



HARVARD SCHOOL OF PUBLIC HEALTH
Center for Public Health Preparedness

Toolkit to Assist Public Health in Conducting Preparedness Exercises



Tabletop Exercise No. 1: Avian/Pandemic Influenza



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Using the Toolkit

When planned and executed properly, exercises that simulate public health response to major emergency situations can significantly help improve preparedness on two levels. At the individual level, exercises present an opportunity to educate staff members on disaster plans and procedures through hands-on practice. They also help staff improve their performance through constructive critiques of their actions. On a system-wide level, well-designed exercises can reveal gaps in resources, uncover planning weaknesses, and clarify specific roles and responsibilities.

“Tabletop Exercise No. 1: Avian/Pandemic Influenza” is intended to accompany our *Toolkit to Assist Public Health in Conducting Preparedness Exercises* (both available on our website, at <http://www.hsph.harvard.edu/hcphp/>). These materials are designed to enable local public health officials to conduct standardized preparedness exercises without draining excessive amounts of time and energy away from critical daily responsibilities. The scenarios and sequence of events in each exercise are pre-planned and designed to test the critical actions of local public health as part of a community emergency or disaster response. These scenarios are further designed to allow for the inclusion of other community partners such as public safety (fire, police, EMS), local government, hospitals and other healthcare providers. This design is meant to ensure that public health emergency planning is integrated into the broader community disaster plans and to allow for an improved understanding of the roles each service should play in a catastrophic event.

Educational use of this document is permitted without permission. Public health professionals may download, copy, and/or transmit any portion of this document for informational and non-commercial purposes only. Each copy of these materials must retain all copyright and other propriety notices contained therein.

The Harvard School of Public Health Center for Public Health Preparedness is tracking all exercises conducted using this Toolkit. Please send an email to hcphp@hsph.harvard.edu with “Exercise Toolkit” in the subject line to let us know about each exercise you perform using the Toolkit, or to request additional information and/or materials.

This activity is supported under a cooperative agreement from the Centers for Disease Control and Prevention (CDC), grant number U90/CCU124242-02. The contents of this program do not necessarily reflect the views of the CDC.



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian Influenza **Table of Contents**

	<u>Page</u>
1. Introduction & Objectives	3
2. Initial Fictional Scenario	4
3. Master Sequence of Events List & Controller's Notes	5
4. Material for Additional Participants: Police Department	11
5. Material for Additional Participants: Fire & EMS	13
6. Material for Additional Participants: Local Government	15
7. Material for Additional Participants: Healthcare Providers & Hospitals	17
8. Background Information on Avian Influenza from the CDC & WHO	19
9. Evaluator Checklists	23
10. After-Action Report Guidelines	30
11. Selected Suggested Responses to Controller's Questions	31



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian Influenza Introduction & Objectives

This tabletop allows local public health professionals to test their response to a major outbreak of a theoretical highly contagious and highly morbid disease. The major public health functions tested in this drill are: risk communication, isolation and quarantine procedures, and mass dispensing capabilities. Additional community-wide functions tested in this drill are: risk communication, control of population movement, isolation and quarantine procedures, and protection of staff. It is recommended that exercises include representation from local public safety, local government and major local health care providers whenever possible in order to integrate the community emergency response plans and facilitate cooperation.

The objectives of this exercise are to enable members of the public health workforce to:

- clarify roles and responsibilities in a public health emergency
- practice working together to respond to an emergency
- evaluate current emergency plans & protocols
- anticipate the specific demands on the public health system during a mass casualty event
- understand the role of local, state, and federal agencies, and the resources available to local communities



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian/Pandemic Influenza Initial Fictional Scenario

For the past 12 months, outbreaks of avian flu have been decimating bird populations in Russia, Vietnam, Laos, Cambodia, Turkey, and Romania. Eight weeks ago, a bird farmer and his two-year-old child in Cambodia died from apparent avian flu (H5N1). The bird farmer also tested positive for human influenza A (H3N2). To the best of anyone's knowledge, the child was not in direct contact with the family's poultry. To date, there have been over 1,000 suspected cases of avian influenza in humans in Laos and Cambodia, with over 400 deaths attributed to that infection. More than 75% of these recent cases of avian influenza in humans occurred in patients with no known contact with birds or poultry farms.

The WHO and CDC have sent representatives to the affected nations. Preliminary study of the avian influenza virus recovered from some of the recently infected patients suggests that the avian influenza genome has acquired portions of the human influenza virus.

Because of extensive press coverage of the outbreak, both the public and the medical community are now acutely aware of avian flu occurring in humans and are very suspicious of human-to-human transmission.



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian/Pandemic Influenza Master Sequence of Events List and Controller's Notes

Day One:

At 9 pm, a 47 year-old man is brought to the emergency department (ED) by ambulance with fevers, chills, malaise, cough and shortness of breath. The patient is a Cambodian-American businessman who returned from Cambodia yesterday where he had traveled on a business trip with his wife. The patient is involved in agribusiness and visited several farms as well as Phnom Penh. Since returning from his trip, he has spent time with his family and at the office, and he just came from an awards dinner held at a local hotel and attended by 200 of his colleagues and business associates. The patient was evaluated in the ED, was found to have pneumonia on chest x-ray, and was subsequently intubated and placed on a ventilator for severe respiratory distress. Just as the patient is moved from the ED to the intensive care unit (ICU), his wife begins to complain of similar, milder symptoms and registers as a patient in the ED. The physician in the ED, concerned by this history, decides he should report this case to local public health authorities.

After the initial introduction of the scenario, the key questions are:

- *How would a physician reach local public health officials during regular business hours?*
- *How would a physician reach local public health officials during off hours?*
- *Do your local physicians really know this information?*
- *What would you do upon receiving this information?*

Day Two:

The local television station has just aired a report on a confirmed human case of avian flu in another state in the United States. The station concludes the report with "breaking news" that there may be another case in your community. Your office is receiving calls from the media, the mayor's office, local clinics and health care providers.

Assuming public health has no further data than what has just been described, how do the participants handle these inquiries?

- *Who is leading the public health response and what are the roles and responsibilities of the persons who report to this individual?*

- *What are the key issues the health department needs to address at this point?*
- *Who are the key partners with whom these issues need to be addressed?*
- *On what medical care-related areas does public health need to collaborate with the hospitals, emergency rooms and outpatient providers?*
- *Who speaks to the media?*
- *Who speaks to local government?*
- *Do you activate your emergency plan?*
- *How do you activate your plan?*
- *Which staffs are called in?*
- *Do you increase surveillance?*
- *Do you institute mandatory reporting?*
- *Do you have a case definition for suspected cases?*
- *How do you reach your staff off-hours or on the weekend?*
- *Where will lab testing be performed?*
- *Who will transport specimens to the lab?*
- *What state or national resources are requested?*
- *Who speaks to local health care providers?*
- *How do you reach your local health care providers?*

Day Three:

32 more patients present to the local hospital with severe flu-like illnesses. The initial index patient has now died and his wife is in the ICU. Six of the 32 new patients were on the same flight as the index patient and live in the surrounding area. The media reports that the index patient was on a recent airplane flight and also attended a large public gathering. Local residents are flooding their primary care providers' (PCP) phone lines and offices with concern for being exposed. Many of these PCPs are calling local health and the state health department for information and support. The state public health department and the CDC call to say they will be sending representatives.

Although state and federal help is on the way, local public health must respond to the local emergency.

- *Who will track down contacts of the affected patients?*
- *How do you get additional staff if required?*
- *How do you decide whether to quarantine exposed contacts?*

- *How do you recommend potential cases be isolated?*
- *What personal protective equipment (PPE) should health care workers wear?*
- *What PPE should laboratory workers wear?*
- *What PPE should public safety wear?*
- *Who will interact with the state public health department and the CDC?*
- *Who has jurisdictional authority?*
- *How should you protect health care workers and first responders in your community?*
- *Can you set up a phone hotline for concerned citizens to call?*
- *What do you say to the media?*

Day Four:

The CDC hosts Clinical Outreach and Communication Activity (COCA) conference call including all area public health agencies and hospitals. It is confirmed that the first two patients who presented in your community, now both dead, were infected with Avian Influenza Type A H5. Two more patients have died and the local hospital has admitted 82 more patients with the clinical picture of severe influenza. Two hospital workers who cared for the index patient now show clinical signs of influenza. Other hospitals in the region are also seeing patients with a similar picture. Sporadic cases of severe influenza in humans have been reported in other states and many more are reported in East Asia. The local hospital's ICU is now overwhelmed and cannot accept any more patients.

Until recently, the mortality of patients affected with avian influenza in East Asia has been 45-50%. Treatment with oseltamivir phosphate (Tamiflu) seems to be the most effective at limiting the mortality of ill patients and as prophylaxis for exposed persons.

The CDC currently recommends treatment of all affected persons with oseltamivir as soon as the diagnosis of avian influenza is suspected. Given the limited availability of oseltamivir, the CDC recommends that it be used for treatment of cases only. This decision is supported by initial scientific evidence that using the drug for treatment of cases alone can achieve nearly the same reduction in overall mortality as treatment plus prophylaxis.

There have been reports from East Asia of possible airborne transmission of Avian Influenza Type A H5N1, though none of these reports has been confirmed, and CDC officials are skeptical. Nonetheless, until this possible mode of transmission is ruled out, the CDC currently recommends that health care providers wear N-95 respirators when caring for patients suspected of having avian influenza, and Powered Air-Purifying Respirators (PAPR) when performing invasive airway procedures such as intubation or

deep suctioning on affected patients. Additionally, to prevent further spread of disease, the CDC recommends airborne infection isolation for all cases.

Local health now has technical assistance from state and federal agencies with laboratory investigation and treatment recommendations, but the responsibility to implement the recommendations remains the responsibility of local health.

- *How will you stay current with state and federal communications and guidelines regarding the outbreak?*
- *What should you recommend to the public regarding daily activities (i.e. going shopping, going to work, etc.)?*
- *Pharmacy stocks of oseltamivir phosphate are limited. How will you access more medicine?*
- *Does the SNS include oseltamivir? How would you find out? How would you request the medications?*
- *What plans been developed to distribute medication to priority groups after first shipments of drugs arrive?*
- *Health-care workers are demanding that they and their family members receive oseltamivir. How are you responding to this?*
- *Many people in your community cannot afford the medicine and/or do not have a primary care physician to prescribe the medicine. How will you distribute the medication to your community?*
- *What essential functions must remain in place? Who decides how limited staff and other resources are allocated?*
- *What essential services must be maintained in the region? How will resources be allocated and accounted for in order to maintain these services? Who decides these issues?*
- *What mental health needs of citizens, health workers, emergency responders, and others must be considered and addressed? How will this be accomplished?*
- *Where will your distribution sites be?*
- *Who will staff your distribution sites?*
- *Who will provide for security of your distribution sites?*
- *Will you assist local health care providers in obtaining PAPRs?*
- *What do you say to the media?*

Day Six:

There are now over 1,000 suspected cases of avian flu admitted to hospitals across the nation, over half of which are in your community. 17 people have died so far. Local and

hospital pharmacy stocks of oseltamivir are depleted. All local hospitals are full and several hospitals are reporting an increase in sick calls. EMS is also overwhelmed between calls for respiratory illnesses and requests to transfer patients from local hospitals to other facilities farther away. No EMS personnel are equipped with PAPRs, but all have been fit-tested for N-95 respirators. Only a limited number of private ambulances are available to assist them with transfers. Local residents are flooding your phone lines seeking information and support regarding avian influenza. Common inquiries include questions regarding the safety of consuming poultry, the availability of oseltamivir, and what people can do to protect themselves. Two local pharmacies have witnessed break-ins, presumably by persons looking for oseltamivir. Local businesses are decimated from a lack of workers and a lack of customers. The local mortuaries are refusing to accept the bodies of influenza victims.

Most recently, the CDC has issued the following Official Health Advisory via the Health Alert Network (HAN): “Based on current data from Southeast Asia, in the absence of sufficient vaccine supply, the most effective control measures for avian influenza appears to be increased social distance. On the basis of this available information, CDC is providing an interim recommendation that state and local officials in communities affected by avian influenza institute control measures to minimize contact with potentially infectious persons. The CDC urges these officials to consider measures including: cancellation of large gatherings; school closings; curfews; and incentives to area businesses and organizations for limiting operations to essential services.”

Often, local health emergency plans stop when state and federal assistance is requested. However, even after public distribution and/or vaccination sites are opened and staffed, public health has ongoing responsibilities.

- *How will you follow the CDC’s recommendation to increase social distance?*
- *Hospitals are full, and there are severe staff shortages. The least ill patients are being sent home. Have any plans been made for provision of home health care?*
- *Does your community have a plan to educate local residents on subjects such as how to care for milder cases at home, symptoms pointing to the need for professional medical care, who will be at higher risk of serious illness, and where to go for medical care if residents do not have a regular source of medical care?*
- *What special issues need to be considered related to various populations such as persons who are geographically isolated, non-English speakers, hearing impaired persons, the elderly, and others with already limited access to healthcare?*
- *How can you help your local hospital, PCP offices and EMS providers with surge capacity?*
- *How will you rapidly help public safety find appropriate PPE, and train and fit-test them in its use?*
- *How will the deceased be safely and respectfully handled, and how will religious beliefs be addressed?*

- *What do you say to the media?*

Day 10:

The outbreak has been confirmed as a novel strain of avian influenza H5N1 with genetic components of human influenza. It clearly appears to be transmissible from person-to-person. There are almost one thousand cases nationally. Your community remains severely affected. Several hospital workers have become infected with avian influenza and six have died. Area hospitals continue to report much higher than normal sick calls.

Day 21:

Avian influenza has now become a pandemic in the United States and East Asia with more than 38,000 people infected and nearly 26,400 dead. Public health officials around the world are beginning to see a decrease in the rate of new cases as they implement effective control measures but the health care system remains overwhelmed.



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian/Pandemic Influenza Materials for Additional Participants: Police Department

In the first day of the scenario, there may be little out of the ordinary for law enforcement. The main challenge for law enforcement will be to assist the local hospital with security for isolation and media and crowd control.

However, once/if public health decides to quarantine suspected contacts of the initial (“index”) patient, the job for law enforcement becomes quite difficult:

- *Under what legal authority can public health impose quarantine?*
- *What resources would you be able to dedicate to public health to help them investigate possible contacts of the initial patients?*
- *What resources do you have to impose quarantine?*
- *What is your plan for quarantine?*
- *Are you able to assist public health with the delivery of food, water and medicines to quarantined persons?*
- *How will you coordinate your message to the media with public health to make sure no conflicting instructions are given?*

As the outbreak spreads, your officers may have questions about their safety:

- *Are any of your officers trained and fit-tested to wear biological personal protective equipment?*
- *To whom will you turn for answers about your officers’ safety?*

As the outbreak spreads further, there may be additional security concerns:

- *How will you help provide for security at the community point-of-dispensing sites for medications?*
- *Do you know ahead of time where those sites will be?*
- *What are your procedures for persons who are unwilling to be voluntarily quarantined?*

- *Are your officers equipped to restrain these persons if those persons are also infectious?*
- *Given the above demands on your staff, how would you also deal with traffic flow, if there were simultaneously a mass exodus from your community?*

If large numbers of law enforcement personnel are affected, who will provide the necessary services?



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian/Pandemic Influenza Materials for Additional Participants: Fire & EMS

In the first day of the scenario, there will be little out of the ordinary for the fire and EMS services. However, as the outbreak spreads, your services will rapidly face a number of challenges:

- *You may be requested to help staff points-of-dispensing for medications and/or vaccinations. Can you accept that request?*
- *Are you able to help with delivery of food and water to quarantined persons?*
- *Many staff will have concerns for their safety. Are they already equipped and fit-tested with biological personal protective equipment?*
- *Does your staff know when to wear such PPE?*
- *How will you adequately, rapidly, and repeatedly clean and disinfect your equipment?*
- *Standards for handling suspected avian influenza patients might change rapidly. From where will you obtain your most current information?*
- *Would you be able to assist with inter-facility transfers of patients if no other resources (i.e. private EMS services) were available?*
- *Could the system handle a surge of 30% or more requests on a daily basis during the peak period?*
- *How long can this increased level of response be sustained?*
- *Is there a priority system in providing patient transport? Who decides the priority? What criteria are used in making the decision?*
- *What alternative sources could be used for patient transport?*
- *Some staff, if exposed to avian influenza without proper PPE or if showing signs of influenza infection may be quarantined. Those staff may refuse to go home (in order to protect their families). Do you have any procedures in place for them?*
- *How will such persons be compensated for lost wages?*
- *How will you obtain mutual aid if surrounding communities are similarly affected?*
- *How will you coordinate your message to the media with public health to ensure conflicting information is not generated?*

- *Are you expecting an increase in sick calls during a major infectious outbreak?*
- *You may rapidly deplete stocks of biological PPE. How will you rapidly re-stock your supplies?*



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian/Pandemic Influenza Materials for Additional Participants: Local Government

From the beginning, this scenario brings about a great deal of risk for your citizens and a great deal of unwelcome media attention.

- *When will you be notified of a potential infectious disease outbreak in your community?*
- *How will this occur?*
- *On whom will you rely for expert opinion and guidance?*
- *How will you mediate conflicts (if any) among public health, police, fire and EMS?*
- *Who will speak to the media?*
- *How will you keep the name of your community from forever being known as the "Bird Flu Town"?*
- *How will you coordinate your community's message so that conflicting information is not distributed?*
- *To whom do you report at the state level?*
- *How are reports made?*
- *Will you close the schools?*
- *Will you close government offices?*
- *Will you recommend businesses close?*

Once the outbreak represents a clear threat to the health of your community:

- *How do you decide to make recommendations about citizens' movement (i.e. going to work, going shopping, etc.)?*
- *How will you balance real economic needs with public health concerns?*
- *How will you monitor the activities of public health, public safety and health care in your community?*
- *How can you assist the above people with obtaining resources and support?*

- *Does your community have a plan to provide for a surge in mental health and social services needs? In your opinion, is the plan adequate to meet the potential needs posed by an influenza pandemic?*
- *What is the role of voluntary and religious organizations? Is someone responsible for coordinating their efforts?*



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian/Pandemic Influenza

Materials for Additional Participants: Hospitals & Healthcare Providers

The initial step in starting an investigation of an infectious outbreak begins with a report from the medical community to public health:

- *What surveillance mechanisms are currently in place in your institution?*
- *How well are your staff educated in mandatory reporting requirements and how frequently are they updated in a new situation (e.g. SARS)?*
- *Does your staff know how to contact public health?*
- *From triage in the Emergency Department through the ICUs and morgue, how well trained are your staff in isolation procedures?*
- *How will you coordinate your message with public health to ensure that conflicting information is not generated?*

An epidemic such as this will rapidly overwhelm any institution:

- *When would you activate your disaster plan?*
- *Have you coordinated your isolation plans with local law enforcement?*
- *How many isolation beds do you have now? How many can you create in 24 and/or 72 hours?*
- *What stocks of biological PPE, thermometers, and HEPA filters do you have on-hand currently? How quickly can you get replacements?*
- *What cache of appropriate pharmaceuticals do you currently have on hand? How will you get replacements?*
- *Have you coordinated your isolation plan with public health? With other health-care institutions? With the Red Cross?*
- *Some staff, if exposed to avian influenza without proper PPE or if showing signs of influenza infection may be quarantined. Those staff may refuse to go home (in order to protect their families). Do you have any procedures in place for them?*
- *How will such persons be compensated for lost wages?*
- *Once you have exceeded your staffed and/or licensed bed capacity, how will you accommodate additional patients who present needing care?*

- *If all hospitals in your region are similarly over-capacity and cannot accept transfers, who will coordinate transfers from all institutions out of the region, if possible?*
- *If all hospitals in your region are similarly over-capacity and cannot accept transfers, who will coordinate requests for additional staff and supplies? Open alternate or expand current facilities? Will the newly available beds in these facilities meet the need?*
- *Will admission criteria be modified? Will discharge criteria be modified? Cancel elective procedures? Other measures?*
- *How will changes in standards be addressed from a legal point of view?*
- *Will there be authority to waive credentialing requirements for persons with the necessary skills but who are not currently licensed?*
- *Has your jurisdiction looked into legal issues that may affect your ability to use volunteers and other non-credentialed staff?*
- *Is changing nurse/patient ratios a reasonable short-term option?*
- *Using volunteers and/or patient family members? Other approaches?*



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian/Pandemic Influenza Background Information on Avian Influenza from the CDC & WHO (current as of 14 July 2006)

There are many different subtypes of type A influenza viruses. These subtypes differ because of changes in certain proteins on the surface of the influenza A virus, namely hemagglutinin (HA) and neuraminidase (NA). There are 16 known HA subtypes and 9 known NA subtypes of influenza A viruses, and any combination of HA and NA proteins are possible. Each combination represents a different subtype, and all known subtypes of influenza A viruses can be found in birds.

Although avian influenza A viruses usually do not infect humans, more than 200 confirmed cases of human infection with avian influenza viruses have been reported since 1997. All human infections have been associated with the H5, H7, and H9 subtypes. Only viruses of the H5 and H7 subtypes are known to cause highly pathogenic form of influenza; however, not all H5 and H7 subtypes are highly pathogenic.

Current Situation

Outbreaks of avian influenza A (H5N1) among poultry are ongoing in several countries in Asia and Eastern Europe. As of 14 July 2006, the World Health Organization has confirmed a total of 230 human cases of avian influenza A (H5N1), with 132 associated deaths. The majority of the reported cases were in Asia: Vietnam has reported 93 cases and 42 deaths; Indonesia 53 cases and 41 deaths; Thailand 22 cases and 14 deaths; China 19 cases and 12 deaths; and Cambodia six cases and six deaths. Most recently, avian influenza A (H5N1) has been detected in Europe and Africa, with 12 cases and four deaths in Turkey, two cases and two deaths in Iraq, eight cases and five deaths in Azerbaijan, 14 cases and six deaths in Egypt, and one case and no deaths in Djibouti. Most cases have occurred in previously healthy children and young adults.

To date, person-to-person transmission of the H5N1 virus has been rare, and transmission has not continued beyond one person. One instance of probable limited human-to-human transmission of influenza A (H5N1) virus was reported in Thailand between a child and her mother and aunt in September 2004.

Health authorities in Vietnam are investigating two possible instances of limited human-to-human transmission in family clusters. One instance involves two brothers in Vietnam with confirmed influenza A (H5N1) infections; a third brother was hospitalized for observation only and did not become ill. In the second instance, a daughter

developed symptoms within 6 days of her mother's onset of illness, which was confirmed as influenza A (H5N1). Investigations are exploring possible sources of exposure and looking for other signs of illness in family members, other close contacts, and the general community.

The most recent instance of potential human-to-human transmission involves a family cluster in North Sumatra, Indonesia, where seven members of an extended family became infected with the H5N1 virus. The WHO reported on 23 May 2006 that "although the investigation is continuing, preliminary findings indicate that three of the confirmed cases spent the night in a small room together with the initial case at a time when she was symptomatic and coughing frequently. Other infected family members lived in adjacent homes. All confirmed cases in the cluster can be directly linked to close and prolonged exposure to a patient during a phase of severe illness. Although human-to-human transmission cannot be ruled out, the search for a possible alternative source of exposure is continuing."

The avian influenza A (H5N1) epizootic in Asia, Eastern Europe, and Northeastern Africa poses an important public health threat, and CDC is in communication with WHO and will continue to monitor the situation. The outbreaks are not expected to diminish substantially in the short term, and it is likely that influenza A (H5N1) infection among birds has become endemic to the regions and that human infections will continue to occur. So far, no sustained human-to-human transmission of the influenza A (H5N1) virus has been identified, and no influenza A (H5N1) viruses containing both human and avian influenza virus genes, indicative of gene reassortment, have been detected.

CDC Recommendations for Health Professionals

Enhanced Surveillance

CDC recommends maintaining the enhanced surveillance efforts by state and local health departments, hospitals, and clinicians to identify patients at increased risk for avian influenza A (H5N1) as described in the HAN notice issued most recently on 5 February 2005. Guidelines for enhanced surveillance are as follows.

Testing for avian influenza A (H5N1) is indicated for hospitalized patients with:

- radiographically confirmed pneumonia, acute respiratory distress syndrome (ARDS), or other severe respiratory illness for which an alternate diagnosis has not been established,
- AND history of travel within 10 days of symptom onset to a country with documented H5N1 avian influenza in poultry and/or humans.

Testing for avian influenza A (H5N1) should be considered on a case-by-case basis in consultation with state and local health departments for hospitalized or ambulatory patients with:

- documented temperature of >38°C (>100.4°F),
- AND one or more of the following: cough, sore throat, shortness of breath,
- AND history of contact with poultry (e.g., visited a poultry farm, a household raising poultry, or a bird market) OR a known or suspected human case of influenza A (H5N1) in an H5N1-affected country within 10 days of symptom onset.

Laboratory Testing Procedures

Virus Culture

Highly pathogenic avian influenza A (H5N1) is classified as a select agent, and culturing of clinical specimens for influenza A (H5N1) virus must be conducted under laboratory conditions that meet the requirements for Biosafety Level (BSL) 3 with enhancements. These enhancements include controlled access double-door entry with change room and shower, use of respirators, decontamination of all wastes, and showering out of all personnel. Laboratories working on these viruses must be certified by the U.S. Department of Agriculture. CDC recommends that virus isolation studies be conducted on respiratory specimens from patients who meet the above criteria only if requirements for BSL 3 with enhancements can be met.

Polymerase Chain Reaction (PCR) and Commercial Antigen Testing

Clinical specimens from suspect influenza A (H5N1) cases may be tested by PCR assays under standard BSL 2 conditions in a Class II biological safety cabinet. In addition, commercial antigen detection testing can be conducted under standard BSL 2 conditions used to test for influenza.

Specimens That Should Be Sent to CDC

Specimens from persons meeting the above clinical and epidemiologic criteria should be sent to CDC if:

- The specimen tests positive for influenza A virus by PCR or by antigen detection testing,
- OR, PCR assays for influenza are not available at the state public health laboratory.

CDC also will accept specimens from persons meeting the above clinical criteria even if they test negative by influenza rapid diagnostic testing if PCR assays are not available at the state laboratory. This is because the sensitivity of commercially available rapid diagnostic tests for influenza may not always be optimal.

Interim Recommendations: Infection Control Precautions for Influenza A (H5N1)

All patients who present to a health-care setting with fever and respiratory symptoms should be managed according to recommendations for Respiratory Hygiene and Cough Etiquette and questioned regarding their recent travel history. Isolation precautions identical to those recommended for SARS should be implemented for all hospitalized patients diagnosed with or under evaluation for influenza A (H5N1) as follows:

Standard Precautions

- Pay careful attention to hand hygiene before and after all patient contact

Contact Precautions

- Use gloves and gown for all patient contact

Eye protection

- Wear when within 3 feet of the patient

Airborne Precautions

- Place the patient in an airborne isolation room (i.e., monitored negative air pressure in relation to the surrounding areas with 6 to 12 air changes per hour).
- Use a fit-tested respirator, at least as protective as a NIOSH-approved N-95 filtering facepiece respirator, when entering the room.

These precautions should be continued for 14 days after onset of symptoms until an alternative diagnosis is established or until diagnostic test results indicate that the patient is not infected with influenza A virus. Patients managed as outpatients or hospitalized patients discharged before 14 days should be isolated in the home setting on the basis of principles outlined for the home isolation of SARS patients.



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian/Pandemic Influenza Evaluator Checklist: Public Health 1

Evaluator:	
Date:	
Location:	
Objective:	Risk Communication

Performance Criteria:				
<i>Please answer the following: Y = Yes, N = No, N/A = Not Applicable, N/O = Not Observed</i>				
	Y	N	N/A	N/O
1. Have systems in place to obtain current and accurate information about new threats and diseases in an emergency				
2. Have trained appropriate staff on basic principles of risk communication				
3. Have policies and procedures to appropriately convey credible and up to date disease information to the public				
4. Have policies/plans to effectively communicate rationale for restrictive public health interventions such as quarantine to the media and the public				
5. Have means of communicating health information directly with local public safety and local healthcare providers				
6. Have means of coordinating public health message with local healthcare providers and state and federal public health officials				

Comments:



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian/Pandemic Influenza Evaluator Checklist: Public Health 2

Evaluator:	
Date:	
Location:	
Objective:	Isolation & Quarantine

Performance Criteria: <i>Please answer the following: Y = Yes, N = No, N/A = Not Applicable, N/O = Not Observed</i>				
	Y	N	N/A	N/O
1. Public health is aware of local healthcare isolation practices and is able to recommend changes to such practices rapidly as needed and as directed by state or federal authorities				
2. Legal basis for implementing quarantine is clear and understood among public health, public safety and the judiciary				
3. Policies for implementing quarantine have been developed ahead of time and discussed with community leaders				
4. Policies for implementing quarantine are clear and have been developed with law enforcement				

Comments:



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian/Pandemic Influenza Evaluator Checklist: Public Health 3

Evaluator:	
Date:	
Location:	
Objective:	Mass Dispensing

Performance Criteria:				
<i>Please answer the following: Y = Yes, N = No, N/A = Not Applicable, N/O = Not Observed</i>				
	Y	N	N/A	N/O
1. Sites and staffing for mass point-of-dispensing (POD) sites have been prearranged				
2. Policies exist for acquiring necessary basic supplies for POD sites (directions for public, signs, information sheets for public, basic medical supplies)				
3. Means of obtaining and distributing relevant medications for POD sites (i.e. from pharmacies, SNS, etc.) are clear and broadly known				
4. Security of POD sites has been prearranged				

Comments:



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian/Pandemic Influenza Evaluator Checklist: Police

Evaluator:	
Date:	
Location:	
Objective:	Provide for public safety, including assistance with supervising quarantine while ensuring the safety of your officers

Performance Criteria:

Please answer the following: Y = Yes, N = No, N/A = Not Applicable, N/O = Not Observed

	Y	N	N/A	N/O
1. Officers have been trained and fit-tested to wear appropriate PPE for a biological event				
2. Legal basis for implementing quarantine is clear and understood among public health, public safety and the judiciary				
3. Policies for implementing quarantine are clear and have been developed with public health				
4. Plans to ensure safety of roadways in case of mass evacuation (either ordered or spontaneous) are in place				
5. Means of rapidly obtaining relevant health information for your staff are in place in the event of an epidemic				

Comments:



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian/Pandemic Influenza Evaluator Checklist: Fire & EMS

Evaluator:	
Date:	
Location:	
Objective:	Provide medical care and emergency transport for as many patients as possible while limiting risks of contagion to your staff and other patients

Performance Criteria:				
<i>Please answer the following: Y = Yes, N = No, N/A = Not Applicable, N/O = Not Observed</i>				
	Y	N	N/A	N/O
1. Personnel have been trained and fit tested to wear appropriate PPE for a biological event				
2. Supplies of PPE are adequate for a large-scale emergency or backup supplies can be obtained rapidly and reliably				
3. Means of rapidly obtaining relevant and current health information for your staff are in place in the event of an epidemic				
4. Staffing policies exist that allow for increased workloads during a public health emergency				
5. Have policies in place and ability to rapidly decontaminate staff, medical equipment and transport vehicles to continue to provide care for infected and non-infected patients				

Comments:



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian/Pandemic Influenza Evaluator Checklist: Local Government

Evaluator:	
Date:	
Location:	
Objective:	Provide leadership and coordinate the response of public health, public safety and local healthcare while ensuring the safety of your community

Performance Criteria:				
<i>Please answer the following: Y = Yes, N = No, N/A = Not Applicable, N/O = Not Observed</i>				
	Y	N	N/A	N/O
1. Have mechanisms in place to receive early notification of public health threats				
2. Have systems in place to obtain current and accurate information about new threats and diseases in an emergency				
3. Have means of coordinating public health message with local healthcare providers, public safety, state and federal officials and others				
4. Policies for implementing quarantine have been developed ahead of time and discussed with community leaders				
5. Are able to supply public health and public safety with additional staff during a health crisis				

Comments:



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian/Pandemic Influenza Evaluator Checklist: Hospitals & Healthcare Providers

Evaluator:	
Date:	
Location:	
Objective:	Provide medical care to all patients while protecting staff and community

Performance Criteria:				
<i>Please answer the following: Y = Yes, N = No, N/A = Not Applicable, N/O = Not Observed</i>				
	Y	N	N/A	N/O
1. Have surveillance mechanisms in place for unusual disease activity				
2. Have educated staff on reportable diseases and mechanisms for reporting diseases to public health				
3. Personnel have been trained and fit tested to wear appropriate PPE for a biological event				
4. Supplies of PPE are adequate for a large-scale emergency or backup supplies can be obtained rapidly and reliably				
5. Clinicians are aware of current CDC and WHO infection control guidelines and are updated regularly				
6. Isolation capacity can be expanded if necessary				

Comments:



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian/Pandemic Influenza After Action Report Guidelines

Following the exercise, combine all evaluation materials into one unified after-action report. Include positive and negative evaluations and propose action items to address deficiencies or gaps in planning, training, and/or resources. Produce an improvement plan with specific action items based upon the after-action report.

The 10 essential functions of public health listed below may be used to structure the report. At right we have listed how those functions are tested in this exercise.

10 Essential Functions of Public Health	Aspects Tested in the Tabletop
1. Monitor health status to identify community problems	Community surveillance, communicable disease reporting, surge capacity
2. Diagnose and investigate health problems and health hazards in the community.	Epidemiology, communicable disease reporting, lab testing
3. Inform, educate, and empower people about health issues.	Risk communication
4. Mobilize community partnerships and action to identify and solve health problems.	Risk communication, surge capacity, mass prophylaxis and dispensing
5. Develop policies and plans that support individual and community health efforts.	Risk communication
6. Enforce laws and regulations that protect health and ensure safety.	Isolation and quarantine
7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable.	Mass prophylaxis and dispensing, surge capacity
8. Assure a competent public health and personal health care workforce.	Risk communication
9. Evaluate effectiveness, accessibility, and quality of personal and population- based health services.	Community surveillance
10. Research for new insights and innovative solutions to health problems.	



HARVARD SCHOOL OF PUBLIC HEALTH

Center for Public Health Preparedness

Tabletop Exercise No. 1: Avian/Pandemic Influenza Selected Suggested Responses to Controller's Notes Questions

Day Two:

- *Who speaks to the media?*
A: Someone who has been trained in risk communication and who is knowledgeable about the subject
- *Who speaks to local government?*
A: Someone who can commit resources with authority
- *Do you activate your emergency plan?*
A: Yes, but probably only partially. Emergency plans should be flexible and graded, not all-or-nothing.
- *Do you increase surveillance?*
A: Yes, absolutely.
- *Do you institute mandatory reporting?*
A: Yes.
- *Do you have a case definition for suspected cases?*
A: Use the WHO definition initially: radiographically confirmed pneumonia, acute respiratory distress syndrome (ARDS), or other severe respiratory illness for which an alternate diagnosis has not been established, and history of travel within 10 days of symptom onset to a country with documented H5N1 avian influenza in poultry and/or humans
- *Who speaks to local health care providers?*
A: Someone knowledgeable who can be authoritative and credible

Day Three:

- *Who will track down contacts of the affected patients?*

A: Public health staff initially. However, as the numbers grow, public health officials should ask for help from the police and municipal government. Ultimately, more resources may arrive from state and federal health officials.

- *How do you get additional staff if required?*

A: Public health can request additional staff from local healthcare and from municipal government. Mechanisms that are in place *before* an actual emergency to rapidly credential and train staff will speed the public health response.

- *How do you decide whether to quarantine contacts of the victims?*

A: Based upon known surveillance and epidemiologic data. The likelihood of quarantine should increase that more contagious the illness appears to be.

- *How do you recommend potential cases be isolated?*

A: As per CDC/WHO recommendations.

- *What personal protective equipment (PPE) should health care workers wear?*

A: As per CDC/WHO recommendations.

- *Should you recommend treatment for anyone exposed to the disease?*

A: As per CDC/WHO recommendations.

Day Four:

- *How will you stay current with state and federal communications and guidelines regarding the outbreak?*

A: You must participate in the Health Alert Network and regularly check the CDC and WHO websites.

- *Pharmacy stocks of oseltamivir, amantidine, and rimantidine are limited. How will you access more medicine?*

A: You should have contact information for the major pharmacies and hospitals in your area to coordinate medication supplies and delivery as needed. The state department of public health can assist with other suppliers and help request access to the SNS when appropriate.

- *Many people in your community cannot afford the medicine and/or do not have a primary care physician to prescribe the medicine. How will you distribute the medication to your community?*

A: Mass dispensing of medications should follow a similar basic plan regardless of the medication or vaccine to be distributed. Each local public health jurisdiction should have a detailed plan in place to rapidly activate, staff and supply point-of-dispensing sites. A webcast primer for such plans can be found at <http://www.phppo.cdc.gov/phtn/antibiotic/default.asp>

Day Six:

- *How can you help your local hospital, MD offices and EMS providers with surge capacity?*

A: Assist with early discharges by coordinating skilled nursing facilities and home visiting nurses, facilitate communications among hospitals regarding bed capacity, coordinate community support and volunteer additional staffing

- *How will you rapidly help public safety find appropriate PPE, and train and fit-test them in its use?*

A: Plans ahead of time with PPE suppliers and with local occupational health care workers facilitate a timely response to a sharp increase in need for biologic PPE.

- *What will hospitals do with their excess of infected corpses?*

A: Refrigerated trucks and ice rinks have been used when necessary as temporary morgues. State public health officials can help request federal disaster mortuary response teams (DMORTs) when appropriate.