



ANNEX E (INTERNATIONAL AND BORDER INTERVENTIONS)

REFERENCES:

1. Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States, CDC, (February 2007)
2. Implementation Plan for the National Strategy for Pandemic Influenza, Homeland Security Council, (May 2006)
3. HHS Pandemic Influenza Implementation Plan (August 2006 Draft)
4. WHO Pandemic Influenza Draft Protocol for Rapid Response and Containment (Updated Draft 30 May 2006)
5. WHO Pandemic Influenza Draft Protocol for Rapid Response and Containment (Updated Draft 30 May 2006)
6. WHO Writing Group. Non-pharmaceutical Interventions for Pandemic Influenza, National and Community Measures. *Emerging Infectious Diseases* 12(1), (January 2006), 88-94

1. CONCEPT OF OPERATIONS

From the initial emergence of an influenza pandemic and through subsequent pandemic waves, the public health and healthcare sectors can utilize an assortment of intervention strategies and operational techniques to stop, slow, contain, or limit emergence, importation, spread, and impact of pandemic influenza. Interventions can be classified as case-based, population-based, or personal-based.

- a. Case-based interventions for pandemic influenza focus on direct management of ill persons and their close contacts to prevent new infections and limit chains of transmission.

Operational techniques involve recognition, confirmation, isolation, and treatment of case-patients plus the identification, quarantine, and antiviral prophylaxis of contacts. Case-based interventions can be utilized especially during the pandemic alert period as part of international or domestic containment efforts to stop (contain) a pandemic from emerging or delaying initial amplification of transmission in a community.





- b. Population-based interventions include actions directed at susceptible groups or entire communities to delay (mitigate) spread. These include a variety of social distancing techniques as well as mass prophylaxis (used in specialized containment efforts) and mass vaccination.
- c. Personal-based interventions are behavioral risk-reduction actions that further limit exposure among susceptible persons. These include voluntary self-sheltering, standard infection control practices among healthcare workers, hand hygiene, respiratory etiquette, and disinfection of potentially contaminated surfaces.
- d. These three classes of intervention strategies and techniques are summarized in Table 7, below:

Table 7: Classes Of Intervention Strategies And Techniques

Intervention Strategy	Intervention Technique
Case-Based Interventions	
Separate ill or infectious persons from others in the general population to restrict interaction with susceptible persons	Case (patient) management—Isolation (pending or following laboratory confirmation). Isolation may occur in the home or health care setting, depending on the severity of an individual’s illness and/or the current capacity of the healthcare infrastructure.
Treat symptomatic persons to mitigate disease, suffering, and death, and reduce infectiousness	Case (patient) management—Antiviral treatment
Separate exposed persons (prospective or potential cases) from the general population to stop new chains of transmission from beginning	Contact management—Contact quarantine (mandatory or voluntary) (following contact tracing)
Provide medical prophylaxis to prospective cases to treat sub-clinical infection	Contact management—Antiviral prophylaxis (active)
Population-Based Interventions	
Separate exposed groups from the general population to stop new chains of transmission from beginning	Contact management—Group quarantine (voluntary) (following exposure in a defined group or site)
Reduce the interaction of potentially exposed groups and infectious persons in the general environment to stop new chains of transmission from beginning	Social distancing including: Limitations on location-based gatherings/events (compulsory and voluntary) (e.g., schools, work sites, mass gatherings, public transportation, etc.) Travel restrictions (compulsory and voluntary) to and from affected areas (domestic and international)
Provide medical prophylaxis to potentially exposed groups to reduce susceptibility	Risk group antiviral prophylaxis (passive) (e.g., nursing home residents, etc.)
Provide mass medical prophylaxis to potentially exposed groups to treat sub-clinical infection	Risk zone antiviral prophylaxis (active/targeted as in a containment event)
Actively reduce susceptibility in the general population	Immunization with pandemic vaccine
Personal-Based Interventions	
Reduce the interaction of susceptible and infectious persons in the general environment to stop new chains of transmission from beginning	Self-sheltering (voluntary)
Use personal physical barriers that reduce the risk of infection in frequently exposed individuals	Personal protective equipment (PPE) and infection control in EMS and healthcare settings





Preventively remove infectious organisms acquired by inadvertent contact with infectious persons or contaminated objects	Hand hygiene
Limit respiratory spread of infectious organisms	Respiratory etiquette
Disinfect or dispose of objects contaminated by infectious persons	Environmental disinfection in EMS, healthcare, and other settings

2. INTERVENTION STRATEGIES – A LAYERED RESPONSE

The USG supports a layered strategy of response to an influenza pandemic.

- a. When sustained human-to-human transmission of pandemic influenza begins (presumably outside of the United States) the USG will leverage available resources/interventions and collaborate with international partners to contain the infection at its source. CDC will participate in rapid containment events, supplying technical expertise and other support, as part of an international team(s).
- b. The USG will also mobilize resources at borders and ports of entry (POE) to limit the introduction of persons infected with pandemic influenza, or animals with HPAI, into the United States and limit exportation (via exit screening) from infectious U. S. travelers to infected areas. CDC’s role in this strategy will primarily focus on providing relevant guidelines and materials for the education of travelers and the recognition and management of ill and exposed travelers entering or leaving the United States at ports of entry.
- c. Should containment abroad and efforts to prevent importation fail, and an introduction and spread of pandemic influenza into the United States appears inevitable, U. S. communities will be required to mobilize resources and implement interventions directed at limiting or otherwise delaying the spread of disease throughout the country (mitigation). This could minimize suffering and death, reducing economic and social effects of an influenza pandemic. CDC will provide containment and mitigation support to community efforts via ESF #8, with technical assistance, financial aid (as available), materials, and formal guidance.





APPENDIXES

1. CDC International Deployment Teams
2. International Response Operations
3. Border Interventions





APPENDIX 1 (CDC INTERNATIONAL DEPLOYMENT TEAMS)

REFERENCE:

WHO Pandemic Influenza Draft Protocol for Rapid Response and Containment,
Updated draft, 17 March 2006.

1. SITUATION

Throughout its history CDC has sought to leverage its knowledge, tools, physical assets and personnel throughout the world in response to health crisis. CDC personnel have been sought by other nations to assist with sentinel health events. In a health emergency, CDC may enter into bilateral or multinational (WHO-coordinated) assistance compacts WHO has established a requirement for a global system that can rapidly identify and contain public health emergencies and reduce unneeded panic and disruption of trade, travel, and society in general.

The revised International Health Regulations, (IHR 2005) provide a global framework to address these needs through a collective approach to the prevention, detection, and timely response to any public health emergency of international concern.

The core functions delineated by WHO to respond to an influenza pandemic are:

- a. Support member states for the implementation of national capacities for epidemic preparedness and response in the context of the IHR (2005), including laboratory capacities and early warning alert and response systems.
- b. Support national and international training programs for epidemic preparedness and response.
- c. Coordinate and support member states for pandemic and seasonal influenza preparedness and response.
- d. Develop standardized approaches for readiness and response to major epidemic-prone diseases (e.g., meningitis, yellow fever, plague).
- e. Strengthen biosafety, biosecurity, and readiness for outbreaks of dangerous and emerging pathogens (e.g., pandemic influenza, SARS, viral hemorrhagic fevers).





- f. Maintain and further develop a global operational platform to support outbreak response and support regional offices in implementation at the regional level. Implemented as the Global Outbreak Alert and Response Network (GOARN).

2. MISSION.

CDC will use both personnel and physical assets to support bilateral or multinational efforts to assess/investigate/contain a potential influenza pandemic event anywhere in the world. Refer to Figure 5: WHO-Coordinated Response.

3. EXECUTION

a. Concept.

CDC as a collaborating member institution of GOARN, deploys selected personnel OCONUS at the request of WHO when a Member State requests assistance from WHO. Additionally, CDC may respond to a bilateral request from an affected country to the U.S. for assistance. Finally, CDC may receive requests from both WHO and a country. Some CDC staff could join the GOARN team, while for others CDC would make decisions about the number and type of staff to deploy. Every effort possible would be made to coordinate field operations with the GOARN staff. Within this appendix the procedures outlined are generally applicable for both a GOARN and a bilateral deployment.

b. Terms of Reference (ToR)

The number and skills sets of requested staff are mission-specific and ToR are specified in the request for assistance from WHO. The following ToR are examples of those used previously for influenza outbreaks.

1) Epidemiologist

- a) Provide epidemiological assistance with assessing the spread of disease.
- b) Provide assistance developing tools, implementing investigations, and analyzing and interpreting data to understand the current epidemiological situation.
- c) Provide assistance identifying risk factors for infection.





- d) Provide assistance with establishing effective control measures.
- e) Provide assistance with data management and analysis.
- f) Provide assistance in defining the disease case definition.

2) Virologist

- a) Provide assistance with real-time PCR laboratory diagnosis of avian influenza viruses, in particular with understanding variation in genetic sequences and the impact on diagnosis.
- b) Provide assistance with evaluation of evolutionary patterns in avian influenza viruses and its effect on human infection and virulence.

3) Clinical Management Expert

Provide assistance to clinicians in the treatment of hospitalized suspected and confirmed diseased patients. Previous experience in treating severe respiratory infections in ICU-type setting is required, ideally with previous experience with avian influenza infection.

4) Infection Control Specialist

- a) Provide technical assistance to national/local health authorities in assessing the level of hospital infection control in facilities designated for caring for suspected or confirmed influenza patients.
- b) Assist in strengthening infection control practices in local health delivery infrastructure.
- c) Assist in training of health care personnel for safe clinical management and infection control.
- d) Advise on effective and feasible infection control practices and isolation precautions in health care facilities including isolation wards.
- e) Provide observation and evaluation to strengthen the level of implementation.





c. CC/CO/NIOSH

- 1) Prepare selected personnel for international deployment. Overseas work necessitates pre-planning in that many of the course requirements to deploy are only available at certain times during the year.
- 2) If the IMS is not activated, manage the selection of team members and manage the deployment process, in conjunction with COTPER.
- 3) If the IMS is activated, Support the IMS in the selection of team members for deployment. For detailed information, refer to http://eocportal/deployment_welcome_1.asp web site.

d. COTPER:

- 1) Conduct pre-deployment processing on a monthly basis, or as required to maintain a roster of qualified personnel for deployment to include coordination with OSEP to schedule "Preparing for Work Overseas" (PFWO) courses on a frequent basis. Processing includes both USG and UN requirements to prepare staff to participate in a GOARN team.
- 2) Manage the deployment process.
- 3) Provide Logistics Support Specialists.

e. Coordinating Instructions

- 1) CDC must maintain a large pool of trained influenza surveillance and preparedness personnel capable and available for deployment.
- 2) A pool of at least 100 personnel will be available for rapid international influenza response deployment. This pool will include the following specialties and skill sets in the numbers indicated:
 - a) 15 mid-to-senior level epidemiologists.
 - b) 15 public health advisors.
 - c) 20 EIS officers.
 - d) 10 laboratorians.
 - e) 10 medical officers.





- f) 5 communications/media specialists.
 - g) 5 risk communications/health educator specialists.
 - h) 5 occupational health experts.
 - i) 5 environmental health experts.
 - j) 5 logisticians.
 - k) 5 informatics specialists.
- 3) All of these team members must complete influenza training provided by the Influenza Division, CCID.
- 4) All members of the pool must have valid official passports (red), government travel cards and have completed the PFWO course.
- 5) OFRD (Office of Force Readiness and Deployment) will maintain team rosters of standing deployment teams. These rosters will be maintained and updated often to ensure they are current and prepared for rapid response. These rosters will be distributed to Senior Management Officials and Emergency Coordinators quarterly.

4. SUPPORT SERVICES

COTPER:

Coordinate with other CDC offices to ensure sufficient deployment stocks are available.

Examples of materiel required to support deployments include:

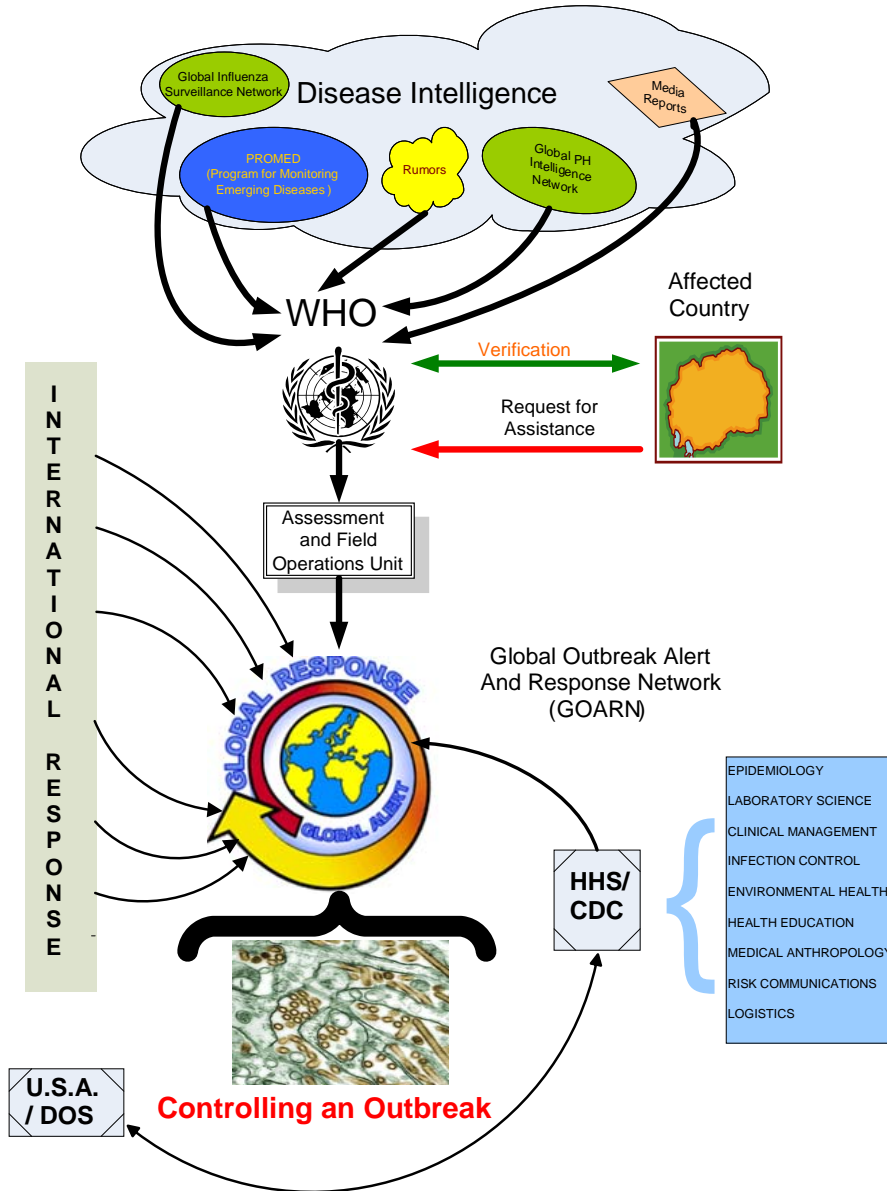
- a. PPE.
- b. Antiviral drugs and other medications as required.
- c. Specimen collection/transport kits.
- d. Field diagnostics kits.
- e. Deployable equipment (laptop, global satellite cell phone, GPS, etc.)
- f. Self use medical kits.

5. MANAGEMENT AND COMMUNICATIONS

Refer to Annex K (Information Management).



Figure 5: WHO-Coordinated Response



(Source: CDC)



APPENDIX 2 (INTERNATIONAL RESPONSE OPERATIONS)

1. SITUATION.

- a. The Influenza Pandemic Threat: Refer to Annex B (Disease Intelligence)
- b. International and Border Intervention. Refer to base Annex E.

2. MISSION.

Within the framework of the WHO rapid response and containment strategy, CDC will employ resources to stop, or at least slow, the spread of pandemic influenza at the source of its emergence in order to minimize global morbidity and mortality, through preparedness, rapid response, and containment.

3. EXECUTION.

a. Concept of Operations

In 2005, two research groups published studies based on the mathematical modeling of transmission patterns that might be seen near the start of a pandemic. (Ferguson, NM et.al., "Strategies for Containing an Emerging Influenza Pandemic in Southeast Asia." *Nature* 437, 209-214 (8 September 2005). Longini, IM et.al., "Containing Pandemic Influenza at the Source," *Science* (3 August 2005)). These studies suggested that an initial outbreak caused by an emerging pandemic virus might be contained (quenched) provided several demanding conditions were met within a very short timeframe. In these studies, mass administration of antiviral drugs within 21 days following the timely detection of the first case representing improved human-to-human transmission of the virus within the outbreak zone was the cornerstone of the containment strategy, supported by additional non-pharmaceutical measures, such as area quarantine and social distancing. The immediate implementation of standard measures (case and personal-based interventions) when cases are first recognized gives the strategy a greater chance of success. The studies further concluded that, should the containment strategy fail to prevent the emergence of a fully transmissible pandemic virus, it could nonetheless delay international spread.





Any attempt to contain an emerging pandemic virus at its source will be a demanding and resource-intensive operation. Supplies of antiviral drugs available for use to support such an operation are finite, and must therefore be used judiciously. The decision to initiate activities aimed at rapid containment should be triggered by compelling evidence drawn from a combination of clinical, epidemiological, and laboratory findings that show a more efficient human-to-human transmission. Feasibility of rapid containment will depend further on the number of contacts of the initial cases and the ability of government authorities to ensure basic infrastructure and essential services to the affected population as well as the political will to implement control measures. Such services include shelter, water, sanitation, food, security, and communications with the outside world.

b. Coordinating Instructions.

1) CDC Deployment with International Field Teams.

(Refer to Appendix 1 (CDC International Deployment Teams) to Annex E)

- a) CDC staff will be called upon to participate in rapid response and containment efforts. International field teams with CDC participants will be drawn from institutions in the WHO Global Outbreak Alert and Response Network (GOARN) and deployed rapidly (within hours or days) under WHO authority following receipt of a request from the affected country. The following issues should be considered:
 - (1) WHO Teams may be deployed before a formal decision to undertake a containment event is made in order to assist in the risk assessment and verification of the pandemic alert. Expertise in laboratory diagnostics, epidemiology, clinical management, infection control, veterinary medicine, medical anthropology, social mobilization (health education), logistics, media and risk communications, and data management will be required. Teams must be ready for travel with all necessary documents and clearances, and equipped with supplies required for the initial investigation and response.
 - (2) Depending on the situation within the affected country, such supplies may include kits for the collection and transportation of specimens, antiviral drugs and other





medical supplies, PPE, and additional supplies of information, educational, and communication (IEC) materials for creating awareness in the general public.

- (3) The WHO attempts to ensure that field teams are in place within 48 hours following receipt of the request.
 - (4) National authorities will need to facilitate the speedy arrival of teams through rapid approval of visa applications and customs clearances.
- b) The WHO field team will assist local and national authorities in their investigation and assessment of the disease event and in the gathering of critical information required for situational awareness and the operational response. Examples of information useful in such an assessment include the identification and characterization of chains of human-to-human transmission and of situations that could potentially lead to large numbers of additional cases. Such information will be used when deciding whether the launching of a rapid containment operation is both justified and feasible.

2) **A Two-Step International Containment Response.**

As part of an international response containment effort, a rapid containment strategy is implemented in two steps: The immediate implementation of standard measures is aimed at reducing further transmission (standard measures include isolation of case-patients, active case finding, and contact tracing. Antiviral drugs are administered, in a targeted way, to persons identified during these activities); and implementation of exceptional measures, including wider administration of antiviral prophylaxis, quarantine, and (possibly) the introduction of social distancing measures.

a) **Step One: Standard Measures to Reduce Transmission**

Activities during this step are based on the assumption that an emerging pandemic virus will not immediately cause the explosive increase in the number of cases seen during a full-fledged pandemic. Interventions at this phase aim to reduce opportunities for further transmission to occur and thus, ideally, prevent the virus





from becoming well adapted to humans. Assuming that the number of new cases is still manageable, activities should concentrate on:

(1) **Intensified surveillance and the real-time reporting of data.**

While not an intervention, the surveillance process within any disease control effort is critical to its success. Once the reported signal is confirmed to be an influenza alert requiring immediate intervention, surveillance activities must be intensified immediately within the initial outbreak zone. The surrounding area, and the geographically “at risk” areas, should also intensify their surveillance and remain on alert for possible introduction of the virus. Within the outbreak zone, enhanced detection and reporting of individual cases and clusters of human-to-human transmission can be achieved through institution of active surveillance to identify all potential cases. This is essential to:

- (a) Manage the outbreak and monitor its evolution.
- (b) Evaluate the success of containment measures and the potential need to modify the strategy.

(2) **Investigation and laboratory confirmation of cases.**

To support surveillance of cases in the outbreak zone and elsewhere, case definitions will include clinical, epidemiological, and laboratory criteria.

(3) **Appropriate management of cases in a safe environment.**

All cases identified during this activity should be referred for appropriate case management. Attempts should be made to investigate as many cases as possible using a standardized case investigation form. Epidemiologists should also gather information about recent travel histories that may have placed other areas or countries at risk, thus signaling the need for intensified surveillance elsewhere.

- (a) In the initial phase, when a manageable number of cases are assumed, clinical cases should be hospitalized and managed in single rooms, if possible, to maintain strict infection control.





- (b) Once laboratory confirmation of infection is available, and the number of cases exceeds the available number of single rooms, patients may be cohorted and managed in group isolation rooms.
 - (c) Depending on local circumstances and feasibility, group isolation rooms could be adapted to have negative pressure facilities.
 - (d) When the number of cases exceeds the capacity of existing health care facilities, ill persons should be isolated in other designated areas or individual homes, depending on the severity of their illness.
 - (e) National governments should identify potential isolation facilities as part of their preparedness planning during discussion with WHO.
 - (f) Patients should be transported to these facilities by trained staff wearing appropriate PPE and using designated vehicles.
 - (g) To minimize the risk of nosocomial transmission, persons showing signs of mild, moderate or severe respiratory illness must be assessed in premises separated from those where confirmed cases are being managed.
 - (h) Options for doing so include the establishment of fever clinics, home visits by medical staff, drive-through consultation services, and other methods of triage and diagnosis that limit opportunities for exposure.
- (4) **Implementation of infection control measures within the health care setting.** Infection control measures should be adhered to strictly. WHO has issued detailed infection control guidelines for avian influenza (February 2006) including information specific to H5N1 infection. CDC infection control guidance for influenza is based on current knowledge of routes of influenza transmission, pathogenesis, and the effects of influenza control measures used during past pandemics and inter-pandemic periods. Infection control precautions primarily involve the application of standard and droplet precautions during patient care in health care settings (e.g., hospitals, nursing homes, outpatient offices, emergency transport vehicles). These practices also apply to health care personnel going into





the homes of patients. It is also prudent to recognize that aerosol-generating procedures increase the potential for dissemination of small-particle respiratory aerosols (droplet nuclei) in the immediate vicinity of an AI patient and to plan for the use of NIOSH-certified N95-type respirators.

(5) Contact tracing, voluntary home quarantine, and monitoring.

- (a) During investigation and response, contact tracing must be implemented to include the identification of extended social networks and the travel histories of all cases and contacts within the preceding 14 days. Contacts of cases should be traced and directed to adopt voluntary home quarantine for at least seven days after the last contact with a person under investigation. Such patients should be contacted daily by a public health team member for evidence of respiratory illness for at least seven days after last contact. If the number of contacts requiring investigation is large, follow up should be prioritized based on:
- i. Heightened probability of infection, such as contact with a laboratory-confirmed case.
 - ii. Duration and closeness of this contact.
 - iii. A high-risk exposure, such as unprotected patient care.
 - iv. Exposure in settings that could accelerate spread to large numbers of contacts, such as when a confirmed case worked in a school or attended a large gathering.
- (b) Contacts of cases and the community at large should:
- i. Be familiar with the risks factors of exposure and the signs, symptoms, and risks associated with the illness. The public should be informed of the most common symptoms which are fever and/or cough.
 - ii. Receive instructions on how to self-monitor for post exposure fever, which should be performed for at least seven days following the last contact with a possible case of influenza. People should immediately





report the onset of fever and other symptoms to health authorities and remain in voluntary home quarantine during self monitoring.

- iii. Be visited or telephoned daily by a member of the public health team to ascertain their clinical status. In remote and inaccessible areas, community focal points could be identified, trained, and assisted to monitor contacts, report on clinical status, and appropriately refer those with symptoms. Prompt investigation and treatment must be provided when symptoms are reported. Investigations can be undertaken at home, locally at an appropriate health care facility, or in a designated field hospital.

(6) Use of antiviral drugs for the treatment of cases and targeted contact prophylaxis.

In the containment zone, antiviral drugs should be administered to cases of moderate-to-severe respiratory illness to reduce morbidity and mortality, and to their contacts to reduce further spread. Priority access to antiviral drugs and other medical interventions is expected to work as an incentive that increases the willingness of patients and their contacts to comply with recommended public health measures under what are likely to be stressful and demanding conditions. Local and national authorities, with support from WHO, will define jointly (within the outbreak zone) the households, schools, workplaces, health facilities, or other settings where the delivery of antiviral drugs, PPE, and other medical supplies should be targeted. Should evidence of spread beyond the initial containment zone emerge, the containment areas designated for antiviral prophylaxis should be redefined. This decision will be made in collaboration with local and national authorities and WHO.





b) Step Two: Exceptional Measures, Including Use of the WHO International Emergency Antiviral Stockpile

(1) Group Quarantine.

Experience during the 2003 SARS outbreaks suggests that quarantine of selected high-risk groups, applied on a voluntary basis, may be as effective as enforced quarantine. The use of voluntary group quarantine is also consistent with modeling studies recommending the application of quarantine and other community-based measures as part of a containment strategy. However, for voluntary quarantine to succeed, the public will need to be informed and sensitized on benefits. National, sub-national, and local governments should be prepared to enforce, legally and operationally, individual and community-based containment measures if warranted. This preparedness should include: 1) Examination of the ethical dimensions of enforced quarantine or compliance with other recommended measures; 2) An assessment of the feasibility and potential risks to the sensitivity of surveillance by implementing involuntary containment measures; and, 3) Wherever possible, the principle of proportionality should be used, whereby the least restrictive measures are applied first. This can be followed by a graded application of more restrictive measures when evidence indicates their necessity.

- (a) Local authorities could apply group quarantine in the following situations:
- i. Exposure has occurred in a defined group of persons, for example in a household setting, at the workplace or school, or at a well-defined and circumscribed public gathering.
 - ii. Exposure has occurred in a defined site or building such as a hospital or an apartment building.
- (b) Quarantine may involve confinement at home or in a designed facility with appropriate equipment. It may require that persons in home quarantine be





provided with food, access to communications, psychosocial support, and supplies of their usual medications, especially for chronic conditions.

(2) **Social Distancing.**

Modeling studies have indicated that certain social distancing measures might increase the likelihood of successful containment. Such population-based measures aim to increase the social distance between people in an outbreak zone and thus reduce opportunities for transmission to occur. Like contact or group quarantine, these measures are socially disruptive and some may cause considerable distress or discomfort in the affected population. Moreover, their actual impact on transmission patterns has not been documented fully in scientific studies. They are, nonetheless, included here as an element of national pandemic preparedness plans. These may include:

- (a) The closing of schools and workplaces.
- (b) Cancellation of mass gatherings and public transportation.
- (c) International and domestic travel restrictions.

(3) **Mass Antiviral Prophylaxis.**

- (a) Mass prophylaxis of the affected population within a radius of 5–10 kilometers (approximately 3–6 miles) from each detected case may be undertaken.
- (b) Targeted administrative areas should cover the at risk population (10,000–50,000).
- (c) Each individual will be given a single prophylactic course of oseltamivir for 10 days. In the event that more cases arise among the targeted population, a second round of prophylaxis is administered. Mass antiviral prophylaxis should cease automatically ten days after the date of symptom onset in the last reported case.





(4) **Antiviral drugs: Informed and Voluntary Consent.**

The mass administration of antiviral drugs as part of a containment strategy raises certain ethical questions about informed consent during a mass intervention. National governments need to decide how to provide information about contraindications to the target community. More specifically, antiviral drugs have not been approved for use in pregnancy or in infants younger than one year of age, except in circumstances where the foreseeable benefits outweigh the risks. Such use should be undertaken only after adequate counseling and informed consent of the case or parents of the case.

(5) **Reporting of Adverse Events.**

Adverse events should be monitored via surveys (e.g., telephone) or directly reported via hotlines. Where such communication structures are lacking, adverse event reporting should be conducted during visits by mobile medical or public health teams, other surveillance networks, or by food and social welfare distribution networks. Adverse event reporting will target such high-risk groups as pregnant women, children, and persons with underlying medical conditions. All people reporting adverse events should be given advice on management of the event. National authorities should examine their responsibility for liability in their respective public health and legal systems should severe adverse events occur.





APPENDIX 3 (BORDER INTERVENTIONS)

1. SITUATION.

- a. The Influenza Pandemic Threat: Refer to Annex B (Disease Intelligence)
- b. International and Border Intervention. Refer to base Annex E.

2. MISSION.

Delay the entry of novel influenza viruses into the United States.

3. EXECUTION.

a. Concept of Operations.

- 1) Implementation of appropriate interventional strategies at our Nation's 317 ports of entry (POE) and vast transportation network are critical elements in our preparation for and response to a potential influenza pandemic. Efforts to delay the entry of pandemic influenza into the United States (during WHO Phases 4-5) will require careful planning and preparation. Depending on the length of delay, it can provide valuable time to implement pandemic preparedness measures, and may allow the administration of pre-pandemic vaccine, assessment of disease epidemiology, and mobilization of resources for screening and diagnosis.
- 2) Response activities at ports of entry would involve:
 - a) Investigating reports of ill travelers with influenza-like illness to identify and evaluate individuals with a high likelihood of being infected with novel influenza virus.
 - b) Cargo inspections at POE to identify and destroy potentially infected animals or animal products.
- 3) Prior to the occurrence of cases in the United States, international travelers infected with pandemic influenza may simultaneously arrive at multiple ports of entry. However, some POE are more likely to be the site of importation and will require staff augmentation. If the decision is made to screen every arriving and/or exiting international traveler when pandemic influenza is circulating globally, but is not present in the United States, the





current number of U. S. Quarantine Station staff will be inadequate to perform this task. Local and state health department staff should be considered as a resource for the personnel surge capacity needed.

b. Coordinating Instructions.

1) Interventions for Travelers.

- a) The United States could deny entry of travelers, or place conditions on the return of travelers from countries with outbreaks and other countries that have not instituted acceptable pre-departure screening, prohibit entry of travelers from the affected area, or continue to accept travelers from countries with outbreaks under appropriate conditions. Additional options would be considered for U. S. citizens planning to return home from affected areas, such as a voluntary quarantine to monitor for illness through one incubation period prior to departure. This could reduce risk of transmission for the United States, and help identify persons in need of medical care.
- b) The policy of layered screening measures would apply to all U.S. -bound travelers from affected areas, but the characteristics of the outbreak, including the rapidity of spread, may make it necessary to implement this screening at all international airports from which U. S.-bound passengers originate. In addition, development of rapid diagnostic tests can dramatically change our ability to screen effectively. Travel-related interventions can be classified as pre-departure measures, en route measures, and arrival measures.

2) Pre-Departure Measures:

Effective host country health screening of all individuals prior to departure may reduce the risk of travelers exposing fellow travelers, aircraft and vessel crews, and others to pandemic influenza. This would include:

- a) The need to develop pre-departure measures and identify the necessary staffing resources.
- b) Screening for signs of illness (e.g., temperature scanning) and for risk factors (e.g., contacts, travel history).





- c) Restricting movement of potentially exposed individuals for one incubation period prior to international travel.

3) En Route Measures:

Given the short incubation period of influenza, and the length of some international flights, one can assume that some travelers with influenza will develop their first symptoms during their journey. When combined with pre-departure exit screening, this strategy would detect those who developed signs of illness while en route. Procedures would include:

- a) Training of flight and vessel crews to detect and manage ill travelers.
- b) Moving ill persons away from other travelers and, if possible, placing a surgical mask on the ill person.
- c) Emphasizing the importance of hygiene measures such as hand hygiene.
- d) If a mask is not available, covering coughs and sneezes with a tissue or cloth, and proper disposal of these items.
- e) Reporting illness or death of traveler(s) by the ship or aircraft commander.

4) Arrival Measures:

Arrival screening may serve as an important additional layer of containment if adequacy and effectiveness of previous containment measures cannot be ensured, and may help identify individuals who became ill during travel. Arrival screening can be imposed as a precautionary measure. Arrival measures include:

- a) Isolating and diagnostic testing (especially with a rapid diagnostic test, when available) of travelers with influenza-like illness.
- b) Quarantining potentially exposed travelers until definitive testing is complete or antiviral prophylaxis is given.
- c) Educating travelers on pandemic influenza.
- d) It must be recognized that arrival screening will place additional demands on CDC Quarantine Station personnel and Customs and Border Protection officers and agents, especially if a decision is made to funnel inbound international flights to a subset of





U. S. airports (potentially 96% of all inbound international flights arrive at 30 U. S. airports).

