure that individuals obtain additional doses of vaccine, if necessary; and (3) define protocols for conducting vaccine- and antiviral-effectiveness studies during a pandemic, within 18 months. Measure of performance: mechanism(s) to track vaccine and antiviral medication coverage and adverse events developed; vaccine- and antiviral-effectiveness study protocols developed.

HHS/FDA and HHS/CDC are collaborating with other Federal agencies to monitor adverse events associated with antiviral use and to enhance vaccine safety monitoring. As of April 2009, mechanisms were in place to receive spontaneous reports of adverse events related to vaccine and antiviral administration. As a result of ongoing HHS/FDA and VA collaboration, the VA Center for Medication Safety and Pharmacy Benefits Management Group added vaccinations to their national pharmacovigilance program. As of that same date, DOD electronic vaccine record captured all vaccines given to DOD personnel. HHS/FDA published draft guidance on Postmarketing Adverse Event Reporting for Medical Products and Dietary Supplements During an Influenza Pandemic for public comment in December 2008.

Vaccine

To develop new ways to monitor the safety of pandemic influenza vaccines, by April 2009 FDA had initiated pilot projects to promptly track and evaluate selected adverse events after annual seasonal influenza vaccines. This new capability was designed to use information from databases held by the Centers for Medicare & Medicaid Services (CMS), and was planned to enhance HHS/FDA's capability to rapidly identify and respond to potential safety signals for these vaccines, and serve as a model for monitoring of pandemic vaccines.

Also by April 2009, HHS/CDC had updated the Countermeasure and Response Administration (CRA) system to track aggregate pandemic vaccine doses administered. As of April 2009, a national electronic VA occupational health record-keeping system that will assist in managing staff illness, track vaccination status, and fitness for duty was scheduled for beta-testing. DOD tracks any immunization provided to service members.

As of April 2009, a draft protocol to study the effectiveness of pre-pandemic and/or pandemic vaccine had been developed. This protocol had already been used to estimate the effectiveness of seasonal influenza vaccine at various sites within the United States. DOD GEIS has sponsored a vaccine efficacy study, leveraging multiple partners, which was scheduled as of April 2009 to take place during FY 2009-2010.

Antiviral Drugs

Mechanisms for receiving spontaneous drug adverse events and processes for monitoring antiviral drug related adverse events of successive influenza seasons were in place, as of April 2009. HHS/CDC, in collaboration with other Federal agencies (HHS/SAMHSA, CPSC and HHS/FDA), is monitoring adverse events associated with antiviral use through active surveillance. HHS/ FDA reviewed adverse event reports for successive influenza seasons from 2005-2007 for Tamiflu, Relenza, Symmetrel, and Flumadine. The review of neuropsychiatric adverse events for all antiviral drugs were discussed during the November 2007 Pediatric Advisory Committee meeting, and product labels were subsequently updated to discuss these events.

Administration of outpatient antiviral medication is included in the DOD electronic medical record. The distribution of antiviral drugs is currently tracked from the Strategic National Stockpile to the States. The Countermeasure and Response Administration (CRA) system, described above to track aggregate pandemic vaccine doses administered nation-wide was designed so it can be modified to track the administration of other countermeasures, including antiviral drugs.

Protocols to study the effectiveness of the antiviral agent oseltamivir delivered either early (i.e., less than 48 hours after illness onset) or late (>48 hours) against seasonal influenza through randomized placebo-control trials were developed and implemented by April 2009. HHS/CDC routinely monitors antiviral resistance for seasonal influenza viruses and plans to routinely assess antiviral resistance among a representative sample of viruses during all stages of a pandemic.

6.1.14.1. In Progress

HHS, in coordination with DHS and Sector-Specific Agencies, DOS, DOD, DOJ, DOL, VA, Treasury, and State/local governments, shall develop objectives for the use of and strategy for allocating, vaccine and antiviral drug stockpiles during pre-pandemic and pandemic periods under varying conditions of countermeasure supply and pandemic severity within 3 months. Measure of performance: clearly articulated statement of objectives for use of medical countermeasures under varying conditions of supply and pandemic severity.

HHS/CDC has developed a Pandemic Severity Index (PSI) to provide guidance for the level of response based on determination of the pandemic severity, which is available here: <http://flu.gov/professional>

/community/commitigation.html (figure A). In July 2008, HHS and DHS, with collaboration from VA, DOL, DOD, EPA, DOT, DOC, and other agencies and sectors, co-published “Guidance on Allocating and Targeting Pandemic Influenza Vaccine.” This document describes which individuals (including individuals in certain sectors) may receive priority access to pandemic vaccine, based on defined levels of pandemic severity. It also discusses the need for national leaders to obtain advice from scientific and public health experts at the time of a pandemic to determine whether the guidance should be modified based on the characteristics of the emerging pandemic. Work on pre-pandemic vaccine guidance continues.

HHS’ policy is that the Federal Government and States should collectively stockpile sufficient antiviral drugs to provide treatment for 25 percent of the U.S. population during a declared influenza pandemic. The Federal Government has reached its goal of stockpiling 44 million treatment courses of neuraminidase inhibitors. In addition, by April 2009, States had made substantial progress towards the goal of establishing state stockpiles totaling 31 million regimens (treatment courses) of antiviral drugs. More than 23 million treatment courses of influenza antiviral drugs have been procured and stored in State stockpiles under acceptable storage conditions, as of April 1, 2009. Therefore, as of April 2009, there was no foreseen need to prioritize antiviral treatment, especially in those States that have purchased their full pro rata share of antiviral drugs.

While current antiviral drug use strategies and public stockpiles are targeted primarily for treatment of persons with pandemic illness, expanded antiviral drug production allows prophylaxis to be a viable additional use of antiviral drugs. In December 2008, HHS published “[Guidance on Antiviral Drug Use during an Influenza Pandemic](#)” and “[Considerations for Antiviral Drug Stockpiling by Employers in Preparation for an Influenza Pandemic](#)” which provide guidance on whom should receive prioritized antiviral drugs for prophylactic purposes.

These recommendations were based, in part, on an analysis done by the Department of Homeland Security's National Infrastructure Advisory Council (see www.dhs.gov/niac).

6.1.14.2. In Progress

HHS, in coordination with DHS and Sector-Specific Agencies, DOS, DOD, DOL, VA, Treasury, and State/local governments, shall identify lists of personnel and high-risk groups who should be considered for priority access to medical countermeasures, under various pandemic scenarios, according to strategy developed in compliance with 6.1.14.1, within 9 months. Measure of performance: provisional recommendations of groups who should receive priority access to vaccine and antiviral drugs established for various scenarios of pandemic severity and medical countermeasure supply.

HHS and DHS, with collaboration from VA, DOL, DOD, EPA, DOT, DOC, and other agencies and sectors, co-published “[Guidance on Allocating and Targeting Pandemic Influenza Vaccine](#)” in July 2008. This document describes which individuals (including individuals in certain sectors) may receive priority access to pandemic vaccine. It also discusses the need for national leaders to obtain advice from scientific and public health experts at the time of a pandemic to determine whether the guidance should be modified based on the characteristics of the emerging pandemic.

In December 2008, HHS also published two documents for a severe influenza pandemic: “[Guidance on Antiviral Drug Use during an Influenza Pandemic](#)” and “[Considerations for Antiviral Drug Stockpiling by Employers in Preparation for an Influenza Pandemic.](#)” The first document includes recommendations for prophylaxis of workers who have very high and high risk exposures (generally healthcare and emergency services personnel) for the duration of community pandemic outbreaks, and post-exposure prophylaxis of persons who are severely immunocompromised, persons who live in "closed" settings such as nursing homes or prisons if a pandemic outbreak occurs in the facility, and healthcare and emergency services personnel who do not have frequent close contact with pandemic influenza patients. The companion document provides additional guidance to employers who are considering purchasing antiviral drugs to protect their workforce

during an influenza pandemic.

6.1.14.3. In Progress

HHS, in coordination with DHS and Sector-Specific Agencies, DOS, DOD, DOL, and VA, shall establish a strategy for shifting priorities based on at-risk populations, supplies, and efficacy of countermeasures against the circulating pandemic strain, and characteristics of the virus within 9 months. Measure of performance: clearly articulated process in place for evaluating and adjusting pre-pandemic recommendations of groups receiving priority access to medical countermeasures.

At the time of a pandemic, HHS plans to consult with current, relevant Federal advisory committees (such as the NBSB, ACIP, and NVAC) to determine if guidance on priority access to pandemic vaccine needs to be adjusted. As of April 2009, HHS also planned to ask these committees to evaluate existing guidance on antiviral drug use (“[Guidance on Antiviral Drug Use during an Influenza Pandemic](#)” and “[Considerations for Antiviral Drug Stockpiling by Employers in Preparation for an Influenza Pandemic](#)”).

Access to antiviral drugs will not be prioritized during a severe influenza pandemic. HHS’ policy is that the Federal Government and States should collectively stockpile sufficient antiviral drugs to provide treatment for 25 percent of the U.S. population during a declared influenza pandemic. The Federal Government has reached its goal of stockpiling 44 million treatment courses of neuraminidase inhibitors. In addition States made substantial progress towards the goal of establishing State stockpiles totaling 31 million regimens (treatment courses) of antiviral drugs by April 2009. (More than 23 million treatment courses of influenza antiviral drugs have been procured and stored in State stockpiles under acceptable storage conditions as of April 1, 2009). Therefore, as of April 2009, there was no foreseen need to prioritize antiviral treatment, especially in those States that had purchased their full pro rata share of antiviral drugs.

6.1.15.1. Complete

HHS shall develop capability, protocols, and procedures to ensure that viral isolates obtained during investigation of human outbreaks of influenza with pandemic potential are sequenced and that sequences are published on GenBank within 1 week of confirmation of diagnosis in index case, within 6 months. Measure of performance: viral isolate sequences from outbreaks published on GenBank within 1 week of confirmation of diagnosis.

HHS/NIH supports a state-of-the-art microbial genome sequencing facility, the J.Craig Venter Institute, formally Institute for Genomic Research (TIGR), that is currently generating high quality influenza genome sequence data for avian and human influenza viruses. As of March 2009, nearly 3,400 human and avian isolates have been completely sequenced. Genomic sequencing data was released to GenBank within 45 days of completing the sequence, allowing rapid and unrestricted access of the data by the scientific community. As of that time, the facility was operating at a capacity to sequence 200 complete influenza genomes per month with capabilities in place to expand the number of viral genomes sequenced per month in the event of a pandemic. In addition, the center can generate the complete viral genome sequence from a clinical sample in 2-3 days. HHS/NIH, in partnership with the Association of Public Health Laboratories (APHL), is prepared to publish sequence data on any human isolate of H5N1 detected in the United States within one week of obtaining a viral isolate.

6.1.15.2. Complete

HHS shall increase and accelerate genomic sequencing of known human and avian influenza viruses and shall rapidly make this sequence information publicly available, within 6 months. Measure of performance: increased throughput of genomes sequenced (versus FY 2005 baseline) and decreased

time interval between completion of sequencing and publication on GenBank.

As of March 2009, nearly 3,400 human and avian isolates have been completely sequenced. Genomic sequencing data was released to GenBank within 45 days of completing the sequence, allowing rapid and unrestricted access of the data by the scientific community. The complete viral genome sequence can be generated from a clinical sample in 2-3 days and HHS is prepared to publish sequence data on any human isolate of H5N1 detected in the United States within one week of obtaining a viral isolate.

6.1.15.3. Complete

HHS shall develop protocols and procedures to ensure timely reporting to Federal agencies and submission for publication of data from HHS-supported influenza vaccine, antiviral medication, and diagnostic evaluation studies, within 6 months. Measure of performance: study data shared with Federal agencies within 1 month of analysis and publication of clinical trial data following completion of studies.

HHS research and development funding is provided contingent to disclosing the study data among HHS agencies, if feasible. To guarantee the integrity of pre-publication data, the HHS/NIH National Institute of Allergy and Infectious Disease (NIAID) developed internal procedures to ensure that study information is provided to HHS officials prior to publication or public release of such information. As of April 2009, HHS reviewed relevant studies weekly through an HHS senior-level forum for stakeholder offices and agencies to identify and address strategic, cross-cutting issues related to seasonal and pandemic influenza. NIAID influenza program staff also regularly participates in HHS and other trans-federal agency meetings to share and discuss latest research findings; staff also attend international meetings at which they report relevant study data and outcomes. Since May 2007, fourteen studies have been presented at a weekly trans-HHS meeting prior to publication or posting. Once ready for public information, study summaries have been posted at www.flu.gov

6.1.16.1. Complete

HHS shall continue to support the advanced development of cell-culture based influenza vaccine candidates. Measure of performance: research grants and/or contracts awarded to develop cell-culture based influenza vaccines against currently circulating influenza strains with pandemic potential within 6 months.

HHS/ASPR/BARDA has awarded six contracts totaling more than \$1.4 billion since 2005 to major influenza vaccine manufacturers for the advanced development of cell-based seasonal and pandemic influenza vaccines seeking U.S.-licensure. The contracts also aim to establish U.S.-based manufacturing facilities with a minimum surge capacity of 150 million doses of pandemic vaccine per manufacturer within 6 months of the onset of an influenza pandemic. As of April 2009, two companies completed Phase 3 clinical trials of cell-based seasonal influenza vaccines in the United States; another company completed a Phase 2 clinical trial; and another company completed Phase 1 clinical trials. In February, 2009, a HHS/BARDA-supported vaccine manufacturer submitted a Biologics License Application (BLA) to FDA for licensure of a cell-based influenza vaccine.

6.1.16.2. Complete

HHS shall support the renovation of existing U.S. manufacturing facilities that produce other FDA-licensed cell-based vaccines or biologics and the establishment of new domestic cell-based influenza vaccine manufacturing facilities, within 36 months. Measure of performance: contracts awarded for renovation or establishment of domestic cell-based influenza vaccine manufacturing

capacity.

HHS/ASPR/BARDA awarded two contracts in June 2007 for \$133 million for renovation of existing domestic biologics manufacturing facilities for pandemic vaccine production. Retrofitting was underway as of April 2009, with expected completion dates in 2009-2011. The renovation will result in a net increase in domestic manufacturing capacity of 100-150 million doses. Activities continue to be on schedule. In January 2009, HHS/ASPR/BARDA announced a \$487 million multi-year contract with Novartis Vaccines and Diagnostics, Inc., to build the first U.S. facility to manufacture cell-based vaccine for seasonal and pandemic flu. Because cell-based influenza vaccine can be made faster and in greater quantities than traditional vaccine, the new facility is expected to increase the U.S. capacity to make pandemic influenza vaccine by at least 25 percent.

6.1.17.1. Complete

HHS shall continue to support the development and clinical evaluation of novel vaccines and vaccination strategies (e.g., adjuvants, alternative delivery systems, common epitope vaccines).

Measure of performance: research grants and/or contracts awarded to support the development of influenza vaccines (including polyvalent influenza vaccines), adjuvants and dose-sparing strategies, and more efficient delivery systems within 12 months, leading to initiation of phase I and II clinical trials to evaluate influenza vaccines and vaccination strategies.

By April 2009, HHS had made substantial progress in influenza vaccine research. On April 17, 2007 the FDA approved the first license for a pre-pandemic influenza vaccine in the United States.

HHS has also worked to expand and accelerate the development of additional manufacturing methods, collaborated with industry to pursue other vaccine strategies, and explored the concept of developing a vaccine that raises immunity to parts of the influenza virus that vary little from season to season and from strain to strain. As of April 2009, HHS/NIH/NIAID planned to continue to conduct clinical trials of avian influenza viruses with pandemic potential including the initiation of phase I and phase I/II trials of vaccines against A subtype H7N7 and H5N1 (clade 1 and clade 2). Studies will assess dose, effects of adjuvants on safety and immunogenicity, and priming and boosting with antigenically distinct clades.

In a cooperative effort involving HHS/NIH/NIAID, HHS/CDC, and other HHS agencies, phase I/II safety and efficacy trials are planned to evaluate “mix and match” combinations of H5N1 vaccines in the pre-pandemic influenza vaccine stockpile and novel adjuvants being developed under HHS contracts.

As of April 2009, HHS/FDA had begun to explore with industry partners the regulatory pathways that would facilitate the development of polyvalent influenza vaccines, specifically a quadravalent seasonal vaccine to extend protection by the vaccine to both circulating lineages of human influenza type B virus.

6.1.17.2. Complete

HHS shall collaborate with the pharmaceutical, medical device, and diagnostics industries to accelerate development, evaluation (including the evaluation of dose-sparing strategies), licensure, and U.S.-based production of new antiviral drugs and diagnostics. Development activities should include design of preclinical and clinical studies to collect safety and efficacy information across multiple strains and seasons of circulating influenza illness, and advance design of protocols to obtain additional updated information to support revisions in product usage during circulation of novel strains and evolution of pandemic spread. Such collaborations should involve early and frequent discussions with the FDA to explore the use of accelerated regulatory pathways towards product approval or licensure. Collaborations concerning diagnostic tests should include CDC to facilitate access to pandemic virus samples for validation testing and ensure that the test is one that can be used to promote and protect the public health during an influenza pandemic. Measure of performance: initiation of clinical trials of

new influenza antiviral drugs and diagnostics.

Over the last several years, HHS/NIH/NIAID actively supported the discovery and development of new antiviral agents to prevent and treat influenza virus infections. Basic research and early product development activities range from target discovery and identification of compounds with novel mechanisms of action, combination antiviral studies, and expansion of the cross-reactivity of monoclonal antibody cocktails and clinical studies to evaluate promising therapeutic candidates. A full array of research services, including in vitro and in vivo antiviral screening activities preclinical services, are available to support identification and development of new therapeutic candidates and advance them toward regulatory approval.

In addition, the discovery and development of new diagnostic tests to identify influenza virus infections has also received greater attention because of the need to identify influenza virus infections quickly, and specifically in order to implement public and personal health countermeasures for both seasonal and pandemic influenza.

In 2007-2008, HHS/NIH/NIAID awarded 37 grants to private sector companies and academic collaborators (“partnership awards”) to develop new countermeasures against influenza virus, including new and novel antiviral drugs and diagnostics. All NIAID clinical trials are entered into www.clinicaltrials.gov upon initiation. In addition, HHS/ASPR/BARDA has supported the advanced development of promising diagnostics, and antiviral drugs, such as peramivir, which BARDA has supported since 2007.

6.1.17.3. Complete

HHS, in coordination with DHS, shall develop and test new point-of-care and laboratory-based rapid influenza diagnostics for screening and surveillance, within 18 months. Measure of performance: new grants and contracts awarded to researchers to develop and evaluate new diagnostics.

As of April 2009, HHS had issued new grants and contracts for development and evaluation of new diagnostics, including point-of-care (POC) tests and laboratory-based tests for clinical use and surveillance information. The grants and contracts were issued in fulfillment of a USG diagnostic strategy developed by the HHS-sponsored Interagency Diagnostic Working Group.

Contracts awarded to biotechnology companies to further development of point-of-care tests had these aims:

Development of new tests, based on novel detection technologies

Production of viral reagents to support development of point-of-care tests

Evaluation of the preliminary specificity and sensitivity of the new point-of-care prototype tests

Cooperative agreements and additional awards to further development of laboratory-based diagnostic tests had these aims:

Clinical evaluation of an HHS/CDC Human Influenza Real-Time RT-PCR Detection and Characterization Panel that can detect specific influenza A subtypes, allowing public health authorities to identify novel (and potentially pandemic) strains of influenza

Advanced development of an influenza diagnostic device that allows hospital laboratories to test multiple specimens with a short turnaround time (as would be needed for severely ill, hospitalized patients)

As of April 2009, HHS/NIH/NIAID continued to support a comprehensive diagnostics research and development program that spans a broad spectrum of projects, from emerging technologies such as nanotechnology, to advanced product development of established technologies and platforms to improve

diagnostic preparedness. In fiscal year 2008, HHS/NIH/NIAID supported the advanced product development of several platforms including PCR, immunoassay, and microarray detection technologies to diagnose a wide variety of infectious diseases, including both seasonal and pandemic influenza. In a related effort, HHS/CDC supports a repository of influenza viruses for use by academic and industrial researchers.

6.1.17.4. In Progress

HHS shall increase access to standardized influenza reagents for use in influenza tests and research, within 6 months. Measure of performance: standardized influenza reagents distributed to domestic and international partners within 3 business days of a request.

In 2008, an Influenza Reagent Resource contract was awarded to ATCC. One component of this contract is the establishment and maintenance of a standardized reagent stockpile for distribution with domestic partners during a pandemic within 3 days of request. As of April 2009, discussions had been underway to establish a similar process with international partners.

6.2.1.1. Complete

HHS shall provide guidance to public health and clinical laboratories on the different types of diagnostic tests and the case definitions to use for influenza at the time of each pandemic phase. Guidelines for the current pandemic alert phase will be disseminated within 3 months. Measure of performance: dissemination on www.flu.gov and through other channels of guidance on the use of diagnostic tests for H5N1 and other potential pandemic influenza subtypes.

HHS disseminated updated guidelines on diagnostic testing for avian influenza A (H5N1) virus and other potential pandemic influenza subtypes in June 2006. “[Updated Interim Guidance for Laboratory Testing of Persons with Suspected Infection with Avian Influenza A \(H5N1\) Virus in the United States](#)” was prepared in collaboration with the Council of State and Territorial Epidemiologists (CSTE), the Infectious Diseases Society of American (IDSA), and other partners. It includes a case definition for suspected U.S. cases of human infection with avian influenza A (H5N1) to help decide when and how laboratory testing should be done. The guidelines have been posted on the internet and distributed to public health and medical partners via the Health Alert Network.

6.2.1.2. Complete

HHS shall ensure that testing by reverse transcriptase-polymerase chain reaction (RT-PCR) for H5N1 and other influenza viruses with pandemic potential is available at LRN laboratories and CDC within 3 months. Measure of performance: RT-PCR for H5N1 and other potential pandemic influenza subtypes and strains in use at CDC and LRN laboratories.

All members of the U.S. Laboratory Response Network (LRN)—which includes State public health laboratories—have the capacity to perform tests using the real-time reverse transcriptase-polymerase chain reaction (rRT-PCR) technique. Reagents and protocols for rRT-PCR testing for H5N1 influenza have been distributed to 99 LRN laboratories across the country. Laboratory protocols for other influenza A subtypes with pandemic potential can be made available, as needed.

A five-target rRt-PCR testing assay developed by HHS/CDC and Applied Biosystems (ABI) has been approved by the FDA. This platform, including reagent, and procedures, has been distributed to all public health laboratories including those participating in LRN. The test will enable public health laboratories to diagnose H5N1 and circulating seasonal influenza strains, as well as identify novel influenza strains with pandemic potential.

6.2.1.3. Complete

HHS, in coordination with DOD, VA, USDA, DHS, EPA, and other partners, in collaboration with its LRN Reference Laboratories, shall be prepared within 6 months to conduct laboratory analyses to detect pandemic subtypes and strains in referred specimens and conduct confirmatory testing, as requested. Measure of performance: initial testing and identification of suspect pandemic influenza specimens completed at LRN Reference and National Laboratories within 24 hours.

LRN laboratories in all 50 States are prepared to conduct initial or confirmatory testing of suspected pandemic strains within 24 hours of receipt, using real-time reverse transcriptase-polymerase chain reaction (rRT-PCR) primers and probes developed and validated at CDC. Reagents and protocols for testing for H5N1 influenza have been distributed to 99 LRN laboratories throughout the country. Laboratory protocols for other influenza A subtypes with pandemic potential can be made available, as needed.

Through the Integrated Consortium of Laboratory Networks, several other laboratories--including facilities operated by the Department of Defense, the Department of Veterans Affairs, the U.S. Department of Agriculture, and the Department of Homeland Security--are also prepared to detect pandemic subtypes and strains in referred specimens and to conduct confirmatory testing. Although EPA is an active member of the Integrated Consortium of Laboratory Networks, EPA currently does not have the laboratory capability to detect pandemic subtypes and strains in referred specimens or to conduct confirmatory testing and does not plan to develop this capacity; therefore, EPA will not conduct such laboratory analyses.

6.2.2.1. Complete

HHS shall be prepared to provide ongoing information from the national influenza surveillance system on the pandemic's impact on health and the health care system, within 6 months. Measure of performance: surveillance data aggregated and disseminated every 7 days, or as often as the situation warrants, to DHS, Sector-Specific Agencies, and State, territorial, tribal, and local partners.

As of April 2009, HHS/CDC aggregates and disseminates influenza data to national and domestic partners on a weekly basis. There is a time lag of at least a week between data collection and reporting to allow CDC to compile and analyze each week's data. During an influenza pandemic, HHS/CDC would disseminate data on a more frequent basis, if needed.

6.2.2.2. In Progress

HHS, in coordination with Federal, State, local, tribal, and private sector partners, shall develop real-time (same-day) tracking capabilities of pneumonia or influenza hospitalizations and influenza deaths to enhance its surveillance capabilities at the onset of and during a pandemic, within 12 months. Measure of performance: real-time (same-day) nationwide hospital census and mortality tracking system is operational for use during a pandemic.

Hospital Census Tracking System: As part of the grants to states in the HHS/ASPR Hospital Preparedness Program (HPP), states are required to complete development of an operational bed tracking, accountability and availability system compatible with the data standards and definitions of the Hospital Available Beds for Emergencies and Disasters (HAvBED) system (www.ahrq.gov/prep/havbed/). HAvBED tracks Ward/Medical/Surgical Beds (including pediatric beds), Intensive Care Unit (ICU) Beds (including pediatric beds), and other Hospital Beds including negative pressure/isolation beds, operating rooms, psychiatric beds, and burn beds.

As of April 2009, HHS had ongoing collaboration with States to support implementation of their HAvBED requirement; HHS has disseminated a HAvBED User's Guide and also established a Help Desk (email and phone) for questions and issues. A nationwide test of the HAvBED system was conducted in March 2009.

Lessons observed were incorporated into system upgrades. The HAvBED system has been utilized in exercise, national special security events, and response to actual events.

Mortality Data Tracking System: As of April 2009, HHS/CDC was pursuing two approaches (long-term and short-term) for improving nationwide capacity to collect and analyze mortality data during a pandemic.

The long-term solution—nationwide establishment of a system for electronic reporting of death certificates—was underway as of April 2009. Currently, 33 registration jurisdictions have EDRs either in place (25) or in development (8). If a pandemic were to occur before this system is fully implemented, HHS/CDC had plans in April 2009 to use existing mechanisms for collecting public health data, including daily death counts from State and large local health departments and daily reports from member sites of the 122 Cities Mortality Reporting System, which collects death-certificate data on pneumonia- and influenza-related deaths.

6.2.2.3. Complete

HHS, in coordination with DOD and VA, shall expand the number of hospitals and cities participating in the BioSenseRT program to improve the Nation's capabilities for disease detection, monitoring, and situational awareness within 12 months. Measure of performance: number of hospitals (including DOD and VA facilities) participating in the BioSenseRT program increased to 350 hospitals in 42 cities.

As of April 2009, more than 550 non-Federal acute-care hospitals ("BioSense Hospitals") were sending emergency department chief complaint data to the BioSense program, and some also send additional data on outpatients and hospital inpatients. At least one BioSense Hospital was sending real-time data from each of the ten HHS regions. In addition, DOD outpatient facilities (440) and VA outpatient facilities (820) send data. DOD and VA use centralized medical databases, so all participating DOD and VA healthcare facilities joined the BioSense project at the same time.

6.2.2.4. Complete

HHS shall reduce the time between reporting of virologic laboratory data from State, local, tribal, and private sector partners and collation, analysis, and reporting to key stakeholders, within 6 months. Measure of performance: time delay between receipt of data and collation, analysis, and reporting of results of 7 days or less.

As of April 2009, HHS/CDC had the ability to collate, analyze, and report results within seven days of receipt. In addition, at that time, HHS/CDC was in the process of identifying potential ways of improving the electronic transfer of laboratory data between HHS/CDC and State public health laboratories.

6.2.2.5. Complete

HHS shall increase the frequency of reporting and the number and geographic location of reporting health care providers from which outpatient surveillance data are collected through the Sentinel Provider Network (SPN), the Emerging Infections Program (EIP) influenza project, and the New Vaccine Surveillance Network (NVSN), within 6 months. Measure of performance: number of reporting healthcare providers increased to one or more per 250,000 population.

The Sentinel Provider Network (SPN) includes approximately 2,300 healthcare providers nationwide who report the number of weekly outpatient visits for influenza-like illness (ILI) and submit specimens to State public health laboratories for influenza virus testing. This information helps HHS/CDC detect emerging influenza strains and monitor disease patterns.

The number of regularly reporting sentinel providers reached the national goal of one or more providers per 250,000 population during the 2005-06 flu season.

6.2.2.6. In Progress

HHS shall improve the speed at which it performs mortality surveillance through the 122 Cities Mortality Reporting System within 3 months. Measure of performance: mortality data collected at CDC within 1 week of decedent's demise increased by 25 percent compared with 2005.

As of April 2009, the 122 Cities Mortality Reporting System was the most timely source of mortality data in the United States, providing information on approximately one-quarter of deaths occurring in the country within 1-2 weeks of date of death: wonder.cdc.gov/mmwr/mmwrmort.asp. The completeness of reporting was 97-98 percent at that time, with approximately 120 cities reporting each week.

6.2.2.7. In Progress

DHS, in collaboration with HHS, DOD, VA, USDA and other Federal departments and agencies with biosurveillance capabilities and real-time data sources, will enhance NBIS capabilities to ensure the availability of a comprehensive and all-source biosurveillance common operating picture throughout the Interagency, within 12 months. Measure of performance: NBIS provides integrated surveillance data to DHS, HHS, USDA, DOD, VA, and other interested interagency customers.

The National Biosurveillance Integration System (NBIS) became fully operational on September 30, 2008 with its featured product, a biosurveillance common operating picture (BCOP) being fielded at that time. During the period 2008 and 2009, NBIC has received detailees from HHS/CDC and USDA. By incorporating information from multiple sources across the biosurveillance domains identified by PL 110-53, NBIS and its BCOP supports several major objectives: 1) allow for information sharing and collaboration among partners; 2) enable early recognition of biological events; and 3) provide situational awareness to inform decision making and response by the President, the Secretary of Homeland Security, and the heads of other Federal departments and agencies when they are the lead Federal entity

Additionally, the Biosurveillance Common Operating Network (or BCON) now injects reports from more than 13,400 sources (including ARGUS) spanning more than 40 languages to produce a draft production (or information) document with which the NBIS analysts begin their daily assessment of overnight bio events. BCON also enables the NBIS analysis to automate some key steps of its analytic processes. NBIS is also technically capable and administratively positioned (via an Information Sharing Agreement) to receive eLEXNET information from the FDA into its daily data feeds. Further, an NBIC Portal resides on the HSIN (Homeland Security Information Network), operated by the National Operations Center (NOC) to post NBIS products and exchange analysis by accessing the aforementioned BCOP.

Specific interagency functional and user needs have been addressed through the development of an interagency or NBIS Concept of Operations or CONOPS. CONOPS version 2.0 is now being staffed at the interagency level among appropriate departments. NBIC has also developed and publishes a group of Standardized Daily Reports focused on global general disease events and their impact on homeland security. Real world biological-related events of national significance (melamine, Salmonella stpaul, other food safety/potential food security events) have led to the development of SITREPS, SPOT Reports and CIKR Impact Assessments for dissemination to NBIS partners and DHS components during 2009.

Finally, in 2009, NBIC commenced pilot outreach programs to the State-Local-Territorial-Tribal communities through the DHS-supported Fusion Center concept as well as select academic institutions, international health entities and 5 key infrastructure sectors within the CIKR domain.

6.2.2.8. Complete

HHS, in coordination with DHS, DOD, and VA, and in collaboration with State, local, and tribal authorities, shall be prepared to collect, analyze, integrate, and report information about the status of hospitals and health care systems, health care critical infrastructure, and medical materiel requirements, within 12 months. Measure of performance: guidance provided to States and tribal entities on the use and modification of the components of the National Hospital Available Beds for Emergencies and Disasters (HAvBED) system for implementation at the local level.

As part of its Hospital Preparedness Program guidance, HHS provides guidance to the States to require complete development of an operational bed tracking, accountability/availability system compatible with the HAvBED data standards and definitions.

HHS FY 2008 and 2009 guidance to States directed that “systems must be further developed to submit required data using one of two mechanisms:

1) Awardees may choose to use the HAvBED web-portal to manually enter the required aggregate data, reported to the State by participating hospitals; and 2) Awardees may use existing systems to automatically transfer required data to the HAvBED server using the [HAvBED EDXL Communication Schema](#).

Regardless of the mechanism chosen by the State to report data, it must adhere to requirements and definitions included in the appendices of this funding opportunity.

6.2.2.9. Complete

DOD shall enhance influenza surveillance efforts within 6 months by: (1) ensuring that medical treatment facilities (MTFs) monitor the Electronic Surveillance System for Early Notification of Community-based Epidemics (ESSENCE) and provide additional information on suspected or confirmed cases of pandemic influenza through their Service surveillance activities; (2) ensuring that Public Health Emergency Officers (PHEOs) report all suspected or actual cases through appropriate DOD reporting channels, as well as to CDC, State public health authorities, and host nations; and (3) posting results of aggregated surveillance on the DOD Pandemic Influenza Watchboard; all within 18 months. Measure of performance: number of MTFs performing ESSENCE surveillance greater than 80 percent; DOD reporting policy for public health emergencies, including pandemic influenza completed.

The Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) monitoring by MTFs and Service surveillance hubs is in place and operating (also see 4.2.2.5.).

Approximately 800 ESSENCE user accounts have been established across DOD and all Services have issued appropriate implementing guidance. The Assistant Secretary of Defense for Health Affairs issued policy on January 17, 2007, mandating at least two ESSENCE monitors at each installation and the Services are working to implement this policy. In addition, monitoring is conducted at the three Service Public Health Centers (Service Centers) as well as in DOD Health Affairs. These four surveillance centers monitor ESSENCE every workday for alerts that might suggest an increase in the incidence of influenza-like illness. The Service Centers monitor all medical treatment facilities within their respective Services and Health Affairs monitors all medical treatment facilities throughout the Military Health System, including Coast Guard facilities.

These monitoring activities not only provide back-up redundancy for detecting outbreaks of disease at the local installation level, but they also are capable of detecting regional outbreaks that may not be apparent at the local level. Long-standing policies and regulations for reportable diseases (including influenza and outbreaks of emerging or reemerging infections) remain in effect. DOD policy regarding pandemic influenza

reporting and notification protocols for Public Health Emergency Officers is in final coordination and should be completed by June 2009. Information is placed on the DOD Pandemic Influenza Watchboard as appropriate. The DOD Pandemic Influenza Watchboard is updated continuously.

6.2.3.1. Complete

HHS, in coordination with DHS and DOD, shall work with pharmaceutical and medical device company partners to develop and evaluate rapid diagnostic tests for novel influenza subtypes including H5N1 within 18 months. Measure of performance: new investment in research to develop influenza diagnostics; new rapid diagnostic tests, if found to be useful, are available for influenza testing, including for novel influenza subtypes.

As of April 2009, HHS invested in applied research to advance development and to facilitate evaluation of new and innovative influenza diagnostics, including diagnostic tests and devices that can distinguish seasonal influenza strains from novel strains such as H5N1. These include point-of-care tests for use in clinics and physicians' offices; diagnostic devices for use in hospital laboratories; and highly-specific tests based on nucleic acid amplification for use in public health laboratories. HHS investments were made in accordance with a national diagnostic strategy developed by an interagency Diagnostic Working Group that includes representation from HHS, DHS, DOD, and the VA. Products are in varying stages of development. HHS/FDA issued new guidance for evaluating performance and continues to provide early advice to developers on HHS/FDA regulatory pathways. Plans were in place as of April 2009 to enable further evaluations of point-of-care tests in regions with high avian influenza endemicity.

As of April 2009, HHS/NIH/NIAID was supporting research at Los Alamos National Lab to develop a new technology to detect nucleic acid sequences from a variety of respiratory viruses, including various influenza and avian subtypes. The technology, which is in the early stages of development, would use a simple "dipstick" technique--after sample processing, a small specially-treated strip would be dipped into the sample. Changes in the appearance of the strip would reveal the results in a very short period of time. If successful, this method promises to be field-portable, fast, and inexpensive. Diagnostics research is also being conducted using multiplex platform technologies.

6.2.3.2. Complete

HHS, in coordination with DHS, DOD, and VA, shall compile an inventory of all research and product development work on rapid diagnostic testing for influenza and shall reach consensus on sets of requirements meeting national needs and a common test methodology to drive further private-sector investment and product development, within 6 months. Measure of performance: inventory developed and requirements paper disseminated.

A partnership of Federal departments and agencies developed an inventory of research and development work on rapid diagnostic testing for influenza and disseminated a set of technical requirements for further product development. A two-day interagency workshop on "Rapid Diagnosis for Detection of Novel Human Influenza Viruses" was held in April 2008. A summary of conclusions and recommendations was issued in June 2008.

6.2.3.3. In Progress

HHS, in coordination with DOD, VA, and DHS, shall encourage and expedite private-sector development of rapid subtype- and strain-specific influenza point-of-care tests within 12 months of the publication of requirements. Measure of performance: rapid point-of-care test available in the marketplace within 18 months.

HHS has awarded contracts to biotechnology and device companies to develop a device prototype for a rapid point-of-care test, which have undergone an independent evaluation. As of April 2009, two contractors were conducting clinical evaluations; accruing sufficient data for HHS/FDA approval will depend on the duration (and intensity) of the influenza season in addition to the appropriate performance of the new tests. The duration and outcome of HHS/FDA review will depend on issues raised and quality of data/information presented by the Contractors. Plans were in place in April 2009 to enable further field evaluations of new point-of-care tests in avian influenza endemic regions, once they are available for commercial distribution, or as investigational devices.

As part of this effort, HHS/CDC has also issued contracts to:

Produce viral reagents to support development of point-of-care tests

Conduct independent government evaluation of the new point-of-care prototype tests.

HHS/NIH/NIAID continues to support the production of influenza reagents, which are made available to the scientific community for use in research and product development through centralized repositories such as the Biodefense and Emerging Infectious Research Resources Repository (BEI) (www3.niaid.nih.gov/research/resources/dmid/bei), and the Pathogen Functional Genomics Resource Center (PFGRC) (www3.niaid.nih.gov/research/resources/pfgrc).

6.2.4.1. Complete

HHS, in coordination with DHS, DOD, VA, USDA, and DOS, shall be prepared, within 12 months, to continuously evaluate surveillance and disease reporting data to determine whether ongoing disease containment and medical countermeasure distribution and allocation strategies need to be altered as a pandemic evolves. Measure of performance: analyses of surveillance data performed at least weekly during an outbreak with timely adjustment of strategic and tactical goals, as required.

As of April 2009, HHS/CDC evaluated influenza data on a weekly basis, taking into account all components of the national influenza surveillance system, including hospital and outpatient surveillance for flu-like illness, adult and childhood deaths from respiratory disease, State-level assessments of influenza activity, and laboratory-based surveillance to monitor new strains of influenza virus. During an influenza pandemic, HHS/CDC planned, as of April 2009, to evaluate surveillance data on a more frequent basis, as needed, and use it to guide rapid response efforts, including regional countermeasure distribution and local implementation of community mitigation strategies. There is a time lag of at least a week between data collection and reporting to allow CDC to compile and analyze each week's data.

USDA, in partnership with other Federal and State agencies and the commercial poultry industry, conducts surveillance for and early detection of highly pathogenic avian influenza (HPAI) viruses, including Asian HPAI H5N1 viruses, as well as low pathogenic avian influenza (LPAI) viruses. Avian populations under surveillance include the domestic poultry population (commercial poultry, live bird markets, and backyard poultry) and wild migratory waterfowl and shorebirds. During an influenza pandemic, and dependent on the pandemic strain, the USDA, in partnership with other Federal and State agencies and animal industries, will develop or enhance and evaluate influenza data in appropriate susceptible animal species on a more frequent basis and will adjust strategic and tactical goals as needed.

6.2.4.2. Complete

DHS, in coordination with Sector-Specific Agencies, HHS, DOD, DOJ, and VA and in collaboration with the private sector, shall be prepared to track integrity of critical infrastructure function, including the health care sector, to determine whether ongoing strategies of ensuring workplace safety and

operational continuity need to be altered as a pandemic evolves, within 6 months. Measure of performance: tracking system in place to monitor integrity of critical infrastructure function and operational continuity in near real time.

The IT Architecture/Platform for the tracking system to monitor the integrity of critical infrastructure function and operational continuity in near real time is completed. DHS, in coordination with Sector-Specific Agencies, Federal partners, and the private sector is developing the data and reporting requirements using modeling and expert panels.

The National Infrastructure Coordinating Center (NICC) utilizes its INSight capability to support near real-time information collection, tracking, and collaboration with CI/KR owners and operators, including the health care sector. This web based architecture meets the requirement for near real-time data depending on the end user entry of data. This architecture is compatible with the DHS Common Operating Picture (COP) Platform so that information from this system can be integrated into the COP.

6.2.4.3. Complete

DOD and VA shall be prepared to track and provide personnel and beneficiary health statistics and develop enhanced methods to aggregate and analyze data documenting influenza-like illness from its surveillance systems within 12 months. Measure of performance: influenza tracking systems in place and capturing beneficiary clinical encounters.

The Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) collects and analyzes outpatient data for all TRICARE beneficiaries, not just active duty military members. Steps are underway to incorporate a near-real-time method for tracking Military Treatment Facility admissions (also see 4.2.2.5.). The Armed Forces Health Surveillance Center has a methods development group planning and evaluating PI-related enhancements to ESSENCE. The DOD has also started collaborating with the VA (which also uses ESSENCE for syndromic surveillance) about sharing health event data with each other in order to establish a more complete national common operating picture between these two agencies.

VA's existing national electronic medical record allows for tracking of some patient statistics. To improve surveillance and ease data collection, VA is developing a national healthcare-associated infection and influenza surveillance system (HAISS) in collaboration with HHS/CDC and building on ESSENCE. This surveillance system will be fully automated and will work from the VA electronic health record system. A prototype will be developed first and will then be implemented in two VA test sites. The third step will be for VA to expand the system to 15 VA hospitals that currently report data to the HHS/CDC National Health Safety Network and finally to the entire VA healthcare system. A national system to track employee and staff health statistics, called the Occupational Health Record-Keeping System (OHRs), is in early development. Patient and staff member privacy and confidentiality will be protected with both of these systems.

6.2.5.1. Complete

HHS, in coordination with DOD and DHS, shall develop and maintain a real-time epidemic analysis and modeling hub that will explore and characterize response options as a support to policy and decision makers within 6 months. Measure of performance: modeling center with real-time epidemic analysis capabilities established.

The DOD Defense Threat Reduction Agency (DTRA) has an established operational center that uses modeling and subject matter experts to provide a substantial "reachback" capability to provide rapid turnaround technical analyses to military users worldwide (including NORTHCOM, which has responsibilities in the continental United States), and to support exercises. As of April 2009, DTRA's center provides some

medical and public health analysis capabilities, used within DOD. These DTRA capabilities are supported by modeling tools that include software originally written for military casualty estimation and treatment needs estimation, plus software that originates in DHS and in HHS (including the HHS/CDC's FluSurge). As of April 2009, DTRA's center was in the process of bringing on board an HHS/NIH-supported modeling package to be used for pandemic influenza intervention analysis. The DTRA center already supports a small number of Federal agencies outside DOD. Initial discussions between DTRA and HHS/ASPR/BARDA have taken place with the goal of providing near term civilian epidemic intervention analysis capability, with the possible use of additional HHS modeling and analysis tools and data sources. With the existing DTRA center as a starting point, together with existing internal proposals, HHS, DOD and DHS had begun a coordination and planning process by April 2009 to establish a real-time epidemic analysis capability outside the DOD, focused on public health and emergency preparedness.

6.3.2.1. Complete

HHS, in coordination with DHS, DOT, Education, DOC, DOD, and Treasury, shall provide State, local, and tribal entities with guidance on the combination, timing, evaluation, and sequencing of community containment strategies (including travel restrictions, school closings, snow days, self-shielding, and quarantine during a pandemic) based on currently available data, within 6 months, and update this guidance as additional data becomes available. Measure of performance: guidance provided on community influenza containment measures.

The Community Mitigation Strategy for Pandemic Influenza was developed by HHS/CDC, working in consultation with other Federal agencies, State and local health departments, the Institute of Medicine, professional societies, mathematical modelers, ethicists, historians, and others. The Strategy provides guidance on early, targeted, layered use of selected non-pharmaceutical interventions that may be appropriate for some influenza pandemics, such as voluntary isolation of persons with an influenza-like illness that may be due to a pandemic influenza strain; voluntary quarantine of household contacts of ill persons; dismissal of classes for school-age children and closure of child care facilities; and implementation of social distancing measures for adults. These interventions may be major tools in slowing disease spread, especially during the early days of pandemic, before pandemic vaccine is available.

The Department of Education (DOE) has provided guidance to State and local educational agencies on coordinating the dismissal of students from schools and on continuing education during prolonged school closures. DOE guidance for education planners, including minimum planning components for inclusion in school pandemic plans, has been posted at www.ed.gov/emergencyplan/pandemic. DOE guidance for State planners has been provided as part of [State Planning Guidance](#), as part of the HHS-hosted Plan First Webinar series, and through a video teleconference in May 2008.

6.3.2.2. Complete

HHS shall provide guidance on the role and evaluation of the efficacy of geographic quarantine in efforts to contain an outbreak of influenza with pandemic potential at its source, within 3 months. Measure of performance: guidance available within 72 hours of initial outbreak.

As of April 2009, HHS planned to provide guidance on community mitigation measures within 72 hours of an initial outbreak of pandemic influenza. However, HHS/CDC is unlikely to recommend geographic quarantine as a containment strategy. Geographic quarantine means isolating communities that are affected by the disease (but which contain many people who have not been exposed to the pandemic virus) from communities that are not affected. Generally, geographic quarantine is unlikely to be recommended because there is no need to quarantine people who have not been exposed. Instead of geographic quarantine, HHS/CDC will recommend voluntary home quarantine of members of households with a person with

confirmed or probable influenza, as described in the [Community Mitigation Strategy for Pandemic Influenza](#).

6.3.2.3. Complete

HHS, in coordination with DHS and DOD and in collaboration with mathematical modelers, shall complete research identifying optimal strategies for using voluntary home quarantine, school closure, snow day restrictions, and other community infection control measures, within 12 months. Measure of performance: guidance developed and disseminated on the use of community control.

The Community Strategy for Pandemic Influenza Mitigation (<http://www.flu.gov/professional/community/commitigation.html>) provides guidance on community disease control measures such as:

- Voluntary isolation of persons with an influenza-like illness;
- Voluntary quarantine of household contacts of ill persons;
- Potential dismissal of classes for school-age children, closure of child care facilities, and measures to prevent congregation of children outside of school, if appropriate;
- Institution of work-place and community social distancing measures for adults, for appropriate situations.

The Community Strategy includes Planning Guides for Individuals and Families, Elementary and Secondary Schools, Childcare Programs, Colleges and Universities, Faith-based and Community Organizations, and Businesses and Other Employers.

6.3.2.4. Complete

As appropriate, DOD, in consultation with its COCOM commanders, shall implement movement restrictions and individual protection and social distancing strategies (including unit shielding, ship sortie, cancellation of public gatherings, drill, training, etc.) within their posts, installations, bases, and stations. DOD personnel and beneficiaries living off-base should comply with local community containment guidance with respect to activities not directly related to the installation. DOD shall be prepared to initiate within 18 months. Measure of performance: the policies/procedures are in place for at-risk DOD posts, installations, bases, stations, and for units to conduct an annual training evaluation that includes restriction of movement, shielding, personnel protection measures, health unit isolation, and other measures necessary to prevent influenza transmission.

The Department of Defense issued Guidelines for Community Disease Containment as part of Pandemic Influenza Clinical and Public Health Guidelines for the Military Health System in April 2007. A new draft DOD Instruction on "Public Health Emergency Management" was ready for formal coordination during the summer of 2008. This guidance will be consistent with International Health Regulations and published Interim HHS/CDC Community Mitigation Guidelines. Using all the guidelines listed above, the Services and the Defense Agencies completed their plans in the summer of 2008.

6.3.2.5. Complete

All HHS-, DOD-, and VA-funded hospitals and health facilities shall develop, test, and be prepared to implement infection control campaigns for pandemic influenza, within 3 months. Measure of performance: guidance materials on infection control developed and disseminated on www.flu.gov and through other channels.

Guidance on hospital infection control during an influenza pandemic is provided in Supplement 4 of the [HHS Pandemic Influenza Plan](#). The supplement includes recommendations for infection control in healthcare settings and provides information on basic infection control principles, management of infectious patients, and

infection control practices for healthcare personnel. HHS also posted supplementary information on the use of personal protective equipment (PPE) on www.flu.gov ([Interim Guidance on Planning for the Use of Surgical Masks and Respirators in Health Care Settings during an Influenza Pandemic](#)).

Additional guidance for healthcare facilities created before April 2009 may be found in:

The VA "[Infection, Don't Pass it On](#)" campaign, which has been active since 2004.

[DOD Pandemic Influenza: Clinical and Public Health Guidelines for the Military Health System](#), October 2008.

6.3.2.7. Complete

HHS, in coordination with DHS, DOC, DOL, and Sector-Specific Agencies, and in collaboration with medical professional and specialty societies, shall develop and disseminate infection control guidance for the private sector, within 12 months. Measure of performance: validated, focus group-tested guidance developed, and published on www.flu.gov and in other forums.

By April 2009, infection control guidance for use during an influenza pandemic were developed for many private sector stakeholders, including:

[Businesses](#)

[Healthcare Workers](#)

[Agricultural workers](#)

[Educators](#)

[Airline workers](#)

Guidance documents for these groups were developed by HHS/CDC, OSHA/DOL, USDA, DHS, DOS, and DOC, in association with medical and professional societies—including the Association of State and Territorial Health Officials (ASTHO), Council of State and Territorial Epidemiologists (CSTE), Infectious Disease Society of America (IDSA), and the National Association of City and County Health Officials (NACCHO)—and other non-governmental partners.

Banking and Finance Sector business continuity pandemic planning guidance has been issued by the [Federal Financial Institutions Examination Council](#). In September 2007, the Financial and Banking Infrastructure Information Committee and Financial Services Sector Coordinating Council conducted a joint, sector-wide three-week pandemic exercise and issued an after-action report that is posted at www.fspanfluexercise.com.

6.3.3.1. Complete

HHS, in coordination with DHS, VA, and DOD, shall develop and disseminate guidance that explains steps individuals can take to decrease their risk of acquiring or transmitting influenza infection during a pandemic, within 3 months. Measure of performance: guidance disseminated on www.flu.gov and through VA and DOD channels.

HHS developed guidance that explains steps individuals can take to decrease their risk of acquiring or transmitting influenza infection during a pandemic. Guidance products are posted on www.flu.gov and disseminated through medical and public health partners, as well as through interagency channels, including the websites of the Department of Defense and the Department of Veterans Affairs. Communications tools

were also developed to assist States and localities in providing public health information before and during a pandemic. These include public service announcements and standardized public health messages.

6.3.3.2. Complete

HHS, in coordination with DHS, DOD, VA, and DOT and in collaboration with State, local, and tribal partners, shall develop and disseminate lists of social distancing behaviors that individuals may adopt within 6 months and update guidance as additional data becomes available. Measure of performance: guidance disseminated on www.flu.gov and through other channels.

Information on social distancing behaviors for different audiences is included in the planning guides of the Community Mitigation Strategy for Pandemic Influenza (appendices 4 – 9). The Planning Guides address the needs of:

Businesses and Other Employers

Childcare Programs

Elementary and Secondary Schools

Colleges and Universities

Faith-Based and Community Organizations

Individuals and Families

The HHS/CDC guidance is incorporated and referenced in the DOD practice guidelines and has been used to develop measures to be employed in more austere operational settings.

6.3.4.2. Complete

HHS, in coordination with DHS, DOD, and VA, and in collaboration with States, localities, tribal entities, and private sector health care facilities, shall develop strategies and protocols for expanding hospital and home health care delivery capacity in order to provide care as effectively and equitably as possible, within 6 months. Measure of performance: guidance and protocols developed and disseminated.

Numerous strategy documents and protocols for expanding hospital and home health care delivery capacity were developed and disseminated by April 2009 including the Medical Surge Capacity and Capability Handbook, the report: Reopening Shuttered Hospitals to Expand Surge Capacity, Health Emergency Assistance Line and Triage Hub (HEALTH) Model, Project XTREME: Cross-Training Respiratory Extenders for Medical Emergencies, Hospital Preparedness and Home Health Care Services Checklists, Community Planning Guide for the Allocation of Scarce Resources and Home Health Care During an Influenza Pandemic: Issues and Resources, all of which are available on www.flu.gov.

By April 2009, HHS/CDC conducted a series of cross-sector workshops on models of healthcare delivery and the process for standing up alternate care systems at the community level during a severe influenza pandemic. Approximately 12 sectors are participating in each of the workshops including emergency departments and hospital administrators, public health, emergency management, emergency medical services, and home health.

HHS/CDC is using information from these workshops to develop tools and templates for local planners,

including:

Community Planner's Tool, to help organize the planning effort at the local level.

Community Assessment Tool, to evaluate the capabilities of the community healthcare sector.

"Pan Flu Scramble" Game/Activity, to aid healthcare sectors and partners in assessing their readiness.

Discussion guides, to assist focus groups or small teams in identifying major issues in their communities.

6.3.4.3. In Progress

HHS shall work with State Medicaid and SCHIP programs to ensure that Federal standards and requirements for reimbursement or enrollment are applied with the flexibilities appropriate to a pandemic, consistent with applicable law. Preliminary strategies shall be developed within 6 months. Measure of performance: draft policies and guidance developed concerning emergency enrollment in and reimbursement through State Medicaid and SCHIP programs during a pandemic.

Prior to April 2009, HHS held meetings with State Medical Directors, who confirmed that existing Medicaid and State Children's Health Insurance Program (SCHIP) flexibilities were sufficient to meet their needs in the event of pandemic influenza. Related to Medicare, pandemic-specific policies, frequently asked questions and instructions to contractors have been issued to providers and contractors. Questionnaires were issued to State Survey Agencies to gather current contact, emergency policies and procedures, and IT capability (including provider tracking and reporting capability) information. A Survey & Certification emergency preparedness stakeholder communications forum was established, which includes representatives from State Survey Agencies, provider associations, accreditation organizations, and resident/patient advocates. Regular teleconferences were held to discuss recommendations and improvements for robust, effective, and integrated, governmental and provider emergency planning, communications, and response requirements procedures. These procedures as well as helpful resources and tools have been developed and posted on the CMS Website at: www.cms.hhs.gov/SurveyCertEmergPrep/

6.3.4.4. Complete

DHS assets, including NDMS medical materiel and mobile medical units, and HHS assets, such as the USPHS Commissioned Corps and FMSs, shall be deployed in a manner consistent with pre-defined strategic considerations. Measure of performance: development, within 6 months, of strategic principles for deployment of Federal medical assets in a pandemic; consistency of deployments during a pandemic with these principles.

Prior to April 2009, HHS developed a plan entitled "Emergency Support Function #8 Pandemic Influenza Playbook." This playbook describes the public health and medical capabilities the Federal Government will bring to bear to support the National response to a severe pandemic influenza, including NDMS, the USPHS Commissioned Corps, and the FMS. It also describes the strategic utilization plan for Federal Emergency Support Function #8 assets. By April 2009, these strategic principles had been tested in multiple exercises.

6.3.4.6. Complete

HHS shall deploy the USPHS Commissioned Corps and FMSs, if available and in combination or separately as circumstances warrant, to augment efforts of State/local governments as part of the Federal response. Measure of performance: USPHS Commissioned Corps personnel trained on FMSs within 9 months; Commissioned Corps personnel and FMSs deployed within 72 hours of order to mobilize during a pandemic.

Five Rapid Deployment Force (RDF) Teams of 105 officers each completed initial training with a component of the Federal Medical Stations (FMS) in 2006. The teams have been pre-identified, rostered, trained, and equipped for service. The first event requiring this resource to be deployed was Tropical Storm Ernesto in August 2006. RDF#2 team was deployed to provide medical support at President Ford's State Funeral in December 2006, a designated National Special Security Event. The RDF was on station within 48 hours of notification. RDF#2 medical strike teams provided the primary medical support at three medical treatment tents.

HHS's Office of Force Readiness and Deployment (OFRD) conducted advanced field training for all RDF teams as well as all Applied Public Health Teams (APHT) and Mental Health Teams (MHT) in Summer 2007. The field training combined didactic and experiential sessions in an austere setting, focusing on the establishment and operations of an FMS. The field training proved essential during the subsequent deployment of RDF#1, RDF#2, and RDF#3 during the responses to Hurricane Gustav and Hurricane Ike in September 2008, during which seven separate FMSs were staffed in three different States. These deployments were augmented with officers from Mental Health Teams as well as officers from Tier III rosters. The RDFs were deployed by charter aircraft within 12 hours of notification to deploy and on-station conducting operations in under 24 hours.

6.3.4.7. Complete

DOD shall enhance its public health response capabilities by: (1) continuing to assign epidemiologists and preventive medicine physicians within key operational settings; (2) expanding ongoing DOD participation in CDC's Epidemic Intelligence Service (EIS) Program; and (3) within 18 months, fielding specific training programs for PHEOs that address their roles and responsibilities during a public health emergency. Measure of performance: all military PHEOs fully trained within 18 months; increase military trainees in CDC's EIS program by 100 percent within 5 years.

All Services routinely place public health and/or preventive medicine professionals at military installations. All Public Health Emergency Officers (PHEOs) are assigned to installations or regions and are given training on their roles and responsibilities. A new DOD Instruction, 6200.03 Public Health Emergency Management, provides up-to-date guidance and training requirements to PHEOs and is expected to be published by the end of June 2009.

The United States Air Force routinely (every two years) sends one officer to the Centers for Disease Control and Prevention (CDC) Epidemic Intelligence Service (EIS) training program and some years sends two. The Navy has historically sent one person. Navy Medicine plans to increase the number to two trainees within three years. The Armed Forces Health Surveillance Center expects to develop an epidemiological career path and wants to add EIS graduates to the center's future staff. DOD has averaged 1.5 military trainees over the past five years, and there is a plan for DOD to increase the average number of trainees to three within three years.

6.3.5.1. Complete

HHS, in coordination with DHS, DOL, Education, VA, and DOD, shall develop and disseminate guidance and educational tools that explain steps individuals can take to decrease their risk of acquiring or transmitting influenza infection during a pandemic, within 6 months. Measure of performance: interim guidance disseminated on www.flu.gov and through VA, DOD, and other channels within 3 months; complementary educational tools on social distancing, personal hygiene, mask use, and other infection control precautions developed within 6 months.

By April 2009, USG agencies and partners had developed guidance on steps individuals can take to decrease their risk of acquiring or transmitting influenza infection during a severe influenza pandemic including

[Community Mitigation Strategy for Pandemic Influenza](#). Guidance products developed by HHS/CDC, DOL/OSHA, VA, DOD, and the Department of Education are posted on www.flu.gov and disseminated through medical and public health partners, as well as through interagency channels, including the websites of the Department of Defense and the Department of Veterans Affairs. USG agencies had also developed communications tools to assist States and localities in providing public health information before and during a pandemic. These include public service announcements and standardized public health messages.

6.3.5.2. Complete

HHS, in collaboration with State, local, and tribal governments, shall develop and disseminate recommendations for the use, if any, of antiviral stockpiles for targeted post-exposure prophylaxis in civilian populations, within 3 months. Measure of performance: States, localities, and tribal entities have received recommendations for incorporation into response plans.

Guidance on antiviral drug use for a severe pandemic was published in December 2008, and includes recommendations for prophylaxis of workers who have very high and high risk exposures (generally healthcare and emergency services personnel) for the duration of community pandemic outbreaks and post-exposure prophylaxis of persons who are severely immunocompromised, persons who live in "closed" settings such as nursing homes or prisons if a pandemic outbreak occurs in the facility, and healthcare and emergency services personnel who do not have frequent close contact with pandemic influenza patients. This guidance is available here: www.flu.gov/individualfamily/vaccination/antiviral_use.pdf

6.3.7.1. Complete

HHS, in coordination with DHS, DOD, VA, and DOT, and as the lead for ESF #8, shall identify public health and medical capabilities required to support a pandemic response and work with other supporting agencies to identify and deploy or otherwise deliver the required capability or asset, if available. Measure of performance: inventory of public health and medical capabilities within 6 months; available public health or medical capabilities or assets deployed or delivered during a pandemic.

HHS has developed a plan entitled "Emergency Support Function #8 Pandemic Influenza Playbook." This playbook identifies and describes the public health and medical capabilities the Federal Government will bring to bear to support the National response to a severe pandemic influenza. It also describes the strategic utilization plan for Federal Emergency Support Function #8 assets.

6.3.7.2. Complete

DOD and VA assets and capabilities shall be postured to provide care for military personnel and eligible civilians, contractors, dependants, other beneficiaries, and veterans and shall be prepared to augment the medical response of State, territorial, tribal, or local governments and other Federal agencies consistent with their ESF #8 support roles, within 3 months. Measure of performance: DOD and VA pandemic preparedness plans developed; in a pandemic, adequate health response provided to military and associated personnel.

DOD and VA have influenza plans in place. In a pandemic, adequate health response will be provided to military and associated personnel. Both VA and DOD are authorized to provide health care and medical services to non-VA, non-DOD beneficiaries including military personnel and civilians who are responding to, involved in, or otherwise affected by a disaster or emergency subject to the exercise of authorities such as the Stafford Act and National Disaster Medical System regulations, as well as VA and DOD regulations and agreements. VA and DOD have incorporated the expectation to provide health care to others in their

pandemic plans/guidance and have necessary policies, memoranda of understanding, and directives in place to allow provision of care and services.

6.3.7.3. Complete

VA shall develop draft emergency policies and directives allowing VA personnel and resources to be used for the treatment of non-veteran patients with pandemic influenza within 3 months. Measure of performance: emergency policies and directives drafted.

VA is authorized to provide healthcare and medical services to non-VA beneficiaries who are responding to, involved in, or otherwise affected by a disaster or emergency subject to the exercise of authorities such as the Stafford Act and National Disaster Medical System regulations. These responsibilities are stated in VA's emergency plans and in VA's national pandemic influenza plan. In addition, VA facility leadership has the authority to use VA personnel and resources to respond to humanitarian need in local emergency situations. A statement of this authority also appears in VA's national pandemic influenza plan.

6.3.7.4. Complete

VA shall develop, test, and implement protocols and policies allowing VA personnel and resources to be used for the treatment of non-veteran patients during health emergencies, within 3 months. Measure of performance: protocols and policies developed and implemented.

VA personnel and resources may be used during Stafford Act or other declared emergencies and/or when they are needed for local humanitarian needs in the judgment of facility leadership. These policies are part of national and local VA healthcare facility emergency plans and the VA national pandemic influenza plan. Emergency protocols are exercised frequently at VA facilities. A series of local, regional, and national tabletop exercises on pandemic influenza took place from June 2006 through January 2007, and a national VA exercise took place in June 2008.

6.3.7.5. Complete

DOD shall develop and implement guidelines defining conditions under which Reserve Component medical personnel providing health care in non-military health care facilities should be mobilized and deployed, within 18 months. Measure of performance: guidelines developed and implemented.

In November, 2008, the Under Secretary of Defense for Personnel and Readiness approved a series of recommendations to the Services on using Reserve/Guard medical personnel in the event of a pandemic. These recommendations have been posted to the Department of Defense Pandemic Influenza Watchboard to ensure maximum dissemination.

6.3.8.1. Complete

HHS, in coordination with DHS, DOD, and VA, shall develop and disseminate a risk communication strategy within 6 months, updating it as required. Measure of performance: implementation of risk communication strategy on www.flu.gov and elsewhere.

As of April 2009, the overall USG risk communications principles were based on the principles described in the "World Health Organization's Outbreak Communications Guidelines," which include building trust; making announcements of outbreaks early; communicating in a way that is candid, easy to understand, complete and factually accurate; seeking to understand and respond to the public's beliefs, opinions, and knowledge about the risk; and incorporating communication into preparedness planning.

Effective risk communication guides the public, the news media, health-care providers, and other groups in responding appropriately to outbreak situations and adhering to public health measures. This risk communications strategy was being applied in the development, testing, and distribution of message maps that are used to support public communications in the event of an emergency, as of April 2009. All message maps and supporting audience research findings were distributed to all National Public Health Information Coalition (NPHIC) members for local use and adoption to ensure consistency of messaging. Message map development was an ongoing activity based on the availability of new science and policy relating to pandemic preparedness and response as of April 2009.

Risk communications is a component of the USG Public Health Emergency Plan and is also a part of VA pandemic flu public affairs training that has been pilot-tested in one region of the country and that will be offered to the rest of the Department of Veterans Affairs, which has multiple sites in every State and many communities.

6.3.8.2. Complete

DOD and VA, in coordination with HHS, shall develop and disseminate educational materials, coordinated with and complementary to messages developed by HHS but tailored for their respective departments, within 6 months. Measure of performance: up-to-date risk communication material published on DOD and VA pandemic influenza websites, HHS website www.flu.gov, and in other venues.

VA and DOD have each developed pandemic influenza educational materials tailored to their personnel and patients. DOD and VA have worked with other agencies to produce materials, including HHS/CDC and the Department of Labor. Avian Influenza and Pandemic Influenza fact sheets have been developed and are posted on fhp.osd.mil/aiWatchboard with links to and from www.flu.gov.

Guidance in the form of brochures and fact sheets for avian influenza, pandemic influenza and guidance for those involved in vector eradication efforts are completed and were placed on the DOD Pandemic Influenza Watchboard with links to and from www.flu.gov as of November 1, 2007. VA has produced print and video material on topics including general information on pandemic influenza, how to protect oneself and one's family from respiratory illnesses, how to wash hands and control coughing and sneezing, how to correctly put on and take off protective equipment, how to care for someone who is sick with influenza, when to return to work after being sick with pandemic influenza, and mental health aspects of an influenza pandemic. These materials are available to the public at www.publichealth.va.gov/InfectionDontPassItOn.

All materials submitted for inclusion on website with links to www.flu.gov receive interagency review and coordination through the Interagency Pandemic Influenza Web group chaired by HHS. Following guidance supplied via interagency review, content has been edited to ensure more DOD- or VA-centric messages.

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Chapter 7: Protecting Animal Health

7.1.1.1. Complete

USDA, in coordination with DHS, HHS, DOD, and DOI, and in partnership with State and tribal entities, animal industry groups, and (as appropriate) the animal health authorities of Canada and Mexico, shall establish and exercise animal influenza response plans within 6 months. Measure of performance: plans in place at specified Federal agencies and exercised in collaboration with States believed to be at highest risk for an introduction into animals of an influenza virus with human pandemic potential.

We have led or participated in multiple exercises of Federal and State response plans in States at high risk for avian influenza introduction and worked with tribal nations to refine and coordinate influenza response plans. Other agencies involved in these exercises included, at various times, representatives of State or Federal agencies responsible for public health, wildlife and refuge management, and homeland security.

Many exercises have involved industry experts, and at least two major exercises focused on national stockpile issues, including actual materiel delivery to States from the stockpile. USDA is working with DHS to integrate Homeland Security Exercise and Evaluation Program (HSEEP) tools and methodologies into the Animal and Plant Health Inspection Service's (APHIS) exercise plan.

7.1.2.1. Complete

USDA shall partner with State and tribal entities to establish, organize, train, and exercise incident management teams and a veterinary reserve corps within 12 months. Measure of performance: a veterinary reserve corps and incident management teams trained for each of the States believed to be at highest risk for an introduction into an animal population of an influenza virus with human pandemic potential.

The National Animal Health Emergency Response Corps (NAHERC) has been established in every State and the USG continues to expand its membership and capacity. NAHERC's goal is to provide trained animal health responders at the county, State, and Federal levels. Veterinary Response or Incident Management Teams (IMTs) also are trained and in place in 40 States, including all of the priority poultry States. These teams are augmented with six USDA national IMTs.

IMTs participate in many training exercises and have handled significant real-world crises, such as major hurricanes and disease outbreaks. Currently, the States and the Federal Government have more than 4,000 people available to respond if an event, such as an avian influenza outbreak, were to occur.

7.1.2.2. Complete

USDA, in coordination with DOD, HHS, DHS, and DOI, shall partner with States and tribal entities to ensure sufficient veterinary diagnostic laboratory surge capacity for response to an outbreak of avian or other influenza virus with human pandemic potential, within 6 months. Measure of performance: plans and necessary agreements to meet laboratory capacity needs for a worst case scenario influenza outbreak in animals validated by utilization in exercises.

Plans are in place to ensure sufficient veterinary diagnostic laboratory surge capacity at 54 national animal health laboratory network (NAHLN) facilities in 45 States. The laboratories are participating in wild bird avian influenza surveillance. Representatives from 31 laboratories were trained to use high-throughput equipment for conducting avian influenza testing. In addition, avian influenza tabletop exercises are being conducted in NAHLN laboratories throughout the United States. Throughout the spring and summer of 2008, the NAHLN conducted tabletop exercises with each NAHLN affiliated laboratory in the nation. In nearly every exercise, other local institutions (such as law enforcement, public health, local poultry producers and others) also participated. The results of the exercises were used to revise activation and response plans and to determine reagents and supplies needed to address an outbreak.

7.1.3.1. Complete

USDA, in coordination with DHS, shall develop, disseminate, and encourage adoption of best practices and recommendations for maintaining the biosecurity of animals, especially poultry and swine, against infection and spread of influenza viruses and for reporting suspected cases of influenza with human

pandemic potential in animals to State or Federal authorities, within 4 months. Measure of performance: incorporation of best practices by industry.

The Biosecurity For Birds (BFB) outreach and education campaign is targeted to owners of backyard poultry to educate them on biosecurity and to encourage them to report birds with signs of infectious poultry diseases such as avian influenza. A toll-free number is provided. In 2007, the campaign produced a video with Future Farmers of America (FFA) aimed at students that complements one produced earlier aimed at adults. More than 3,000 of the new videos have been distributed in the past year. FFA and 4-H use campaign materials to exhibit at county and State fairs and poultry shows. More than 160 fair exhibits have been set up in each of the past several years. Campaign displays have been given to each USDA/APHIS Area Veterinarian-in-Charge (AVIC) office, enabling them to do outreach in their State. A new BFB website has been developed within the USDA/APHIS website with a mirror BFB site in Spanish implemented in summer 2008. All BFB materials are produced in English and Spanish, and selected materials have been translated into six other languages. Several million pieces of literature have been distributed throughout the United States, its territories, and to more than 70 countries. BFB materials have been provided to all participants in the "Biosecurity in the Live Bird Markets" HPAI disease prevention workshops conducted by APHIS's International Services and Veterinary Services divisions in collaboration with the International Regional Organization for Plant and Animal Health and the Inter-American Institute for Cooperation on Agriculture in Central America, the Dominican Republic, Mexico, and South America in 2007-2008. The newest brochure is entitled "How Poultry Disease Spreads in the Live Bird Marketing System" and is produced in both English and Spanish. Ads on poultry feed sacks with a biosecurity and reporting message have reached millions of bird owners.

7.1.3.2. Complete

USDA, in coordination with DHS, shall partner with State and tribal entities, and industry groups representing poultry and swine producers and processors, and other stakeholders, to define and exercise response roles and capabilities within 9 months. Measure of performance: exercises involving State or tribal entities, at least one poultry industry group, and one swine industry group, conducted and after action reports produced.

We have conducted numerous exercises with local, tribal, State, and Federal officials, as well as representatives from poultry and swine industries. We plan to hold more exercises and to complete an analysis of all the after-action reports delivered during the State exercise program. A National Animal Health Laboratory Network (NAHLN) tabletop exercise program was implemented. The tabletop exercise moves the participants through challenges encountered during an outbreak of highly pathogenic avian influenza.

Thirty-eight facilitated sessions were conducted from February through October 2008. Participants were selected by local NAHLN laboratory leadership and have included to date: laboratory personnel, State and Federal animal health officials, and poultry industry representatives. Participants gained enhanced awareness of laboratory issues that they could encounter during an outbreak and had the opportunity to assess the completeness of their response plans.

7.1.3.3. Complete

HHS, in coordination with USDA, DHS, and the Department of Labor (DOL), shall work with the poultry and swine industries to provide information regarding strategies to prevent avian and swine influenza infection among animal workers and producers, within 6 months. Measure of performance: guidelines developed and disseminated to poultry and swine industries.

HHS developed response guidelines to reduce the risk of transmission between domestic animals and wildlife during an influenza outbreak in animals. Federal partners were given specified roles, responsibilities, and the

timing of actions to be taken in outbreak scenarios involving wildlife and domestic animals. Actions in these guidelines have been incorporated into agency response plans that continue to be updated. HHS/CDC/NIOSH published an Alert titled "Protecting Poultry Workers Against Avian Influenza (Bird Flu)" (May 2008). Electronic copies in English and Spanish are available on the following website: www.cdc.gov/niosh/docs/2008-128/. Hard copies can be ordered online by completing an order form on the following website: www.cdc.gov/pubs/niosh.aspx.

Response guidelines, informational material, and communication plans have been disseminated to State and Federal partners, including wildlife agencies and diagnostic laboratories. USDA has posted draft guidance for the swine industry titled "[Management of Highly Pathogenic Avian Influenza H5N1 Virus: Policy Impact and Management of Swine](#)" (USDA Draft, 2006). DOL's Occupational Safety and Health Administration has published additional guidance for poultry workers: Avian Influenza Protecting Poultry Workers at Risk (www.osha.gov/dts/shib/shib121304.html) and OSHA Guidance Update on Protecting Employees from Avian Flu (Avian Influenza) Viruses (www.osha.gov/Publications/3323-10N-2006-English-07-17-2007.html).

7.1.3.4. Complete

USDA, in coordination with DOI, shall collaborate with DHS and other Federal partners, with State, local, and tribal partners, including State wildlife authorities, and with industry groups and other stakeholders, to develop guidelines to reduce the risk of transmission between domestic animals and wildlife during an animal influenza outbreak, within 6 months. Measure of performance: guidelines for various outbreak scenarios produced, disseminated, and incorporated by partners.

Response plans for an introduction of High Path H5N1 in wild birds have been incorporated into the "Summary of National Highly Pathogenic Avian Influenza (HPAI) Response Plan," which was developed by USDA, DOI, HHS, DOD, and DHS. The Response Plan specifically developed actions to be taken by Federal and State partners as a result of an introduction of HPAI into the United States through several different pathways, including migratory wild birds. Response actions have been incorporated into the USDA and DOI/FWS HPAI response plans. Informational brochures on the role of wild birds in the transmission of AI between domestic and wild birds have been developed by USDA and are being distributed to producers and industry organizations such as Ducks Unlimited, Poultry Breeder Associations, as part of the "Biosecurity for the Birds" program. USDA/DOI communication plans for notifying State and Federal partners of LPAI and HPAI findings has been completed and distributed to state agriculture and wildlife agencies and diagnostic laboratories. USDA has employed 44 wildlife disease biologists in 43 states who coordinated surveillance and response with state-based cooperators, and serve as first responders to an introduction of HPAI or other disease outbreak.

7.1.3.5. Complete

DOI, in coordination with USDA, shall work with other Federal, State, and tribal partners to develop appropriate response strategies for use in the event of an outbreak in wild birds, within 4 months. Measure of performance: coordinated response strategies in place that can rapidly be tailored to a specific outbreak scenario.

DOI and USDA, in coordination with other Federal, State, and tribal partners, have adopted a common response strategy for an outbreak of HPAI H5N1 in wild birds--intensified surveillance, containment, coordinated interagency situational assessment, and activating or supporting an ICS/unified command when needed. USDA/APHIS has incorporated the principles of this strategy in "Summary of National Highly Pathogenic Avian Influenza (HPAI) Response Plan," dated August 2007, which replaces the 2006 version, and "Interagency Playbook for Domestic Response to a Detection of Highly Pathogenic Avian Influenza H5N1 in Birds," dated August 2006. DOI/FWS has incorporated this strategy in "Early Detection and

Response Plan for Occurrence of Highly Pathogenic Avian Influenza in Wild Birds,” dated August 2007.

Guidance for response planning has been issued to National Wildlife Refuges, and most refuges have site-specific response plans in place. DOI and USDA conducted tabletop exercises of hypothetical H5N1 HPAI outbreak in wild birds that tested and integrated local (field and laboratory), agency, and departmental AI response plans, along with Incident Command Systems (ICS) at the local, regional, and national level. DOI has also conducted 14 wildlife disease workshops during this period in coordination with other Federal, State, Tribal, and U.S. Territorial and Freely-Associated States partners, which included emphasis on contingency planning and response to an outbreak of HPAI in wild birds. USDA has employed 44 wildlife disease biologists in 43 States who serve as first responders to an introduction of HPAI or other disease outbreak. In total, these coordinated efforts serve to establish and communicate a response strategy for an outbreak of HPAI H5N1 in wild birds that can be rapidly tailored to a specific outbreak scenario.

7.1.4.1. Complete

USDA shall augment the current stockpile of 40 million doses of avian influenza vaccine with an additional 70 million doses within 9 months. Measure of performance: avian influenza vaccine stockpiles increased to 110 million doses.

USDA has completed acquisition of an additional 40 million doses of killed avian influenza vaccine. The product has been manufactured and is available for use. In addition, the National Veterinary Stockpile (NVS) has entered into a contract for delivery of up to 500 million doses of live pox recombinant H5 avian influenza vaccine. The NVS does not own the product but has guaranteed access. Currently, there are 140 million doses of killed avian influenza vaccine available for use, with 75 million doses effective against H5 avian influenza virus.

7.1.4.2. Complete

USDA shall stockpile diagnostic reagents, PPE, antiviral medication for protection of response personnel, and other response materiel within 9 months. Measure of performance: materiel pre-positioned for rapid delivery to areas where poultry or other animals are believed to be at highest risk for an introduction of an influenza virus with human pandemic potential.

USDA has contracts with distributors and manufacturers of personal protective equipment (PPE), diagnostic reagent commercial entities, and other veterinary suppliers for just-in-time delivery to incident sites. These contracts include processes for call and delivery within 24 hours. We also maintain, in strategic locations, sufficient PPE and other materials to protect workers and initially support 310 people for 10 days.

7.1.5.1. Complete

USDA and DOI shall perform research to understand better how avian influenza viruses circulate and are transmitted in nature, in order to improve information on biosecurity distributed to local animal owners, producers, processors, markets, auctions, wholesalers, distributors, retailers, and dealers, as well as wildlife management agencies, rehabilitators, and zoos, within 18 months. Measure of performance: completed research studies provide new information, or validate current information, on the most useful biosecurity measures to be taken to effectively prevent introduction, and limit or prevent spread, of avian influenza viruses in domestic and captive animal populations.

The measure of performance has been met by completed research studies that provided new information, and/or validated current information, on the most useful biosecurity measures to be taken to effectively prevent introduction, and limit or prevent spread, of avian influenza viruses in domestic and captive animal

populations. The following summary documents the completed performance along with the eventual dissemination of our research by peer-reviewed publications and data distributions for the development of predictive models for avian influenza in wild bird surveillance efforts.

USDA's Agricultural Research Service (ARS) has completed studies to look at the infectiousness of pigs to four H5N1 high pathogenicity avian influenza (HPAI) viruses (Clades 1, 2.2, 2.2 and 2.3) by respiratory exposure (intranasal – IN), intragastric gavage (IG), and feeding infected poultry meat. The data indicated: 1) the H5N1 HPAI viruses varied in their ability to infect pigs following IN inoculation, but all the H5N1 HPAI viruses were less infectious than swine influenza viruses for pigs, 2) IG inoculation did not produce infection, and 3) no disease or death resulted following any exposures. This indicates respiratory exposure is a more likely route of exposure to produce infection in pigs, but pigs are still resistant to infection by current H5N1 HPAI viruses.

ARS has completed infectiousness studies with 12 wild aquatic bird species with H5N1 and H7N7 HPAI viruses. Widgeons and Cinnamon teal inoculated with H7N7 became infected but did not develop clinical disease. Mute, black, whooper, and trumpeter swans were highly susceptible to lethal effects of the H5N1 HPAI virus while wood ducks, bar-headed geese, cackler geese, laughing gulls, and herring gulls were intermediate in susceptibility to lethal effect of the virus. These nine species would be good clinical indicator species testing for entry of H5N1 HPAI virus in North America. Mallards, redhead ducks, northern pintails, and blue-wing teal became infected but did not develop illness. Spreading of the H5N1 HPAI virus would most likely result from asymptomatic shedding of virus from whooper swans, wood ducks, cackler geese, mute swans, and bar-headed geese, which could shed the virus for more than 4 days without showing disease.

ARS, in collaboration with the Ohio State University, conducted genetic and transmission studies of the recent wild bird H5 low pathogenic avian influenza viruses. Domestic ducks were shown to be most susceptible to infection and the viruses were transmitted by contact while chickens were resistant to infection. This suggests that entry of wild bird avian influenza viruses into poultry is more likely to occur through exposure to domestic ducks that should be protected from direct exposure to infected wild birds. In addition, mixing of ducks with other poultry species would be a high risk for avian influenza virus introduction.

Since early 2006, the US Geological Survey (USGS) has been collecting and analyzing biological samples from wild bird populations with emphasis on Alaska, Hawaii, and the Pacific Flyway states. USGS recently began testing samples collected by US Fish and Wildlife Service (FWS) from both the Central and Mississippi flyways. Samples are being analyzed at the USGS National Wildlife Health Center (NWHC). For the biological sampling year that runs from April 2008 to March 2009, 26,392 samples were processed. USGS has also developed, maintains, and funds the interagency data management system for HPAI early detection. The Highly Pathogenic Avian Influenza Early Detection Data System (HEDDS) serves as the single database for USGS, USFWS, USDA, and State wildlife agency wild bird HPAI surveillance results. HEDDS provides a secure, accessible platform for the generation of reports, graphs, and maps and can be used for spatial modeling.

USGS is conducting research to assess the differences in detectability of avian influenza viruses among cloacal, oropharyngeal, and pooled cloacal-oropharyngeal samples taken from wild birds. Preliminary results suggest an increase in the total number of positive hemagglutination (HA) screens using pooled samples. These results are being utilized to modify sampling protocols; these changes will result in a more cost efficient method of sampling and testing wild birds.

USGS was instrumental in the validation of the detection test for the H5 subtype of avian influenza in wild birds. This project was done in collaboration with ARS and APHIS, as well as with academic collaborators. USGS tested a total of 27,296 wild birds to identify H5 viruses for this project. The results were published in a peer-reviewed scientific journal.

USGS surveillance research was first to identify deficiencies in the existing detection technology for the detection of H7 subtype of avian influenza in the United States. A revised H7 subtype test was developed by ARS and in collaboration with USGS; the test was validated that demonstrated that the new test exhibits broader detection capability. The revised protocol has been transferred to the National Veterinary Services Laboratories in Ames, Iowa. A manuscript describing the validation of the new test for the detection of H7 avian influenza viruses from North American birds has been accepted for publication.

7.1.5.2. Complete

USDA and DOI shall perform research to develop and validate tools that will facilitate environmental surveillance for avian influenza viruses, especially in wild birds, through the evaluation of feathers, feces, water, or nesting material, within 24 months. Measure of performance: new environmental surveillance tools researched and made available for use by Federal, State, tribal, university, and other entities performing avian influenza surveillance.

The measure of performance has been met by completed research studies that provided new environmental surveillance tools researched and made available for use by Federal, State, tribal, university, and other entities performing avian influenza surveillance. The following summary documents the completed performance, the eventual dissemination of research by peer-reviewed publications, and data distribution for the development of predictive models for avian influenza in wild bird surveillance efforts.

ARS has developed a new method for extracting RNA from cloacal and fecal samples from domestic poultry, including wild birds. Comparison testing of the new RNA extraction procedure with the earlier extraction procedure is ongoing. Approximately 2,000 wild bird samples from Alaska have been processed to determine if they contained avian influenza viruses, and the new procedure is providing improved results. The revised protocol has been transferred to the National Veterinary Services Laboratories in Ames, Iowa and several university laboratories.

ARS tested samples from both Alaska and Mongolia for the presence of avian influenza. Screening identified 41 potential positive samples from Mongolia, which yielded two low pathogenic avian influenza viruses.

ARS tested more than 300 samples collected from ducks, cormorants, geese, and penguins from the Falkland Islands. A new paramyxovirus was isolated from one rock hopper penguin. No avian influenza viruses were detected from the 300 samples.

ARS identified a wild bird sample from North Carolina that was H5 positive. The sample was sent to NVSL for confirmation, but the sample was a mixed infection that had to be purified before it could be serologically characterized. The virus was confirmed to be H5N1 avian influenza.

USGS scientists continue to conduct collaborative research activities in parts of Asia and Africa where H5N1 is present in migratory bird populations. USGS scientists, in partnership with FAO and host nations, are utilizing GIS technology and satellite telemetry to track the local and long range movements of intercontinental migratory bird species. These studies are providing new information on migration pathways of birds and potential routes of transmission for the introduction of HPAI to previously uninfected regions. The results of these studies are available to researchers worldwide via the internet. USGS scientists are also collaborating with the Chinese Academy of Sciences to examine the relationships between domestic poultry and wild bird populations. Using GIS technology, the movements of the marked birds are being compared with the location of poultry producers, wetlands, and other geographic features to determine the levels of migratory bird connectivity among these sites. Data from these studies will be used to develop predictive models for both China and the United States. USGS scientists are also providing technical support for avian influenza surveillance efforts in Thailand and Laos. The ARS research was disseminated in a presentation given at the October 2007 meeting of the American Association of Veterinary Laboratory Diagnosticians and

in articles in the Journal of Virology and the Journal of Veterinary Diagnostic Investigation.

7.1.5.3. Complete

USDA shall sequence genomes of all available avian influenza viruses to provide diagnostic sequences, identify possible vaccine antigens, and provide potential information on viral evolution, relationships, and determinants of virulence within 12 months. Measure of performance: genomes of avian influenza viruses sequenced and submitted to GenBank, and information reported on potential diagnostic sequences and viral relationships.

The sequencing project is completed with annotated complete coding sequences or partial sequences from 998 influenza isolates. The sequences have been or are being submitted to GenBank with the goal of submission of all available sequences by September 30, 2009. All of the sequence information will be released to the public directly through GenBank. Efforts continue to analyze the sequence data for inclusion in peer reviewed publications. These data may be combined with biological data on the isolates to enhance the value of the data. USDA-ARS research that has included information from these data sets have already been published in peer-reviewed publications, including Vaccine, Journal of Virology, and Veterinary Microbiology, and additional publications have recently been accepted in the journal Avian Diseases.

7.1.5.4. Complete

USDA shall perform research to improve vaccines and mass immunization techniques for use against influenza in domestic birds within 36 months. Measure of performance: an effective avian influenza vaccine that can be delivered simultaneously to multiple birds ready for commercial development.

The measure of performance is being met by research studies to evaluate the effectiveness of new candidate avian influenza vaccine platforms that can be mass delivered to commercial poultry. The following summarizes the current status of our vaccine discovery research program and the dissemination of our research results through peer-reviewed publications.

Currently licensed vaccines in the United States for avian influenza for use in poultry include killed whole virus adjuvanted vaccines and recombinant fowlpox/H5 vaccine. The recombinant fowlpox vaccine is licensed, but it has not been used in the United States, although it has been used widely in Mexico. The killed whole virus adjuvanted vaccines have been used on a routine basis, but these vaccines require birds to be individually handled for vaccination which makes mass vaccination difficult. The viruses used in the commercial vaccines in the United States are low pathogenic avian influenza virus strains that grow to high titer in embryonating chicken eggs. However, the strains available in the United States are antigenically poorly matched to the H5N1 Asian lineage highly pathogenic avian influenza viruses found in Africa, Asia, and Europe, Asia, and therefore new vaccine seed strains are needed. Because of the antigenic drift seen with H5N1, no naturally occurring low pathogenic avian influenza isolates are suitable to produce a vaccine closely matched to circulating viruses. The use of reverse genetics and site directed mutagenesis has been shown to be an effective approach to change highly pathogenic avian influenza viruses to low pathogenic avian influenza viruses that can safely be used by current vaccine manufactures.

Research at the ARS Southeast Poultry Research Laboratory has performed multiple studies examining the antigenic variation of H5N1 highly pathogenic avian influenza viruses in other countries, and they have used those viruses in vaccine efficacy studies. These studies have included the testing and evaluation of vaccines available in the United States for H5 avian influenza with challenge by viruses from several different countries. This has included testing of the vaccines available in the U.S. emergency vaccine bank. With some exceptions, the available vaccines did protect chickens from clinical disease, but they did not prevent virus shedding. We documented that the closer the vaccine is to the challenge strain, the greater the reduction in

viral shedding occurs. This reduction in viral shedding is critical if vaccines are to aid in the control and eradication of field outbreaks. Additionally, vaccine efficacy studies have been conducted in the laboratory with virus isolates from Indonesia and Vietnam with the vaccines available in those countries. Similar results were seen with most vaccines providing protection from clinical disease, while still allowing high levels of virus shedding. Some examples of vaccine ineffectiveness were seen with some viruses from Indonesia. The results of these vaccine trials were provided to collaborators in the affected countries to provide scientific data on efficacy of available vaccines to help them shape their vaccine policy. Other studies have used reverse genetics to make low pathogenic viruses that are antigenically matched to field strains that can be used as seed strains for vaccines. These studies demonstrate improved protection as measured by virus shedding. Reverse genetics can also be used to develop vaccines that can be used to differentiate infected from vaccinated animals (DIVA) using the heterologous neuraminidase approach. The viruses used with the reverse genetics approach can be made available for commercial application. The reverse genetics technology is patented outside of ARS, so the intellectual property issues would need to be addressed before a vaccine can be commercially produced.

The other major area of research was the testing and evaluation of different vaccine platforms that have the potential for mass vaccination of poultry. The fowlpox/H5 recombinant vaccine that is licensed in the United States must be administered individually to birds, but typically this is done in day old chickens which facilitates vaccination efficiency. Researchers at Southeast Poultry Research Laboratory have continued to work with the vaccine producer to develop new fowlpox recombinants for H5 and H7 avian influenza which provides options for better antigenic matching of vaccines to field strains. These new fowlpox recombinants can be licensed by the company, but concerns about cost and return on investment in the U.S. market remain.

Multiple other vaccine platforms were evaluated at Southeast Poultry Research Laboratory in collaboration with research partners for potential use for mass vaccination in poultry. This included studies that showed that adenovirus-vectored vaccines could be administered both by intramuscular (I.M.) injection, or by in ovo (embryonating eggs) vaccination to achieve early protection from virulent challenge. The adenovirus system is a replication restricted system that provides the safety of a killed vaccine, but the immune response of a live vaccine. This vaccine has also been tested by a mucosal route of inoculation, but the immune response was less than seen with parenteral inoculation. The vaccine technology is already owned by a commercial company and they are continuing to test the product in chickens. The development of attenuated avian influenza viruses as potential vaccines has also been evaluated. It was determined that using viruses with a truncated nonstructural protein 1 (NS1), either naturally occurring viruses or viruses produced by reverse genetics, are attenuated and can potentially be used as a vaccine. Studies of a low pathogenic H7N3 virus demonstrated that the virus with a deleted NS1 protein was attenuated in virulence and was also restricted in transmissibility. The attenuated virus still produced good levels of antibody to the hemagglutinin protein, but levels were lower than the virus with the full length gene. Studies evaluating viruses with a truncated NS1 protein were done using an in ovo vaccination system. This vaccination method could produce protection, but it also reduced the hatchability of the vaccinated embryo. Efforts continue to balance the attenuation of the viruses with the ability to produce an effective immune response. Several different H5N1 viruses have been attenuated with this technology and are in the process of being removed from the Select Agent list so they can be used as diagnostic reagents and possible as vaccine seed strains for traditional killed influenza viruses. The attenuated viruses can potentially be used as live viruses, and studies continue to evaluate these viruses primarily by the in ovo route of inoculation because of the concern of reversion to virulence of attenuated AIV strains. However, regulatory issues still remain whether an attenuated avian influenza virus would be approved for field use.

Other vaccine platforms have been evaluated, but current results have not been promising. This has included the use of a killed avian influenza virus with a mucosal adjuvant given as an aerosol, a yeast vectored expression system, a salmonella vectored expression system, a Marek's vectored expression, and a Newcastle Disease virus (NDV) expression system. The NDV expression is still being evaluated using both constructs

that were developed at Southeast Poultry Research Laboratory, but also viruses available commercially in other countries.

Several vaccine technologies are available commercially or could be available on the near horizon. However, there remains a reluctance of vaccine companies to commit the resources to test and license new avian influenza vaccines in the United States because of a lack of a current market for these vaccines in the United States. Efforts continue to develop new vaccine technologies, test experimental vaccines, and evaluate vaccines available in other countries for their effectiveness and potential for mass vaccination.

Peer Review Publications:

Cauthen, A.N., D.E. Swayne, M.J. Sekellick, P.I. Marcus, and D.L. Suarez. 2007. Amelioration of Influenza Pathogenesis in Chickens Attributed to the Enhanced Interferon-Inducing Capacity of a Virus with a Truncated NS1 Gene. *Journal of Virology*. 81:1838-1847.

Wang, L., D. Suarez, M. Pantin-Jackwood, M. Mibayashi, A. García-Sastre, Y.M. Saif, C-W. Lee. Characterization of Influenza Virus Variants with Different Sizes of the Non-structural (NS) Genes and Their Potential as a Live Influenza Vaccine in Poultry. *Accepted Vaccine* 26 (2008) 3580-3586.

Toro, H., D.C. Tang, D.L. Suarez, Z. Shi. 2008. Protection of chickens against avian influenza with non-replicating adenovirus-vectored vaccine. *Vaccine*. 26:2640-2646.

Sylte, M.J., Hubby, B., Suarez, D.L. 2007. Influenza neuraminidase antibodies provide partial protection for chickens against high pathogenic avian influenza infection. *Vaccine* 25:3763-3772.

Pillai, S. P. S., M. Pantin-Jackwood, S. J. Jadhao, D. L. Suarez, L. Wang, H. M. Yassine, Y. M. Saif, C-W. Lee. 2009. Pathobiology of triple reassortant H3N2 influenza viruses in breeder turkeys and its potential implication for vaccine studies in turkeys. *Vaccine*. 27:819-824.

Steel, J., Burmakina, S.V., Thomas, C., Spackman, E. García-Sastre, A., Swayne, D.E., Palese, P. A combination in-ovo vaccine for avian influenza virus and Newcastle disease virus. *Vaccine* 26(4):522-531, 2008.

Goetz, S.K., Spackman, E., Hayhow, C., Swayne, D.E. Assessment of reduced vaccine dose on efficacy of an inactivated avian influenza vaccine against an H5N1 high pathogenicity avian influenza virus. *Journal of Applied Poultry Research* 17: 145-150, 2008.

Bublott, M., N. Pritchard, D. E. Swayne, P. Selleck, K. Karaca, D. L. Suarez, J.-C. Audonnet, and T.R. Mickle. 2006. Development and Use of Fowlpox Vectored Vaccines for Avian Influenza. *Annals of New York Academy of Sciences*. 1081:193-201.

Specific Cooperative Agreements:

Protection of chickens from avian influenza (AI) challenge following vaccination with a recombinant salmonella expressing the M2E gene of AI. University of Arkansas, agreement 58-6612-7-0158

Vaccination with attenuated influenza viruses and biological characterization of avian influenza viruses. Ohio State University Research Foundation, agreement 58-6612-6-0237

7.1.5.5. Complete

USDA, in coordination with DHS, shall identify any deficiencies relative to needs for Federal animal research facility capacity, including appropriate biosafety levels, for performing studies of avian, swine,

and other animal influenza viruses with pandemic potential, and establish a plan of action to ensure that needed facilities will be available to carry out those studies, within 6 months. Measure of performance: deficiencies in capacity of Federal animal research facilities identified and plans developed for addressing those needs.

The measure of performance has been met by identifying deficiencies in the capacity of the Federal animal research facilities identified, and plans were developed and presented for addressing those needs.

ARS conducted an evaluation of its existing bio-containment facilities for its Avian Influenza research program at the Southeast Poultry Research Laboratory (SEPRL), in Athens, GA. The evaluation was conducted by an ARS team and the professional services of RMF Engineering and Merrick & Company. The evaluation was completed November 2006, with a report submitted to ARS management in December 2006. The report concludes that new facilities are needed to meet current bio-containment standards and consolidate an expanded research staff of 82 persons, including 20 primary scientists.

There are currently no Federal bio-containment facilities to study animal influenza viruses with pandemic potential in large animal species such as swine.

The proposed new, modernized facility would meet the combined long-term needs of SEPRL, Richard Russell Research Center, Athens, GA and the Avian Disease Oncology Laboratory, East Lansing, MI, for BSL-2 enhanced and BSL-3 Ag animal space, and BSL 2 and 3 laboratory space and administrative/office space. In addition, facilities will also be needed to house breeding colonies of disease-free chickens used for research. To date \$5.2 million has been appropriated toward the planning and design of the facility. The estimated total project cost for the consolidated facility is \$232.5 million.

7.1.5.6. Complete

USDA, in coordination with DHS, DOI, and DOD, shall partner with State and tribal authorities to refine disease mitigation strategies for avian influenza in poultry or other animals through outbreak simulation modeling, within 6 months. Measure of performance: simulation models produced and reports issued on the results of influenza outbreak scenario modeling.

Two outbreak simulation models were developed and are providing data to refine mitigation strategies for avian influenza. The models simulate the spread, mitigations, and impacts of two animal pathogens (HPAI and Foot and Mouth Disease). USDA and DHS continue to improve the models, which already are providing information to improve response planning at the State, industry, and national level. A report was produced entitled "Modeling Highly Pathogenic Avian Influenza in the U.S. Poultry Industry." This report is providing input to the NVS and the NAHLN by estimating the range of vaccine and diagnostic resources needed in various HPAI scenarios.

DOI and USDA also are involved in a cooperative agreement with Colorado State University to examine how HPAI spreads within wild bird populations and how the agent might move from wild bird populations to farmed bird populations. This project combines several databases, including waterfowl banding and movement data, AI environmental sample data, AI cloacal sample data, poultry location data, and, more recently, AI genetic sequence data and additional data from Canada to better enable predictions of poultry areas at risk, as well as areas that should receive increased surveillance.

7.2.1.1. Complete

DOI and USDA shall collaborate with State wildlife agencies, universities, and others to increase surveillance of wild birds, particularly migratory water birds and shore birds, in Alaska and other appropriate locations elsewhere in the United States and its territories, to detect influenza viruses with

pandemic potential, including HPAI H5N1, and establish baseline data for wild birds, within 12 months. Measure of performance: reports detailing geographically appropriate wild bird samples collected and influenza virus testing results.

The 2008 U.S. Interagency Strategic Plan wild bird surveillance season (April 1, 2007 – March 31, 2008) was conducted by DOI and USDA with collaboration from State wildlife agencies. The four North American Flyway Councils stepped down that national strategy to flyway specific surveillance strategies, targeting priority species and locations to enhance the likelihood of detecting HPAI H5N1 if it were present. During the 2008 season more than 115,000 wild bird and environmental samples were collected and tested for HPAI H5N1. Sample data and results are entered into and reported through the Highly Pathogenic Avian Influenza Early Detection and Data System (HEDDS). Results of the 2007 surveillance season (April 1, 2007 – March 31, 2008) were reported by DOI and USDA at the U.S. Animal Health Association Annual Meeting in October 2007.

For DOI: DOI bureaus focused wild bird surveillance efforts in Alaska, elsewhere in the Pacific Flyway, Central Flyway, and the Pacific Island freely-associated States and trust territories in 2008. Surveillance in the Mississippi and Atlantic Flyway States also was initiated. Field collections were done by Federal biologists or through cooperative agreement or contract with State wildlife agencies, Alaska Native organizations, and other cooperators. A total of 25,539 bird samples have been collected and screened through the USGS National Wildlife Health Center from the 2008 surveillance season. The 2009 surveillance season began on April 1 with collection of samples from the Native Alaskan subsistence harvest.

For USDA: All 50 cooperative agreements with State Wildlife Agencies to assist in the collection of AI samples from wild birds have been completed. The total number of States that have conducted AI sampling with USDA supplemental funds to date is 50; sampling also has been conducted in Guam, Guantanamo Bay, the Mariana Islands, and Puerto Rico. More than 214,000 bird samples and 100,000 environmental fecal samples have been collected by USDA Wildlife Services and State Cooperators since the Early Detection System was initiated in 2006. Forty-six NAHLN labs have been entered in the Integrated Acquisition System (IAS) and approved by Minneapolis to pay the labs for diagnostic expenses for performing rRT-PCR screening of wild bird samples. Weekly reports on surveillance efforts are being submitted. The APHIS Laboratory Submission System for data entry of wild bird AI samples is completed and implementation has been implemented. Additionally, cooperative sampling in Canada, Chile, China, Ecuador, Greenland, Mexico, and Russia has been implemented.

7.2.1.2. Complete

USDA and DOI shall collaborate to develop and distribute information to State and tribal entities on the detection, identification, and reporting of influenza viruses in wild bird populations, within 6 months. Measure of performance: information distributed and a report available describing the type, amount, and audiences for the information.

The 2006-2008 highly pathogenic avian influenza (HPAI) surveillance seasons have been completed and the 2009 HPAI surveillance season was initiated on April 1. USDA and DOI have worked with the Association of Fish and Wildlife Agencies, Flyway Councils, States, Tribes, and others to produce regional and State implementation plans and provide surveillance sample collection guidance for the early detection of HPAI in wild birds.

The Highly Pathogenic Avian Influenza Early Detection Data System (HEDDS), established to distribute information on the detection, identification, and reporting of influenza viruses in wild birds, includes results of 340,698 samples tested from all 50 States, Puerto Rico, Guam, and 5 Freely Associated Pacific Islands. Specific results are available to partner agencies via HEDDS, and in summary format to the public. In addition, HEDDS catalogues all detections of low pathogenicity avian influenza viruses. A listing of Wildlife

Mortality Events nationwide details information on causes of wildlife mortalities. The public, States, tribes, media, and partners use these sites to keep track of avian influenza surveillance around the country. All samples tested in the since the initiation of the Early Detection system in 2006 were negative for the highly pathogenic avian influenza virus.

USDA and DOI have provided more than 70 national, regional, and local on-site, satellite broadcasts, and web-based training workshops on wild bird avian influenza surveillance, identification, and reporting. Informational resources were distributed at the Association of Fish and Wildlife Agencies to State fish and wildlife or natural resource agency directors and biologists, at Native American Fish and Wildlife Society meetings, the North American Wildlife and Natural Resources Conference and the North American Ornithological Society Conference, the National Park Service, the U.S. Fish and Wildlife Service and internationally in Argentina, Brazil, Cambodia, Chile, Costa Rica, Laos, Philippines, Thailand, and Vietnam.

7.2.1.3. Complete

USDA shall work with State and tribal entities, and industry groups, to perform surveys of game birds and waterfowl raised in captivity, and implement surveillance of birds at auctions, swap meets, flea markets, and public exhibitions, within 12 months. Measure of performance: samples collected at 50 percent of the largest auctions, swap meets, flea markets, and public exhibitions held in at least five States or tribal entities believed to be at highest risk for an avian influenza introduction.

FY 2008 funds for National Poultry Improvement Plan (NPIP) Upland Game Birds (UGB) were allocated. Despite budget cuts, more than \$1.3 million have been made available to conduct avian influenza surveillance in upland game birds (i.e., pheasants, quail, and ducks raised for release in the wild or in hunting preserves). The States are responsible for partnering with tribal entities and industry within their borders through these cooperative agreements. States are required to report on their surveillance activities quarterly. To date, no HPAI or LPAI positive results have been received from this surveillance.

7.2.1.4. Complete

USDA shall work with State and tribal entities to provide additional personnel in additional locations to increase the number of facilities inspected and number of samples collected for avian influenza virus testing within the LBMS, within 12 months. Measure of performance: number of facilities inspected and sampled increased by 50 percent compared to previous year.

In FY 2008 HPAI Cooperative Agreements for the live-bird market system (LBMS) were established with 34 States. Despite budget cuts, approximately \$2.3 million was made available to enhance AI surveillance in live bird markets as well as to conduct AI surveillance in auction markets, swap meets, flea markets, and public exhibitions. Data received and reported by APHIS, CEAH, and NSU indicated that at least 42,700 LBMS-HPAI surveillance tests were conducted in FY 2007 for a total of more than 131,000 LPAI and HPAI surveillance tests combined.

7.2.2.1. Complete

USDA shall increase the capacity of the NVSL and the NAHLN to process influenza surveillance samples from commercial and LBMS sources, as well as wild birds, and develop and contract for the production of test reagents for distribution at no cost to collaborating State and industry laboratories within 12 months. Measure of performance: national capacity for laboratory testing increased by 100 percent compared to previous year and contracts for production of required avian influenza test reagents in place.

The testing capacity of the National Animal Health Laboratory Network (NAHLN) laboratories has increased accordingly through distribution and use of high throughput equipment to bolster veterinary diagnostic laboratory surge capacity during an influenza outbreak. NVSL is able to meet the need for reagents in-house.

7.2.2.2. Complete

USDA shall partner with State and tribal entities to provide additional support for laboratory activities associated with NPIP surveillance for avian influenza within 12 months. Measure of performance: cooperative support agreements with States and tribal entities developed and implemented.

In FY 2008 HPAI Cooperative Agreements for NPIP commercial poultry flocks were established with 41 States. Despite budget cuts, nearly \$3.2 million will be made available to enhance ongoing avian surveillance in commercial poultry and risk-based surveillance in small NPIP flocks. The States would partner with tribal entities and industry through these cooperative agreements. Data received and reported by APHIS, CEAH and NSU indicated that at least 557,479 NPIP-HPAI surveillance tests were conducted in FY 2008 for a total of more than 1.8 million LPAI and HPAI surveillance tests combined.

7.2.2.3. Complete

DOI and USDA shall increase the wild bird testing capacity of the NWHC and the National Wildlife Research Center, respectively, to process avian influenza samples from wild birds, within 12 months. Measure of performance: national wild bird testing capacity for avian influenza virus increased by 50 percent compared to previous year.

Between April 1, 2006 and March 31, 2009 (the 2006 - 2008 surveillance seasons for implementation of the National Program for the Early Detection of Highly Pathogenic Avian H5N1 in the United States), wild bird sample testing capacity increased tenfold, both in terms of personnel and in terms of our capability to run avian influenza molecular tests, and when appropriate, conduct virus isolation and sequencing activities. During 2008, the NWHC tested by PCR about 25,539 wild bird samples (primarily migratory waterfowl and shorebirds), while the NWRC tested 25,000 environmental (fecal) samples from wild birds. High-throughput platforms are at the ready and additional technicians trained in molecular and virus isolation techniques are onboard. Plans and staff are in place for multiple shifts if surge capacity is called for. The NWHC and the USDA's NWRC, as participants in the National Animal Health Laboratory Network, work closely with USDA's National Veterinary Services Laboratory in Ames, IA. The USDA and DOI, as an interagency effort, tested more than 385,000 samples from wild birds in all 50 States and 6 freely-associated States and territories since the Early Detection System was initiated in 2006. Highly pathogenic H5N1 Asian strain virus was not been detected in these samples. Numerous low pathogenic viruses were detected and more refined genetic analysis revealed viruses with the combined lineages of North American and Southeast Asian viruses. The information gained by the detection of low pathogenic viruses in populations of wild birds has provided the opportunity to better understand virus movement across continents. The testing capacity of the NWHC and NWRC has continued to meet the demand of high throughput testing required of the program.

7.2.3.1. Complete

USDA shall develop an integrated database, or enhance existing databases, to support the national initiative for comprehensive surveillance for influenza viruses with pandemic potential in domestic animals using data collected from multiple sources, within 12 months. Measure of performance: functioning animal influenza surveillance database producing reports for a variety of queries and supporting multiple analyses of data.

In the past, USDA has created or enhanced several fully automated surveillance streams, which are providing

reports for a variety of queries and supporting multiple analyses of data. These surveillance streams include wild bird reporting, as well as a summary reporting tool that represents the “broiler” portion of the chicken industry. We also have produced databases for several industry surveillance programs, and additional but modest progress has been made on NPIP and LBMS databases.

7.2.3.2. Complete

DOI, in coordination with USDA, shall work with State and tribal entities, universities, and others to implement the Avian Influenza Data Clearinghouse developed by the NWHC to support the integrated surveillance program for influenza in wild birds within 12 months. Measure of performance: a functional wild bird influenza data clearinghouse utilized by multiple stakeholders.

The Department of the Interior’s (DOI’s) U.S. Geological Survey (USGS) National Wildlife Health Center continues to operate the Highly Pathogenic Avian Influenza Early Detection Data System (HEDDS) as a data management tool for use by all agencies, organizations, and policy-makers. HEDDS is a widely accepted and accessed resource for avian influenza surveillance information, and is an example of interagency and multi-entity cooperation. HEDDS manages avian influenza animal and specimen collection data taken by 307 Federal, State, Tribal, academic, and private institutions. As of March 2009, there were 1151 registered users of HEDDS with data provided by 1434 unique submitters from 239 Federal, State, tribal, NGO, and private contributors.

During the 2008 surveillance season, the website averaged 640 page loads per week by an average of 328 unique visitors (that includes 259 first-time visitors and 69 returning visitors on average). HEDDS includes interagency results from samples analyzed by multiple laboratories, and then made available on a common web platform of surveillance data and assessments. This forum will help monitor the potential spread of the H5N1 influenza virus in wild birds should the disease arrive in North America. To date for 2008, HEDDS received data representing 77,769 samples, which were collected by 146 contributing institutions from 531 users representing 106 distinct submitting institutions. HEDDS was also visited by individuals from 17 countries including the United States.

Customized reports are created as individual users request them. Between April 1, 2008, and March 20, 2009, six WebEx training sessions were provided for State and Federal collaborators. The HEDDS public website displayed results from 340,698 wild birds tested during the 2008 and previous seasons. Results and data are displayed for all 50 States, as well as the District of Columbia and seven Freely Associated States and Territories. As of March 2009, all samples tested in the United States have been negative for HPAI H5N1. In addition to displaying results of avian influenza testing in the United States, the HEDDS site also hosts a public access site, a joint USDA-DOI table of avian influenza virus results of the low pathogenic subtypes, an electronic mailing list with 208 subscribers nationwide, and an enhanced user log-in, data validation functions for data importing, and an expanded browse and search capability.

The HEDDS system also offers a RSS (Really Simple Syndication) feed of HEDDS updates with an average of 26 views per day. In collaboration with USDA, the DOI HEDDS site continues an automated data “push” system for updating of HEDDS results to keep participants up-to-date on avian influenza scientific and media information.

7.3.1.1. Complete

USDA, in coordination with DHS, HHS, DOI, and the Environmental Protection Agency, shall partner with State and tribal entities, animal industries, individual animal owners, and other affected stakeholders to eradicate any influenza outbreak in commercial or other domestic birds or domestic animals caused by a virus that has the potential to become a human pandemic strain, and to safely

dispose of animal carcasses. Measure of performance: at least one incident management team from USDA on site within 24 hours of detection of such an outbreak.

A USDA Foreign Animal Disease Diagnostician will be on site within 8 hours of notification and be supported by additional resources as necessary. Six Veterinary Response or Incident Management Teams (IMTs) also are trained and capable of deploying to any State, including all of the priority poultry States. IMTs participate in many training exercises and have deployed to significant real-world incidents, such as major hurricanes and disease outbreaks.

The National Veterinary Stockpile (NVS) has demonstrated on several occasions its ability to deploy within 24 hours the resources States will need to depopulate, dispose, and decontaminate during highly pathogenic avian influenza outbreaks. DOI is prepared to respond in coordination with USDA and other agencies, on wildlife issues relative to an influenza outbreak in commercial or domestic birds or animals. As a result of extensive collaborations, USDA, DHS, HHS, EPA, and others have identified key research priorities for advancing decontamination efforts and safe disposal of carcasses. EPA's carcass disposal guidelines for State and Federal use, as well as USDA's educational modules, provide accessible carcass management guidance to industry and stakeholders.

7.3.1.2. Complete

USDA shall coordinate with DHS and other Federal, State, local, and tribal officials, animal industry, and other affected stakeholders during an outbreak in commercial or other domestic birds and animals to apply and enforce appropriate movement controls on animals and animal products to limit or prevent spread of influenza virus. Measure of performance: initial movement controls in place within 24 hours of detection of an outbreak.

USDA has policies and procedures in place that restrict animal movement beginning with the first indication of infection. Our response plans and "Playbook" define our coordination with DHS and other Federal, State, local, and tribal officials, animal industry, and other affected stakeholders. Our responses to actual incidents of low pathogenic avian influenza (LPAI) test communications, logistics, operations, planning, and finance and administrative capabilities.

Responses to LPAI incidents that require movement control and depopulation most closely resemble the response that would be carried out in the case of an HPAI outbreak. In FY 2007, a coordinated response was conducted to four, and in FY 2008 to two, low pathogenic avian influenza incidents in commercial operations, with initial movement controls placed within 24 hours of detection of an outbreak.

7.3.1.3. Complete

USDA shall be prepared to provide near real-time technical information and policy guidance for State and tribal entities, animal industries, and individuals, on best practices to prevent the spread of avian influenza in commercial and other domestic birds and animals during an outbreak, within 4 months. Measure of performance: information and guidance distributed within 72 hours of confirmed outbreak and report available describing type and amount of information, and audiences to whom delivered.

We have developed, and continue to update, response guidelines that incorporate best practices to prevent the spread of avian influenza during an outbreak. These response plans are a joint effort among industry and Federal, State, and tribal governments. Plans are in place to provide near real-time technical information and policy guidance to our response partners and members of the public affected by the outbreak. Information and guidance is also provided through ongoing media communications and industry outreach efforts.

7.3.2.1. Complete

USDA shall activate plans to distribute veterinary medical countermeasures and materiel from the NVS to Federal, State, local, and tribal influenza outbreak responders within 24 hours of confirmation of an outbreak in animals of influenza with human pandemic potential, within 9 months. Measure of performance: NVS materiel distributed within 24 hours of confirmation of an outbreak.

The NVS has demonstrated on two occasions its ability to deploy countermeasures within 24 hours. It exercises frequently (three times within the last year) with States to reaffirm this ability and to help States plan and practice their request, receipt, processing, and delivery of the countermeasures to responders in the field. Its commercial partners who respond constantly to all hazards for other agencies routinely arrive within 24 hours, and within days, are able to provide large numbers of trained, medically qualified personnel (600 within 3 days, 1,000 within a week) with equipment to support State depopulation, disposal, and decontamination efforts.

7.3.3.1. Complete

USDA, in coordination with DOS, shall partner with appropriate international, Federal, State, and tribal authorities, and with veterinary medical associations, including the American Veterinary Medical Association, to reduce barriers that inhibit veterinary personnel from crossing State or national boundaries to work in an animal influenza outbreak response, within 9 months. Measure of performance: agreements or other arrangements in place to facilitate movement of veterinary practitioners across jurisdictional boundaries.

Federal veterinary personnel, including those dispatched through the National Animal Health Emergency Reserve Corps, would be able to cross State lines to work in an animal influenza outbreak response. Internationally, APHIS Veterinary Services (VS) signed a Memorandum of Understanding in 2004 with Australia, Canada, Ireland, New Zealand, and the United Kingdom to form the International Animal Health Emergency Reserve (IAHER) which is able to provide skilled and competent personnel, such as veterinarians, in an animal health emergency. It has been exercised with a simulation and by table-top.

7.3.4.1. Complete

USDA shall assess the outbreak response surge capacity activities that other Federal partners, including the DOD, may be able to support during an outbreak of influenza in animals and ensure that mechanisms are in place to request such support, within 6 months. Measure of performance: written assessment completed and all necessary activation mechanisms in place.

The resources and surge capacity activities that Federal partners will be able to provide during an animal influenza outbreak have been assessed through an interagency process. USDA has produced a document that defines the processes to be used to obtain those resources, along with the roles and responsibilities of various partner agencies. As a result, necessary activation mechanisms have been clarified and are in place.

7.3.5.1. Complete

USDA, in coordination with DHS, DOI, and HHS, shall work with State, local, and tribal partners, industry groups, and other stakeholders to develop, clear and coordinated pre-scripted public messages that can later be tailored to the specifics of a given outbreak and delivered by trained spokespersons, within 3 months. Measure of performance: appropriate informational and risk mitigation messages developed prior to an outbreak, then shared with the public within 24 hours of an outbreak.

USDA developed pre-scripted risk mitigation messages in partnership with DOI, HHS, and DHS that were finalized and reformatted into a series of three avian influenza scenarios and key messages to be used in the event of a detection in the United States. The messages were posted on the www.flu.gov and

www.usda.gov/birdflu websites in 2006. We continue to work with our partners to develop additional messages about animal health, food safety, and guidance for the public.

7.3.5.2. Complete

USDA and HHS, in coordination with DHS, State, local, and tribal partners, industry groups, and other stakeholders, shall develop guidelines to assure the public of the safety of the food supply during an outbreak of influenza in animals, within 6 months. Measure of performance: guidelines for various outbreak scenarios produced and shared with partners; within first 24 hours of an outbreak, appropriately updated guidelines on food safety shared with the public.

Food safety guidelines for avian influenza have been developed in the form of message maps for various potential influenza outbreak scenarios. These guidelines have been shared with stakeholders and are available at the website www.usda.gov/birdflu. The messages can be quickly modified, as needed, to serve other outbreak scenarios.

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Chapter 8: Law Enforcement, Public Safety, and Security

8.1.1.2. Complete

DHS, in coordination with DOJ, HHS, DOL, and DOD, shall develop a pandemic influenza tabletop exercise for State, local, and tribal law enforcement/public safety officials that they can conduct in concert with public health and medical partners, and ensure it is distributed nationwide within 4 months. Measure of performance: percent of State, local, and tribal law enforcement/public safety agencies that have received the pandemic influenza tabletop exercise.

A tabletop exercise template has been developed for use by public health authorities. DHS is continuing to work with Federal partners to develop pandemic influenza tabletop exercises for State, local, and tribal law enforcement/public safety officials that can be conducted in concert with medical and public health entities.

8.1.1.4. Complete

DOJ shall ensure that appropriate Federal and State Court personnel are provided the information necessary to enable them to plan for the continuity of critical judicial functions during a pandemic. Measure of performance: this plan made available to all appropriate Federal and State court personnel.

Federal Court Administrators as well as national organizations representing the State Courts have been provided a plan for the continuity of judicial functions and other information for further distribution. Additionally, a working group was convened with court and other representatives to share information relating to the continuity of the courts and other components of the justice system. A group of experts was convened to examine this issue and published "Guidelines for Pandemic Emergency Preparedness Planning: A Road Map for Courts." This has been made available to court personnel nationwide. An ongoing dialogue is being maintained to update information as needed.

8.1.2.1. Complete

DOJ, in coordination with HHS, DOL, and DHS, shall convene a forum for selected Federal, State, local, and tribal law enforcement/public safety personnel to discuss the issues they will face in a

pandemic influenza outbreak and then publish the results in the form of best practices and model protocols within 4 months. Measure of performance: best practices and model protocols published and distributed.

DOJ sponsored a forum in Chicago for more than 200 criminal justice professionals in May 2006. A [website](#) is being used to post information covered at the forum. As an outgrowth of the forum, a consortium of justice system experts was created to facilitate assisting local justice system planning efforts.

8.1.2.2. Complete

DOJ shall advise State Governors of the processes for obtaining emergency Federal law enforcement assistance, within 3 months. Measure of performance: all State Governors advised.

On May 31, 2006, the Attorney General sent a letter to each Governor outlining the procedures for obtaining Federal law enforcement assistance under the Emergency Federal Law Enforcement Assistance provisions of the Justice Assistance Act of 1984. The letter recognized that pre-event collaborative planning would have improved the Katrina response and stressed that the goal was “to ensure that any future response, whether to a natural disaster, a pandemic influenza outbreak, or an act of terrorism occurs as expeditiously as possible.” A sample form for making the required written response was provided, as well as the name and telephone number of a person to contact with any questions regarding the procedures.

8.1.2.3. Complete

DOJ shall advise State Governors of the processes for requesting Federal military assistance under the Insurrection Act within 3 months. DOD, after coordination with DOJ, shall publish updated policy guidance on Military Assistance during Civil Disturbances, within 6 months. Measure of performance: all State Governors advised and guidance published.

DOJ developed a protocol in consultation with DOD and DHS and sent a letter to all State Governors detailing the processes required for requesting aid as described above.

8.1.2.4. Complete

HHS and DOJ shall ensure consistency of the CDC Public Health Emergency Law Course with the National Strategy for Pandemic Influenza (Strategy), this Plan and other Federal pandemic documents and then disseminate the CDC Public Health Emergency Law Course across the United States within 6 months. Measure of performance: distribution of presentations of reviewed public health emergency law course to all States.

The Public Health Emergency Law (PHEL) course for joint training of public health and emergency management professionals was distributed to all States in 2006. In March 2008, the HHS/CDC Public Health Law Program released an updated version, "Public Health Emergency Law, 3.0," which includes additional information on the legal basis for quarantine, isolation, and other public health interventions described in the National Strategy for Pandemic Influenza and the Community Strategy for Pandemic Influenza Mitigation.

The Public Health Law Program has also released an updated "Forensic Epidemiology, 3.0" course for joint training of public health and law enforcement professionals in coordinated investigation of suspected bioterrorist events. It includes a new scenario on the response to an influenza pandemic or other serious infectious disease threat. As of March 2009, the Public Health Law Program had received and fulfilled more than 2,978 requests for the CD-ROM that contains both these new courses.

The HHS/CDC Public Health Law Program also has developed and disseminated nationally the following

closely supportive tools to strengthen legal preparedness for pandemic influenza at the state, Tribal, and local levels: "Coordinated Implementation of Community Response Measures (Including Social Distancing) to Control the Spread of Pandemic Respiratory Disease: A Guide for Developing an MOU for Public Health, Law Enforcement, Corrections, and the Judiciary," and the "Social Distancing Law Assessment Template." (All of these tools are available at www.cdc.gov/phlp.)

8.1.2.5. Complete

DOD, in consultation with DOJ and the National Guard Bureau, and in coordination with the States as such training applies to support of State law enforcement, shall assess the training needs for National Guard forces in providing operational assistance to State law enforcement under either Federal (Title 10) or State (Title 32 or State Active Duty) in a pandemic influenza outbreak and provide appropriate training guidance to the States and Territories for units and personnel who will be tasked to provide this support, within 18 months. Measure of performance: guidance provided to all States.

The Department of Defense is supporting other agencies in the coordination and liaison for Federal and State response and support. The Department prepared and distributed an "all States" memorandum to the Adjutants General of each State. The memorandum reinforces the importance of training and readiness for National Guard forces as they prepare to respond to a pandemic and emphasized their unique capability to directly support State law enforcement. The memo directs the leadership of the States, District of Columbia, and U.S. Territories to coordinate with their Attorneys General and other law enforcement authorities to set the required framework for augmentation for their respective National Guard units, if requested.

8.1.2.6. Complete

DOD, in consultation with DOJ, shall advise State Governors of the procedures for requesting military equipment and facilities, training and maintenance support as authorized by 10 U.S.C. §§ 372-74, within 6 months. Measure of performance: all State governors advised.

The National Guard Bureau (NGB) is the coordinator and liaison for Federal and State response and military support. As coordinated with the Joint Staff J-5/J-3, OSD, DOJ, and NGB in Washington, D.C., the NGB has signed and distributed an all States memorandum to The Adjutant General (TAG) of each State and territory. This memo reinforces to the Governors, TAGs, and other Senior State and Territorial Officials the procedures for requesting Defense Support of Civil Authorities to include: military equipment, facilities, training, and maintenance support as authorized by U.S. Code.

8.1.2.7. Complete

DHS, in coordination with DOJ, DOD, DOT, HHS, and other appropriate Federal Sector-Specific Agencies, shall convene a forum for selected Federal, State, local, and tribal personnel to discuss EMS, fire, emergency management, public works, and other emergency response issues they will face in a pandemic influenza outbreak and then publish the results in the form of best practices and model protocols within 4 months. Measure of performance: best practices and model protocols published and distributed.

In a February 2007 forum hosted by the U.S. Fire Administration, participants reviewed interim guidance and formally adopted a pandemic influenza planning and preparation model of best practices for national publication and distribution. The Best Practices and Model Protocols are available on the USFA's website: www.usfa.dhs.gov/fireservice/subjects/ems/pandemicflu/. The Best Practices and Model Protocols were provided to the USFA Publications Catalog/library for stakeholder access as well. A follow-up with stakeholders from the forum will be conducted via an email campaign in the summer of 2008. All participants

were asked to review the best practices and guidelines that were developed to assess their current practicality and make appropriate recommendations to ensure they reflect current guidance. As protocols are updated and revised, best practices will then be posted on the USFA website with a reference link to flu.gov and will be sent out following the same distribution plan that was utilized originally.

8.1.3.1. Complete

HHS, in coordination with DOL, shall provide clear guidance to law enforcement and other emergency responders on recommended preventive measures, including pre-pandemic vaccination, to be taken by law enforcement and emergency responders to minimize risk of infection from pandemic influenza, within 6 months. Measure of performance: development and dissemination of guidance for law enforcement and other emergency responders.

Working in partnership with the Department of Justice, HHS/CDC has prepared pandemic influenza checklists for law enforcement personnel and other emergency responders for a severe influenza pandemic. These documents have received extensive review from police unions and professional organizations. Documents include the [Correctional Facilities Pandemic Influenza Planning Checklist](#) (for use in jails and prisons); and the [Law Enforcement Pandemic Influenza Planning Checklist](#) (for police chiefs and sheriffs).

The OSHA document [Guidance on Preparing Workplaces for an Influenza Pandemic](#) is applicable to the law enforcement community. Some additional information for emergency responders can also be found in the OSHA guidance document [Pandemic Influenza Preparedness and Response Guidance for Healthcare Workers and Healthcare Employers](#). OSHA also has released for review [Proposed Guidance on Workplace Stockpiling of Respirators and Facemasks for Pandemic Influenza](#).

8.3.1.1. Complete

HHS, in coordination with DOJ, DOS, and DHS, shall determine when and how it will assist States in enforcing their quarantines and how it will enforce a Federal quarantine, within 9 months. Measure of performance: guidelines on quarantine enforcement available to all States.

HHS/CDC has developed guidance for State and local partners that defines two types of quarantine: 1) “Voluntary household quarantine,” which means that infected or exposed persons voluntarily stay at home and avoid contact with people outside their households, and 2) “Mandatory quarantine,” which means that quarantine (at home or elsewhere) is physically enforced.

HHS/CDC is unlikely to recommend mandatory quarantine during a pandemic, except in a few special situations at ports of entry during the earliest stages of a severe pandemic that breaks out overseas, if people refuse requests for voluntary quarantine. HHS/CDC is likely to recommend voluntary household quarantine, which is one of the major components of the [Community Mitigation Strategy for Pandemic Influenza](#).

8.3.2.1. Complete

DOJ, DHS, and DOD shall engage in contingency planning and related exercises to ensure they are prepared to maintain essential operations and conduct missions, as permitted by law, in support of quarantine enforcement and/or assist State, local, and tribal entities in law enforcement emergencies that may arise in the course of an outbreak, within 6 months. Measure of performance: completed plans (validated by exercise(s)) for supporting quarantine enforcement and/or law enforcement emergencies.

This task was met by:

- 1) Incorporating the pandemic influenza information into the existing National exercise program focusing on biological threats to ensure consistency with related operations under similar conditions pursuant to the NRF;
- 2) Achieving economies of scale in terms of personnel and other planning and exercise costs;
- 3) Avoiding duplication of effort with respect to, or inconsistency of approach under, differing response plans through the development and implementation of the Pandemic Influenza Exercise Series (PIX);
- 4) Meeting with the National Governor's Association (NGA) to ensure that DHS Pandemic Influenza Cabinet Level Exercise (CLE), Senior Officials Exercise (SOE), and functional exercise planning efforts were built off of and supported the PI Table-Top Exercise (TTX) planning efforts, ensuring consistent goals and objectives among the PIX component exercises;
- 5) Conducting exercises (the Office of National Security Coordination (ONSC)), focusing on the Continuity of Operations (COOP) aspects of a PI outbreak while the Office of Grants and Training (G&T) Training Division coordinated with George Washington University to develop a COOP Initiative course. The course concentrates initially on owners and operators of critical infrastructure and key resources (CI/KR) in the context of pandemic influenza. This approach serves the need identified in the President's National Strategy for Pandemic Influenza (NSPI), to integrate the private sector into both national preparedness and national response efforts. The COOP-related findings and products were applicable to a range of contexts, including the more general category of contagious diseases and the impact of bioterrorism incidents.

8.3.2.2. Complete

DHS, in coordination with DOJ, DOD, DOT, HHS, and other appropriate Federal Sector-Specific Agencies, shall engage in contingency planning and related exercises to ensure they are prepared to sustain EMS, fire, emergency management, public works, and other emergency response functions during a pandemic, within 6 months. Measure of performance: completed plans (validated by exercise(s)) for supporting EMS, fire, emergency management, public works, and other emergency response functions.

During the USFA forum that was conducted, stakeholders reviewed interim guidance and formally adopted a pandemic influenza planning and preparation model of best practices for national publication and distribution.

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Chapter 9: Institutions: Protecting Personnel and Ensuring Continuity of Operations

9.1.1.1. Complete

DHS, in coordination with HHS, DOD, and DOL shall provide pandemic influenza COOP guidance to the Federal departments and agencies within 6 months. Measure of performance: COOP planning and personnel protection guidance provided to all departments for use, as necessary, in updating departmental pandemic influenza response plans.

DHS worked within a Homeland Security Council-led interagency process to develop pandemic influenza continuity-of-operations guidance for the Federal departments and agencies that was distributed in a memo to the interagency community in March 2006.

9.1.1.2. Complete

The Office of Personnel Management (OPM), in coordination with DHS, HHS, DOD, and DOL, shall provide guidance to the Federal departments and agencies on human capital management and COOP planning criteria related to pandemic influenza, within 3 months. Measure of performance: guidance provided to all departments for use, as necessary, in adjusting departmental COOP plans related to pandemic influenza.

OPM developed and distributed web-based human capital management guidance to Federal departments and agencies for use in protecting the civilian Federal workforce and ensuring continuity of operations of the Federal Government in the event of a pandemic influenza outbreak. In addition, OPM provided training for the Federal human resources and emergency management communities regarding this guidance. Finally, in coordination with other key Federal agencies, OPM scheduled a series of “Town Hall” meetings to present information to Federal employees on planning for a possible pandemic health crisis.

9.1.1.3. Complete

OPM, in coordination with DHS, HHS, DOD, and DOL, shall update the guides Telework: A Management Priority, A Guide for Managers, Supervisors, and Telework Coordinators; Telework 101 for Managers: Making Telework Work for You; and, Telework 101 for Employees: Making Telework Work for You, to provide guidance to Federal departments regarding workplace options during a pandemic, within 3 months. Measure of performance: updated telework guidance provided to all departments for use, as necessary, in updating departmental COOP plans related to pandemic influenza.

OPM developed and distributed web-based guidance regarding policies and procedures to be followed by Federal agencies if and when it becomes necessary for civilian Federal employees to work at home or at another location (i.e., “telework”) in the event of a pandemic influenza outbreak. In addition, OPM provided training for the Federal human resources and emergency management communities regarding this guidance. Finally, in coordination with other key Federal agencies, OPM has scheduled a series of town hall meetings to present information to Federal employees on telework and other strategies for dealing with a possible pandemic health crisis.

9.1.2.1. Complete

DHS, in coordination with Sector-Specific Agencies, critical infrastructure owners and operators, and States, localities and tribal entities, shall develop sector-specific planning guidelines focused on sector-specific requirements and cross-sector dependencies, within 6 months. Measure of performance: planning guidelines developed for each sector.

In coordination with interagency partners and the individual Government Coordinating Councils (GCC) and Sector Coordinating Councils (SCC), DHS has completed individual sector specific plans for all 18 of the Critical Infrastructure and Key Resource (CI/KR) sectors. Important components of the final plans and overall pandemic preparedness issues were highlighted in a series of webinars for which we have funding have been completed. The largest number of participants to register for the webinars was the Emergency Services Sector where more than 800 people registered. The webinars were able to accommodate more than 500 as the contractor increased the number of lines and the others were sent emails to view the webinars off line for the next sixty days. Several of the sectors did not wish to conduct individual webinars since their sectors had already conducted extensive exercises (Banking and Finance) and Nuclear had already conducted training. The webinar schedule was as follows:

June 17, 2008	IT and Communications
July 11, 2008	Pandemic Update with DHS CI/KR and CDC

July 17, 2008	Water
September 24, 2008	Commercial Facilities
October 22, 2008	Dams/Electric/Oil and Natural Gas
October 29, 2008	Food and Agriculture
December 12, 2008	Emergency Services I
December 16, 2008	Defense Industrial Base
December 19, 2008	Emergency Services II

DHS and the other agencies worked collaboratively to create the Critical Infrastructure Influenza Pandemic Preparedness, Response, and Recovery Guide. This guide is available at www.ready.gov. DHS directly supports all 18 CI/KR SCCs and GCCs and a Final CI/KR planning and preparedness guide which sets the framework for the sector-specific guides, was published in October 2006 and is available on www.flu.gov.

9.1.2.2. In Progress

DHS, in coordination with States, localities and tribal entities, shall support private sector preparedness with education, exercise, training, and information sharing outreach programs, within 6 months. Measure of performance: preparedness exercises established with private sector partners in all States and U.S. Territories.

This action item is in progress. Below are dates of tabletop exercises and scenarios.

May 22, 2008-Four scenarios were discussed: 1) warning of VBIED attacks in several cities; 2) a confirmatory press conference by the Secretary of DHS; 3) attacks followed by the DHS “one hour” rule, meaning that within an hour the Secretary of DHS would make a press statement; and 4) warning of a large-scale flu epidemic

July 10, 2008-The participants were presented with four complex scenarios: a possible outbreak of foot and mouth disease, warning of a terrorist attack with explosives in several cities, actual explosions in three cities and warning of a flu outbreak in Asia

July 14, 2008-Transportation in a pandemic; authorization to move goods into affected areas

October 28, 2008-The scenario focused on the possibility of disease or a flu outbreak following a natural disaster like a hurricane

December 3, 2008-Formatting and collecting data for CI/KRs

March 24, 2009-Biosurveillance; NBIS and NBIC coordination

9.1.3.1. In Progress

DHS, in coordination with all the Sector-Specific Agencies, shall conduct forums, conferences, and exercises with key critical infrastructure private sector entities and international partners to identify essential functions and critical planning, response and mitigation needs within and across sectors, and validate planning guidelines, within 6 months. Measure of performance: planning guidelines validated by collaborative exercises that test essential functions and critical planning, response, and mitigation

needs.

In coordination with interagency partners and the individual Government Coordinating Councils (GCC) and Sector Coordinating Councils (SCC), DHS has completed individual sector specific plans for all 18 of the Critical Infrastructure and Key Resource (CI/KR) sectors. Important components of the final plans and overall pandemic preparedness issues were highlighted in a series of webinars for which we have funding have been completed. The largest number of participants to register for the webinars was the Emergency Services Sector where more than 800 people registered. The webinars were able to accommodate more than 500 as the contractor increased the number of lines and the others were sent emails to view the webinars off line for the next 60 days. Several of the sectors did not wish to conduct individual webinars since their sectors had already conducted extensive exercises (Banking and Finance) and Nuclear had already conducted training. The webinar schedule was as follows:

June 17, 2008	IT and Communications
July 11, 2008	Pandemic Update with DHS CI/KR and CDC
July 17, 2008	Water
September 24, 2008	Commercial Facilities
October 22, 2008	Dams/Electric/Oil and Natural Gas
October 29, 2008	Food and Agriculture
December 12, 2008	Emergency Services I
December 16, 2008	Defense Industrial Base
December 19, 2008	Emergency Services II

DHS and the other agencies worked collaboratively to create the Critical Infrastructure Influenza Pandemic Preparedness, Response, and Recovery Guide. This guide is available at flu.gov and www.ready.gov. DHS directly supports all 18 CI/KR SCCs and GCCs and a Final CI/KR planning and preparedness guide which sets the framework for the sector-specific guides, was published in October 2006 and is available on www.flu.gov. The sector-specific guides are posted on www.hsin.gov as well as many State and local websites and private sector websites.

9.1.3.2. Complete

DHS, in coordination with all the Sector-Specific Agencies, shall develop and coordinate guidance regarding business continuity planning and preparedness with the owners/operators of critical infrastructure and develop a Critical Infrastructure Influenza Pandemic Preparedness, Response, and Recovery Guide tailored to national goals and capabilities and to the specific needs identified by the private sector, within 6 months. Measure of performance: Critical Infrastructure Influenza Pandemic Preparedness, Response, and Recovery Guide developed and published (www.flu.gov).

DHS and the other agencies worked collaboratively to create the Critical Infrastructure Influenza Pandemic Preparedness, Response, and Recovery Guide. This guide is available at www.flu.gov and www.ready.gov.

9.1.4.1. Complete

HHS, in coordination with DHS, DOL, OPM, Department of Education, VA, and DOD, shall develop

sector-specific infection control guidance to protect personnel, governmental and public entities, private sector businesses, and CBOs and FBOs, within 6 months. Measure of performance: sector-specific guidance and checklists developed and disseminated on www.flu.gov.

Sector-specific infection control guidance available at www.flu.gov includes checklists and other products targeted to individuals and families, educators at schools and colleges, faith-based and community organizations, healthcare workers, businesses, State and local governments, agricultural workers, transportation workers, and law enforcement workers. These products have been developed by HHS/CDC, DOL/OSHA, VA, DOD, and the Department of Education (Ed).

Ed and HHS guidance products for educators, for example, include:

Pandemic Flu: A Planning Guide for Educators

Child Care and Preschool Pandemic Influenza Planning Checklist

School District (K-12) Pandemic Influenza Planning Checklist

Colleges and Universities Pandemic Influenza Planning Checklist

9.1.4.2. Complete

HHS, in coordination with DHS, DOL, EPA, Department of Education, VA, and DOD, shall develop interim guidance regarding environmental management and cleaning practices including the handling of potentially contaminated waste material, within 3 months, and revise as additional data becomes available. Measure of performance: development and publication of guidance and checklists on www.flu.gov and disseminated through other channels.

As of April 2009, HHS/CDC developed guidance on environmental management and cleaning practices for use during an influenza pandemic, working in collaboration with the Environmental Protection Agency, the Department of Labor, the Department of Education, the Department of Veterans Affairs, and the Department of Defense.

Topics addressed in the “[Interim Guidance on Environmental Management of Pandemic Influenza A Virus](#)” include:

Cleaning and disinfection of surfaces in healthcare facilities, homes, schools, and businesses

Cleaning and disinfection of laundry

Disposal of solid wastes

Disposal of regulated medical waste

The Occupational Safety and Health Administration, Department of Labor (OSHA/DOL), has developed guidance for workplaces, *Guidance for Preparing Workplaces for an Influenza Pandemic*. OSHA has also developed *Pandemic Influenza Preparedness and Response Guidance for Healthcare Workers and Healthcare Employees*.

9.3.1.1. Complete

DHS shall map and model critical infrastructure interdependencies across and within sectors to share critical information with sectors and identify national challenges during a pandemic, within 6 months.

Measure of performance: critical infrastructure modeling capability established and mapping of critical infrastructure interdependencies completed.

DHS has established a critical infrastructure modeling capability and mapping of critical infrastructure interdependencies. A report on this modeling capability was submitted to the Homeland Security Council.

9.3.1.2. Complete

DHS shall develop and operate a national-level monitoring and information-sharing system for core essential services to provide status updates to critical infrastructure dependent on these essential services, and aid in sharing real-time impact information, monitoring actions, and prioritizing national support efforts for preparedness, response, and recovery of critical infrastructure sectors within 12 months. Measure of performance: national-level critical infrastructure monitoring and information-sharing system established and operational.

DHS completed the IT Architecture/Platform for the tracking system--which is compatible with the Common Operating Picture (COP)--to monitor the integrity of critical infrastructure function and operational continuity in near real time. This platform is currently capable of near real-time information collection, tracking, and collaboration with Critical Infrastructure and Key Resource (CI/KR) owners and operators, including the healthcare sector. This web-based architecture meets the requirement for near real-time data and is only dependent on the end user entry of data. This architecture is compatible with the DHS Common Operating Picture (COP) Platform so that information from this system can be integrated into the COP. This system is currently in place and operational in accordance with the National Response Framework (NRF).

The Federal Government remains highly engaged in pandemic preparedness activities. The following actions are not due until 2011, and will be reported on in the future.

6.1.8.1. HHS shall, to the extent feasible, work with the pharmaceutical industry to develop, within 60 months, domestic vaccine production capacity sufficient to provide vaccine for the entire U.S. population within 6 months after the development of a vaccine reference strain. Measure of performance: domestic vaccine manufacturing capacity in place to produce 300 million courses of vaccine within 6 months of development of a vaccine reference strain during a pandemic.

HHS awarded two contracts in June 2007 for retrofitting existing facilities to manufacture pandemic influenza vaccine and thus expand within three years domestic manufacturing surge capacity by 150 million doses. On January 15, 2009, HHS announced a \$487 million multiple year contract with Novartis Vaccines and Diagnostics, Inc., to build the first U.S. facility to manufacture cell-based vaccine for seasonal and pandemic flu. Because cell-based influenza vaccine can be made faster and in greater quantities than traditional vaccine, the new facility is expected to increase the U.S. capacity to make pandemic influenza vaccine by at least 25 percent. In February 2009, a HHS/BARDA-supported vaccine manufacturer submitted a Biologics License Application (BLA) to FDA for licensure of a cell-based influenza vaccine.

Some actions in the plan are specifically targeted at State, local, and other non-Federal entities. A number of Federal departments, including HHS, DHS, and DOT, have established and implemented methods of collaboration and cooperation to maximize Federal pandemic planning assistance for State, local, and non-Federal entities. These Federal departments continue to work closely with non-Federal partners directly and through other coordinating mechanisms including government and professional associations, with the aim of meeting the goals and performance measures established in the action items listed below.

One of the largest Federal-interagency efforts to help the Nation meet these goals is the HHS-led two-stage assessment process of 50 State, 5 U.S. Territory and District of Columbia (referred to as states) pandemic influenza operating plans. Stage-1 spanned August 2006 to January 2007 and Stage-2 ran from January 2007

to December 2008, and included the participation of 14 Federal departments and White House Offices. Each State received a copy of its individual scores and a copy of the summary report. The summary report was delivered to the White House Homeland Security Council and released publicly. The State guidance, as well as final assessments and scores are posted at www.flu.gov/professional/states/state_assessment.html and www.flu.gov/states/guidance031108.pdf.

DHS, HHS, and DOT in cooperation with other Federal partners and State, local and private sector stakeholders including the airline industry, continue to refine and operationalize protocols for the screening of international travelers during a pandemic. These screening protocols will be flexible, scalable, and risk-based, and only implemented when warranted by the severity and nature of the disease. The screening protocols are intended to identify ill travelers or those potentially exposed to the disease in order to slow disease spread and so that appropriate health care or education can be given. The Federal policy that has been clearly presented to stakeholders at all levels is that U.S. international ports of entry will remain open to international travelers and cargo and every effort will be made to not interrupt travel patterns.

DHS, working in coordination with other Federal departments and agencies as well as State, local, and private sector partners, developed the Critical Infrastructure Influenza Pandemic Preparedness, Response, and Recovery Guide. This guide is available at www.flu.gov and www.ready.gov. DHS has been working closely with Federal, state, local and private sector partners to address the potential impact of an influenza pandemic on critical infrastructures and key resources of our Nation. In coordination with interagency partners and the individual Government Coordinating Councils (GCC) and Sector Coordinating Councils (SCC), DHS has drafted individual sector specific guides for all 18 of the Critical Infrastructure and Key Resource (CI/KR) sectors. Important components of the final guides and overall pandemic preparedness issues were highlighted in a series of webinars conducted for stakeholders.

Since April 2009, HHS/CDC has worked closely with non-Federal partners, such as professional associations and State and local health departments throughout the country to respond to the ongoing pandemic of 2009 H1N1 influenza.

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.

5.1.3.3. 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.

6.1.1.1. The Federal Government shall, and State, local, and tribal governments should define and test actions and priorities required to prepare for and respond to a pandemic, within 6 months. Measure of performance: completion and communication of national, departmental, State, local, and tribal pandemic influenza response plans; actions and priorities defined and tested.

In 2006 and 2008, each Federal department and agency developed and then updated plans to prepare their workforce for a severe influenza pandemic. These plans were all subsequently revised in 2008 to incorporate updated elements of pandemic planning. A checklist was developed to guide the development of each Federal departmental and agency plan, guide actions and priorities, and ensure coordination across the U.S. Government. The elements of Federal Government preparedness plans are available online, at www.flu.gov/planning-preparedness/federal/operationalplans.html. State, local, and tribal governments can use this checklist to inform their own influenza planning efforts.

The USG has also defined actions and priorities for State-level pandemic influenza operational plans and most U.S. States and Territories participated in a 2008 Federal review of these plans. Results of that review can be found online at www.flu.gov/professional/states/state_assessment.pdf.

Many departments and agencies have since also exercised their plan. For example, in June 2008, VA held a national pandemic flu exercise that examined relationships between VA medical facilities and their local, regional, and Federal Government public health and emergency management resources. Lessons learned from the exercise have helped define future strategies for pandemic influenza and other broad-scale event management. As a follow-on to previous internal Departmental exercises, DOT held a planning seminar in December 2008 and senior level exercises in February 2009 to test and refine their Department-wide pandemic plan.

In 2007 and 2008 the Federal Government exercised both the domestic and international response actions departments and agencies will be implementing during a severe influenza pandemic. This Pandemic Influenza Exercise series, or PIX, brought together senior government officials to both refine response actions and establish priorities during the early and late stages of a pandemic when key activities will take place including international containment, screening or arriving international air passengers, and implementation of community mitigation strategies.

6.1.2.1. All health care facilities should develop and test infectious disease surge capacity plans that address challenges including: increased demand for services, staff shortages, infectious disease isolation protocols, supply shortages, and security.

6.2.1.4. All Federal, State, local, tribal, and private sector medical facilities should ensure that protocols for transporting influenza specimens to appropriate reference laboratories are in place within 3 months. Measure of performance: transportation protocols for laboratory specimens detailed in HHS, DOD, VA, State, territorial, tribal, and local pandemic response plans.

The Pandemic Influenza Guidance Supplement to the 2006 Public Health Emergency Preparedness Cooperative Agreement required States, territories, and eligible localities to coordinate protocols for influenza testing with tribal entities, and establish means of transportation for respiratory specimens to State public health laboratories when necessary.

HHS's Indian Health Service has also provided guidance to tribal health authorities recommending consideration of how respiratory specimens are delivered to off-site laboratories for processing, as well as guidance on development and coordination of protocols to ensure uninterrupted specimen transport services during a pandemic. HHS has also included information regarding specimen management (including shipping) in the [HHS Pandemic Influenza Plan, Supplement 2: Laboratory Diagnostics](#). More recent information has been circulated via a health alert network (HAN) update [Updated Interim Guidance for Laboratory Testing of Persons with Suspected Infection with Avian Influenza A \(H5N1\) Virus in the United States](#). Additionally, DOD transportation protocols follow [CDC guidelines](#) and are contained within January 2006 guidance "[Department of Defense Influenza Pandemic Preparation and Response Health Policy Guidance](#)."

The VA pandemic plan directs laboratories to follow proper specimen handling techniques and transport of infectious organisms or those recommended at the time of the pandemic (Sections 2.2.3.5 and 6.2.3.5) and to prepare in advance by having adequate storage space and appropriate supplies, either for diagnostic testing or storage for later epidemiologic testing.

6.2.1.5. State, local, and tribal entities should be prepared, in the event of a pandemic, to increase diagnostic testing for influenza and increase the frequency of reporting to CDC.

6.2.2.10. State, local, and tribal public health departments should develop relationships with hospitals and health care systems within their jurisdictions to facilitate collection of real-time or near real-time

clinical surveillance data from domestic acute care settings such as emergency departments, intensive care units, and laboratories.

6.2.2.11. State, local, and tribal public health departments should provide weekly reports on the overall level of influenza activity in their States or localities, with assistance from CDC epidemiologists and field officers posted within each State health department in collecting and reporting these data.

6.2.3.5. State, local, and tribal public health departments should acquire and deploy rapid diagnostic tests that are specific and sensitive for pandemic influenza strains, as soon as those tests are available.

6.3.1.1. State, local, and tribal pandemic preparedness plans should address the implementation and enforcement of isolation and quarantine, the conduct of mass immunization programs, and provisions for release or exception.

6.3.2.6. All health care facilities should develop, test, and be prepared to implement infection control campaigns for pandemic influenza, within 6 months.

6.3.4.1. Major medical societies and organizations, in collaboration with HHS, DHS, DOD, and VA, should develop and disseminate protocols for changing clinical care algorithms in settings of severe medical surge. Measure of performance: evidence-based protocols developed to optimize care that can be provided in conditions of severe medical surge.

Standards of Care Under Extreme Conditions: In March 2008, The American Nurses Association commissioned a white paper titled “Adapting Standards of Care Under Extreme Conditions: Guidance for Professionals During Disasters, Pandemics, and Other Extreme Emergencies.” This paper identifies the significant policy questions that need to be addressed and develops strategies that can guide health professionals, institutions, and policy makers in such challenging situations. It can be viewed at www.nursingworld.org.

Care for the Critically Ill During a Disaster: The Critical Care Collaborative (CCC)—a coalition of professional societies representing more than 100,000 healthcare professionals—led an effort to develop consensus recommendations for definitive care for the critically ill during a disaster, including: 1) current capabilities and limitations, 2) a framework for optimizing critical care surge capacity, 3) medical resources for surge capacity, and 4) a framework for allocation of scarce resources in mass critical care. This set of papers was published in the May 2008 edition of the journal *Chest* and can be viewed at www.chestjournal.org/.

Mass Critical Care in Pediatric Patients: As of April 2009, HHS/CDC was funding an expert working group that will identify a framework for the development of triage protocols and methods for prioritizing access to pediatric critical care resources, such as ventilators, during a mass casualty event such as a pandemic. It was planned that this working group would include representatives from a wide range of fields, including bioethics, critical care, disaster preparedness and response, emergency medical services, infectious disease, hospital medicine, law, military medicine, nursing, pharmacy, and respiratory care. The draft framework issued by the working group will be reviewed by an expanded group of stakeholders.

Triage Tools for Directing Patients to Appropriate Healthcare Venues: As of April 2009, HHS/CDC was working with partners from the clinical, public health, state and local government sectors to develop a standardized suite of triage tools to ensure that pandemic influenza patients receive care in appropriate venues, based on the patient’s clinical status and on hospital and community resources. During a severe pandemic, professional healthcare venues may include hospitals, long-term care facilities, walk-in clinics, and urgent care centers. Successful coordination of care among these venues will prevent hospitals from being overwhelmed by a huge surge in the patient population.

The triage tools will be tailored to the needs of specific healthcare groups, including emergency departments, 9-1-1 call centers, emergency medical services (EMS), primary care physicians, out-patient walk-in clinics, urgent care centers, long-term care facilities, alternative care facilities, home healthcare agencies, and public health departments. The tools will be validated via field evaluations during influenza seasons as well as via discussion-based exercises.

6.3.4.8. All hospitals should be prepared to treat patients with pandemic influenza (i.e., equipped and ready to care for: (1) a limited number of patients infected with a pandemic influenza virus, or other novel strain of influenza, as part of normal operations; and (2) a large number of patients in the event of escalating transmission of pandemic influenza).

6.3.4.9. All hospitals and health care systems should develop, test, and be ready to employ business continuity plans and identify the critical links in their supply chains as well as sources of emergency.

6.3.4.10. All health care systems, individually or collaborating with other facilities to develop local or regional stockpiles maintained under vendor managed inventory systems, should consider stockpiling consumable critical medical materiel (including but not limited to food, fuel, water, N95 respirators, surgical and /or procedural masks, gowns, and ethyl-alcohol based gels) sufficient for the peak period of a pandemic wave (2-3 weeks).

6.3.6.1. Prior to the declaration of a public health emergency, State, local, and tribal public health authorities should examine existing Federal laws, regulations, and requirements, State public health and medical licensing laws, the provisions of interstate emergency management compacts and mutual aid agreements, and other legal and regulatory arrangements to determine the extent to which they address barriers to the flow of qualified public health and medical personnel across jurisdictional lines or between health care facilities.

8.1.1.1. States should ensure that pandemic response plans adequately address law enforcement and public safety preparedness across the range of response actions that may be implemented, and that these plans are integrated with authorities that may be exercised by Federal agencies and other State, local, and tribal governments.

8.1.1.3. State, local, and tribal governments should review their legal authorities that may be needed to respond to an influenza pandemic, identify needed changes in the law, and pursue legislative action as appropriate.

8.1.1.5. States should ensure pandemic response plans address EMS, fire, public works, emergency management, and other emergency response and public safety preparedness.

8.1.4.1. State, local, and tribal law enforcement agencies should coordinate with appropriate medical facilities and countermeasure distribution centers in their jurisdictions (as recognized in Chapter 6, security at these facilities will be critical in the event of an outbreak) to coordinate security matters within 6 months.

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Additional Action Items

Additional actions have measures of performance and timeframes for assessment associated with a pandemic or animal outbreak in the United States. Although the H5N1 virus has not yet spread to the United States, the world is now in the midst of an influenza pandemic involving another strain of influenza. In late April 2009, human outbreaks associated with a novel influenza virus, 2009-H1N1 Influenza A, were confirmed in the United States and Mexico. On June 11, 2009, the WHO officially declared an influenza pandemic and raised

its pandemic alert phase to 6. However, because the response efforts to 2009 H1N1 flu are ongoing, the updates listed below do not address individual department or agency performance in the context of 2009 H1N1 flu related activities. If and how Federal departments and agencies were able to meet the requirements set forth in the below measures of performance (if applicable) in the context of 2009 H1N1 flu will be reported in a future update.

4.3.2.1. DOS, in coordination with DHS, HHS, DOD, and DOT, and in collaboration with foreign counterparts, shall support the implementation of pre-existing passenger screening protocols in the event of an outbreak of pandemic influenza. Measure of performance: protocols implemented within 48 hours of notification of an outbreak of pandemic influenza.

This action calls for implementing protocols within 48 hours of notification of an outbreak of pandemic influenza. The USG participated actively in International Civil Aviation Organization (ICAO) efforts to update aviation pandemic preparedness guidelines, including screening protocols. The guidelines are now posted on the ICAO public website. The United States also participated in an ICAO review in Asia to ensure that ICAO screening policies, training, and communication procedures were in place. In 2007 and 2008, ICAO extended the project to Africa and the Americas, and the USG again participated.

4.3.6.3. USDA, in coordination with DHS, USTR, and DOS, shall ensure that clear and coordinated messages are provided to international trading partners regarding animal disease outbreak response activities in the United States. Measure of performance: within 24 hours of an outbreak, appropriate messages will be shared with key animal/animal product trading partners.

This action calls for sharing of messages within 24 hours of detection of an avian influenza outbreak. Such an outbreak has not occurred in the United States. USDA continues to notify the Office of International Epizootics of all notifiable disease findings according to protocols established in conjunction with our trading partners. Additionally, USDA has produced a communications plan with specific messages to be distributed to the public and producers in the event of an animal disease outbreak.

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.

This action calls for rapid diagnostic tests, which are under development, to be integrated into screening protocols. HHS is encouraging and expediting private-sector development of influenza point-of-care (POC) diagnostics, in accordance with a national pandemic influenza diagnostic strategy developed by HHS, DOD, and VA. As part of this effort, HHS/CDC has issued contracts to biotechnology and device companies to:

Develop point-of-care tests

Produce viral reagents to support development of point-of-care tests

Conduct independent government evaluation of the new point-of-care prototype tests

Two contractors developed a point-of-care device and conducted clinical evaluations during the spring of 2009 under an FDA approved Investigational Device Exemption (IDE). Evaluations continue to enroll sufficient influenza infected patients. If HHS/FDA approval is achieved, a point-of-care test may be commercially available during 2010.

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.

Plans are complete to impose travel restriction measures within 24 hours of the decision to do so. Specifically, following an HHS public health finding as required by law, the USG could restrict travel from affected countries during a pandemic. Further, in coordination with other USG agencies, DOT/FAA may prohibit an aircraft from the affected area from entering U.S. airspace; or, if the aircraft is en route to the United States, divert that aircraft from its destination in the United States to another airport in the United States.

The U.S. Coast Guard also has authority to control the anchorage and movement of vessels in U.S. waters in the event of a disturbance or threatened disturbance of U.S. international relations. Finally, DOS, HHS, and DHS are coordinating border and travel measures pursuant to the North American Plan for Avian and Pandemic Influenza, and have discussed possible travel restrictions with Global Health Security Initiative member countries.

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.

This action calls for implementing protocols within 24 hours of notification of an outbreak of pandemic influenza. The USG has developed a Concept of Operations for airport entry screening and is now developing protocols for U.S. exit screening with input from stakeholders, including air carriers and cruise lines. When complete, the USG will share these U.S. exit screening protocols with other governments as possible templates for their own pre-departure screening. In the event of a pandemic, we will also refine them to respond to specific disease characteristics.

On screening protocols for civil aviation, the USG participates actively in International Civil Aviation Organization (ICAO) efforts to update aviation pandemic preparedness guidelines, including screening protocols. The guidelines are now posted on the ICAO public website. The United States also participated in an ICAO review in Asia to ensure that ICAO screening policies, training, and communication procedures were in place. In 2008, ICAO extended the project to Africa, with USG participation. ICAO and member countries, including the United States, will meet in Mexico City in May 2009 to extend the ICAO review process to the Americas.

On maritime screening, the USG also helped the World Health Organization (WHO) revise the International Health Regulations (IHRs) to include new strains of human influenza in the definition of reportable “public health emergencies of international concern.” The regulations give WHO authority to recommend to its Member States both entry and exit screening at ports, airports, and land borders. The revised IHRs went into effect in July 2007, and are applicable to maritime screening.

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.

Plans are complete to enable the USG to offer transportation technical support within 36 hours of an outbreak. DOS drafted, and is now updating a list of contacts at HHS, DHS, and DOT with whom it will coordinate transportation-related technical assistance to countries with outbreaks to offer such assistance within 36 hours 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.

This action calls for implementing screening within 48 hours of notification of an outbreak of pandemic influenza. Customs and Border Protection (CBP) currently conducts passive screening at U.S. ports of entry to identify ill arriving international travelers who may have a potentially quarantinable illness. This is made through visual inspection and interview conducted during routine performance of their duties. The U.S. Coast Guard will conduct passive surveillance for the symptoms of PI. Also, the U.S. Coast Guard has agreed to question the master of all vessels boarded prior to entry into port to obtain illness report information that the vessel submitted to HHS/CDC. In times of a Declared Health Emergency, HHS/CDC may request assistance in performing screening measures beyond the passive measures to include: health declaration made by the crew, traveler health questionnaire, and personal interview.

USDA, Plant Protection and Quarantine (PPQ), Veterinary Regulatory Services (VRS), Animal Quarantine and Inspection (AQI), Veterinary Medical Officer (VMO) staff will be available to provide veterinary expertise and assistance to DHS/CBP for the inspection and screening of animal products, animal by-products, and any international garbage issues that arise at the ports of entry with any declared HPAI, H5N1 emergency.

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.

The Federal Government has made a series of policy recommendations related to aviation, land border, and maritime entry and exit screening that focus on a risk-based approach to screening for illness at international ports of entry should a severe influenza pandemic begin abroad. These efforts will help delay entry of the virus into the United States, allowing time for last minute preparations to be made across the Nation. Since the adoption of these policies, the Federal Government has been developing a Concept of Operations and detailed screening protocols with a focus on screening at U.S.-based international airports - the most likely route for early introduction of the pandemic virus into the United States.

The Federal Government has considered the possibility of screening domestic flights for ill travelers during a severe influenza pandemic but has determined that the benefit of screening lies solely in its ability to delay entry of the virus into the United States. Once the virus has arrived in the United States, the Nation's focus and available resources will turn to implementation of both pharmaceutical (use of antiviral drugs and pre-pandemic vaccine) and non-pharmaceutical interventions as outlined in the [Community Strategy for Pandemic Influenza Mitigation](#). These strategies focus on a number of different school, workplace and community-based social distancing measures and interventions in the home including voluntary isolation and quarantine. These measures and interventions encourage the ill or exposed to stay home and not travel, thereby reducing unnecessary spread of the pandemic outside on one's home community.

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.

This action calls for developing announcements and warnings within 24 hours of notification of an outbreak of pandemic influenza. The Public Affairs Support Annex in the National Response Framework (NRF)

describes the interagency policies and procedures for incident and communications with the public, and the ESF #15 – External Communications Annex that outlines resources and capabilities for public affairs.

The Customs and Border Protection (CBP) Office of Public Affairs, in coordination with DHS, HHS/CDC, State Department, and other appropriate government agencies, has agreed to issue travel advisories through national, regional, and local media and to reach out to travel associations, and the travel industry (carriers, travel agents, cruise lines, airlines, rail, tour/charter groups). The primary vehicle to provide continuing updates is the www.cbp.gov website. Outreach coordination efforts with governmental partners and CBP public affairs officers stationed throughout the United States and with CBP international attaches are established through best practices. These methods have been validated through multiple exercises. The Department of State maintains the www.travel.state.gov website, with travel information for all countries.

The USDA Foreign Agriculture Service (FAS) and Animal and Plant Health Inspection Service (APHIS) are developing a joint action plan for foreign counterparts to help mitigate negative trade impact in the event of a confirmed case of HPAI in the United States. This issue is routinely handled by USDA's Foreign Service Officers to address domestic disease outbreaks with foreign counterparts.

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.

DHS and DOT, in coordination with support agencies, will 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 within 6 hours of the decision to limit or deny entry.

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.

Emergency systems are in place to notify key international, Federal, State, local territorial, tribal, and border stakeholders—including travel industry partners—about probable or confirmed cases or outbreaks of pandemic influenza in humans. Emergency systems are also in place to notify partners of outbreaks of highly pathogenic avian Influenza H5N1 in poultry. The “Interagency Playbook for Domestic Response to a Detection of Highly Pathogenic Avian influenza H5N1 Virus in Birds” has been completed and outlines the coordinated Federal interagency response to six scenarios that are believed to be plausible events should HPAI H5N1 virus enter the United States. Timetables within the Playbook specify when interagency notifications are to be made, and supporting material includes agencies' emergency operations center (EOC) contacts. In addition, USDA's “Highly Pathogenic Avian Influenza Emergency Response Plan Incident Communications Plan” outlines specific processes and procedures for notifying State and tribal governments, industry stakeholders, and the general public. HHS/CDC would utilize its Health Alert Network (HAN) to notify public health jurisdictions.

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.

DHS will activate ESF-1 Transportation in accordance with the National Response Framework (NRF). As the lead for ESF-1, the Department of Transportation (DOT) will assess and report on the status of the transportation sector. The reporting of the status of the transportation sector will be accomplished through the DOT Crisis Management Center using the information sharing mechanisms of the DOT modal administrations, the information sharing elements of the Transportation Sector Specific Plan of the National Infrastructure Protection Plan (NIPP), namely the Transportation Government Coordinating Council (GCC) and the Sector Coordinating Council (SCC), and through the National Infrastructure Coordination Center (NICC) of the DHS National Operations Center (NOC). DHS Transportation Security Administration stakeholder relations personnel will work with DHS/Infrastructure Protection (IP) and the NICC to use the GCC/SCC structure, Homeland Security Information Network (HSIN), and other outlets and partners as needed. TSA stakeholder relations and DOT personnel will work with DHS Office of State and Local Government Coordination to notify State and local governmental partners. Notification methods have been routinely used to notify stakeholders within 24 hours during both exercises and actual incidents.

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.

DHS-CBP will provide assistance at critical facilities and higher volume crossings or hubs upon request and in accordance with provisions of the National Response Framework (NRF). DHS and DOT may request or receive requests for additional resources through the Emergency Support Functions (ESF-8 and 13) of the NRF.

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.

This action calls for activating contingency plans within 24 hours of notification of an outbreak of pandemic influenza. Customs and Border Protection (CBP) has developed a draft Concept of Operations (CONOPS) plan to establish roles and responsibilities to prevent, protect against, respond to, and recover from a mass migration incident. CBP is part of a Strategic Guidance Team working group to help coordinate efforts in the event of a mass migration. CBP will utilize all existing forces to mitigate a mass migration incident and is prepared to employ additional reinforcements of Federal, State, and local assets and capabilities when required.

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.

This Action Item is closely tied to 5.3.5.6 as well as the pre-pandemic planning of the private sector and the implementation of the travel and border protocols under development by the Federal Government. To best meet this objective the agencies will utilize existing emergency communications networks that have been proven effective in past disasters (i.e., floods, hurricanes, etc.) to promptly reach out to the stakeholders for information regarding their potential transportation and economic impacts during a pandemic emergency. Existing communication networks and processes maintained by each department for their own stakeholders

that are used repeatedly in emergencies will be employed during a pandemic emergency to obtain accurate and timely information. Consistent outreach will be maintained to acquire information that best reflects the continued impacts and private sector measures towards the pandemic.

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.

Subject to current legal authorities, DOT will use existing, established safety-related waiver provisions to consider any waiver applications that might be submitted during a pandemic that might be needed to facilitate the efficient movements of goods and people.

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.)

In accordance with provisions of the National Response Framework (NRF), all vetted requests for support under the Emergency Support Function process, to include ESF-13 Public Safety and Security, are addressed and considered based upon the level of depleted State, local, tribal, and National Guard resources and the priority of need and availability of appropriate personnel. “Critical,” “prioritized,” and “critical facility” categorization is determined by the nature of the incident request, and the lead Federal Government component. Upon activation of ESF-13, it is expected that the Joint Operations Center (JOC) of the affected area, the National Response Coordination Center (NRCC), or other designated entity identifies and determines critical facilities and supplies, and assigns the priority to all ESF-13 requests via a vetted mission assignment document.

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.

The U.S. Coast Guard (USCG) has developed a Pandemic Influenza Plan which addresses this action item. This includes understanding the current USCG policy of providing transportation for required medical personnel and possible limitations in USCG responses. Key provisions of the USCG’s Pandemic Influenza Plan are:

1) Notification/Assessment: Current USCG policy in the Maritime Law Enforcement Manual (MLEM), Annex J, indicates that the USCG will conduct passive surveillance for the symptoms of PI. Also, in accordance with the DHS/HHS Memorandum of Understanding dated October 7, 2005, the USCG agreed to question the master of all vessels it boards prior to entry. U.S. regulation 33CFR 160.214 requires a vessel report a hazardous condition – this includes sick crewmembers and the inability to safely navigate the ship.

2) Transportation: Upon HHS/CDC request, the USCG will provide transportation between vessel and shore side for HHS/CDC personnel and crew members subject to quarantine order, as long as transportation does not interfere with a higher risk mission. The USCG can assist with transporting HHS/CDC personnel or medical support for sick crew members. If warranted, the USCG can medically evacuate a crew member.

3) Operations: The Coast Guard does not pilot commercial vessels if the crew is sick and unable to safely navigate. Also, Coast Guard medical teams may not be able to render appropriate care depending on the situation. External medical teams and crews will be required to safely conduct this action.

4) As part of the USCG's pandemic influenza planning effort, an outreach to industry is underway so they may establish contingency plans (e.g., standby crews, tugs).

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 activated, regular reports provided, impacts assessed, and services coordinated as needed.

Procedures are in place to collect data and report on the status of the transportation sector during a pandemic. These processes are used regularly in operations and exercises.

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.

DHS will activate ESF-1 Transportation in accordance with the National Response Framework (NRF).

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.

There are no plans at the Federal level to advise closure of any transportation system due to pandemic influenza. However, DOT recognizes that there could be pandemic-related reductions in transportation services. For such events, DOT will use its existing monitoring and reporting capabilities and procedures.

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.

This action calls for returning production and consumption of essential commodities to pre-pandemic levels following a pandemic. Existing mechanisms will be used to prioritize commodities shipments. With DOT input, HHS/CDC/NIOSH recently drafted and published guidelines for decontamination and cleaning that are specific to a wide variety of transport modes (rail, water, air).

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.

The Department of Defense has policies, procedures, and systems in place to monitor and report the status,

assess impacts, and coordinate services in support of U.S. Government efforts to mitigate and respond to a pandemic. Through these established policies, plans, and procedures, DOD will validate requests and provide support with available capabilities given multiple competing demands. When directed to execute the assigned mission, units regularly provide situation reports (SITREPS). SITREPS inform higher headquarters of the status, location, disposition, and other operational aspects of the units' mission.

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.

This action calls for completing assessments following a pandemic. Coordination efforts to prepare for this item have included DOT, DHS, National Economic Council (NEC), Treasury, DOC, HHS, and DOS.

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.

DHS and DOT, in coordination HHS/CDC, State, USDA, DOI, and other appropriate government agencies, have agreed to issue travel advisories through national, regional, and local media and to reach out to travel associations and the travel industry (including carriers, travel agents, cruise lines, airlines, rail, and tour or charter groups). DHS accomplishes this task via the CBP and DHS Private Sector Office and DHS National Protection and Programs Directorate. CBP has public affairs officers stationed throughout the United States as well as international attaches who can conduct immediate outreach efforts for providing traveler information. DHS's Private Sector Office and CI/KR continuously conduct outreach with the more than 25 million private sector entities across the United States. The Public Affairs Support Annex in the National Response Framework describes the interagency coordination policies and procedures for incident communications and ESF #15 – External Communications Annex – outlines resources and capabilities for public affairs. Specifically, DHS will coordinate all Federal public affairs activities via the National Incident Communications Conference Line (NICCL).

The Foreign Agricultural Service (FAS) and APHIS are meeting and developing a joint action plan for foreign counterparts to help mitigate negative trade impact in the event of a confirmed case of HPAI in the United States. In the meantime, this issue is routinely handled by USDA's Foreign Service Officers to address domestic disease outbreaks with foreign counterparts.

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.

DHS and DOT, in coordination HHS/CDC, State, USDA, DOI, and other appropriate government agencies, have agreed to issue travel advisories through national, regional, and local media and to reach out to travel associations and the travel industry (including carriers, travel agents, cruise lines, airlines, rail, and tour or charter groups). DHS accomplishes this task via the CBP and DHS Private Sector Office and DHS National Protection and Programs Directorate. CBP has public affairs officers stationed throughout the United States as well as international attaches who can conduct immediate outreach efforts for providing traveler information. DHS's Private Sector Office and CI/KR continuously conduct outreach with the more than 25 million private sector entities across the United States. The Public Affairs Support Annex in the National

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6.1.13.10. DOJ, in coordination with HHS, DHS, DOS, and DOC, shall lead the development of a joint strategic plan to ensure international shipments of counterfeit vaccine and antiviral medications are detected at our borders and that domestic counterfeit drug production and distribution is thwarted through aggressive enforcement efforts. Measure of performance: joint strategic plan developed; international and domestic counterfeit drug shipments prevented or interdicted.

DOJ, HHS, DHS, and DOC have collaborated to establish a global surveillance and enforcement network to prevent the importation or distribution of counterfeit, misbranded or unapproved pandemic influenza treatments, including those illegally advertised and sold over the Internet. The joint strategic plan supplements existing efforts, and is intended to enhance interagency coordination, intelligence and information sharing concerning such illegal drugs and biologics; and to result in more vigorous enforcement of the laws and regulations that restrict or prohibit importing or distributing them within the United States.

6.1.14.4. HHS, in coordination with DHS and Sector-Specific Agencies, DOS, DOD, DOL, VA, and Treasury, shall present recommendations on target groups for vaccine and antiviral drugs when sustained and efficient human-to-human transmission of a potential pandemic influenza strain is documented anywhere in the world. These recommendations will reflect data from the pandemic and available supplies of medical countermeasures. Measure of performance: provisional identification of priority groups for various pandemic scenarios through interagency process within 2-3 weeks of outbreak.

Following declaration of an influenza pandemic, HHS will consult with current, relevant Federal advisory committees (such as the NBSB, ACIP, and NVAC) to issue updated recommendations for allocation of vaccines and antiviral drugs to priority groups. As of April 2009, HHS planned to have the recommendations issued within two to three weeks of pandemic onset, if not sooner.

6.2.3.4. HHS-, DOD-, and VA-funded hospitals and health facilities shall have access to improved rapid diagnostic tests for influenza A, including influenza with pandemic potential, within 6 months of when tests become available. Measure of performance: diagnostic tests, if found to be useful, are accessible to Federally funded health facilities.

This action calls for rapid diagnostic tests, which are under development, to be accessible at Federally funded health facilities. HHS, DOD, and VA will be ready to execute when diagnostics tests become available. HHS/CDC will work in partnership with the HHS Assistant Secretary for Preparedness and Response (HHS/ASPR) and the Health Resources and Services Administration (HHS/HRSA) to assist HHS-funded hospitals and healthcare facilities in gaining access to improved rapid diagnostic tests for influenza as soon as such tests become available. DOD plans to purchase and distribute new rapid diagnostics throughout the Military Health System. In their local pandemic response plans, VA facilities have defined processes for access to influenza testing either on-site or via rapid referral of patient specimens to State laboratories. Plans are in place to support use in regions with high avian influenza endemicity and also in point of care settings in the United States.

6.3.4.5. DHS shall activate NDMS teams, if available, to augment efforts of State, local, and tribal

governments as part of the Federal response. Measure of performance: number of NDMS teams activated and deployed during a pandemic.

HHS has developed a plan entitled “Emergency Support Function #8 Pandemic Influenza Playbook.” This playbook describes the public health and medical capabilities the Federal Government will bring to bear to support the National response to a severe pandemic influenza, including use of the National Disaster Medical System (NDMS) teams. It also describes the strategic utilization plan for Federal Emergency Support Function #8 assets. These strategic principles have been tested in multiple exercises.

6.3.5.3. HHS, in coordination with DHS, shall allocate and assure the effective and secure distribution of public stocks of antiviral drugs and vaccines when they become available. HHS and DHS are currently prepared to distribute stockpile as soon as countermeasures become available. Measure of performance: number of doses of vaccine and treatment courses of antiviral medications distributed.

Vaccines: During an influenza pandemic, pandemic vaccine will be distributed on a pro rata basis to the 62 HHS/CDC Public Health Emergency Preparedness (PHEP) Project Areas, which include the 50 states, three large urban areas (Chicago, Los Angeles County, and New York City), the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and six Pacific Jurisdictions, in weekly shipments as vaccine becomes available.

The number of vaccine doses available will depend on the current manufacturing capability and whether or not adjuvants extend the supply. As of April 2009, the plan was for vaccine to be distributed by manufacturers or third party distributors, under the direction of HHS and HHS/CDC, to Project Areas at pre-designated ship-to sites that states have selected during the planning phase. As of April 2009, Project Areas had the option of designating up to one ship-to site per county and may be able to also periodically update the number and location of ship-to sites during the planning phase and also during a pandemic within limits. HHS/CDC holds the ship-to site database at CDC headquarters.

Upon receipt of vaccine at a ship-to site a transfer of authority will occur (from Federal control to State and/or local control) and the state or local authority would assume responsibility for implementing large-scale vaccination.

Antiviral Drugs: As of April 2009, it was planned that HHS/CDC leadership would be able choose one of two options for deployment of antiviral drugs and other Federally stockpiled countermeasures, depending on the pandemic situation, during an influenza pandemic. As described in the Strategic National Stockpile (SNS) Distribution Plan, they include:

- The **Metered Package Option**, which provides a mix of all pro-rata-allocated SNS influenza pandemic countermeasures in three sequential deployments.
- The **Sequential Item Option**, which provides antiviral drugs first, surgical masks and N95 respirators second, and all other PPE, ventilators, and antibiotics third.

In both options, all assets will be allocated on a pro rata basis and shipped to one location in each of the 62 HHS/CDC Public Health Emergency Preparedness (PHEP) Project Areas, which include the 50 states, three large urban areas (Chicago, Los Angeles County, and New York City), the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and six Pacific Jurisdictions). Thus, the total quantity of assets that each Project Area receives is the same with each option. Once the countermeasures are received, States and cities will distribute and dispense them in accordance with individual State plans.

7.3.1.4. DOI shall coordinate with Federal, State, local, and tribal officials to identify and apply appropriate measures to limit the spread of influenza virus should an outbreak occur in free-ranging wildlife populations. Measure of performance: initial control measures implemented within 24 hours of detection of an outbreak in free-ranging wildlife.

This action calls for initiation of control measures within 24 hours of detection of an avian influenza outbreak in free-ranging wildlife. Such an outbreak has not occurred in the United States. DOI has prepared to respond within 24 hours of detection with coordinated identification and application of control measures to limit spread of HPAI by: 1) developing bureau response plans [US Fish and Wildlife Service (FWS) and National Park Service (NPS)] and site-specific response plans for most refuges, parks, and tribal lands; 2) conducting numerous wildlife disease workshops involving DOI bureaus and collaborating Federal, State, tribal, and local agencies; 3) participating in eight HPAI tabletop exercises with Federal and State agencies and industry stakeholders; 4) establishing strategic caches of PPE; 5) developing flow charts, decision models and telephone trees, and conference lines for detection of outbreaks in wildlife; and 6) training in and establishment of an incident command system.

Response capabilities have been reinforced through a DOI tabletop exercise in March 2009 in which response plans and Incident Command Systems (ICS) were tested and integrated at the local, regional and national levels, as well as by conducting 14 wildlife disease workshops with Federal, State, tribal, and U.S. Territorial and Freely Associated States partners which included emphasis on contingency planning and response to an outbreak of HPAI in wild birds.

7.3.5.3. USDA, in coordination with DOI, shall collaborate in working with Federal partners, with State, local, and tribal partners, including State wildlife authorities, and with industry groups and other stakeholders, to update and distribute guidelines to reduce the risk of transmission between domestic animals and wildlife and reduce the risk of spread to other wildlife species during an animal influenza outbreak. Measure of performance: guidelines updated and shared with the public within first 24 hours of an outbreak.

DOI and USDA have reviewed and updated guidance from USDA, as well as Australian, Canadian, and Scottish online guidance, regarding on-farm security and disease prevention. In the event of an HPAI outbreak, following these guidelines (which include such actions as separating domestic from wild birds, confining domestic birds, and hazing wild birds away from domestic operations, as well as decontamination, disposal, and vehicle and fomite control) will reduce risk of disease transmission from domestic to wild birds. USDA and DOI have made this guidance available now and are prepared to further distribute to the public these updated guidelines within 24 hours of an outbreak.

9.3.2.1. DHS shall coordinate Federal, State, local, and tribal actions/options/capability requirements (legislative and regulatory additions/changes and waivers, personnel and material resources, and financial) to develop and implement tailored support packages to address critical infrastructure systems and essential operational requirements at each phase of the pandemic: planning, preparedness, response, mitigation, and recovery. Measure of performance: support packages ensure essential functions of all critical infrastructure sectors sustained during a pandemic.

DHS addressed the task in four phases as set forth below:

1) Identified existing Government Support Opportunities (March – August 2007):

a. Collaborated with Federal/State/tribal/local government officials to identify existing legislation, regulations and other government processes focusing on surge personnel, stockpiling of material resources, and financial capabilities that may be combined, expanded or otherwise enhanced to provide tailored CI/KR support packages.

b. Conducted workshops under action item 9.1.2.1. to develop sector-specific guides working with CI/KR SCC/GGCs to identify their needs during preparedness, response, and recovery for support in accordance with existing legislation, regulations, and other government processes.

2) Explored and Identified Additional Opportunities (August – October 2007):

- a. Conducted focused workshops with Federal/State/tribal/local government and CI/KR sector representatives to explore additional opportunities for public-private partnerships on pandemic support operations.
- b. The purpose of the workshops was to identify likely response and recovery scenarios where support may be necessary and to develop effective coordination procedures to expedite a coordinated response among all players.

3) Synthesized and Created Packages (November 2007):

- a. Based upon government meetings and workshop outcomes, developed and formally organized tailored packages for CI/KR preparedness, response, and recovery support.

4) Implementation (November 2007 – March 2008):

- a. Implemented, exercised, and trained all appropriate government and private sector stakeholders on necessary coordination and implementation processes for support packages during pandemic response and recovery.
- b. Hosted appropriate Federal/State interagency 9.3.2.1. support assessment workshops to identify existing legislation, regulations, and other government processes, surge personnel and stockpiled material resources, and financial capabilities.
- c. The support and guidance needed in coordinating with all Federal and State governments on identifying support capabilities and packages was provided from the leadership of all Departments and was adequately resourced for successful implementation. A complete support requirements list was developed along with the specific sub-actions. DHS has participated in the National Governors Conference regional meetings on pandemic and all hazards response.

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