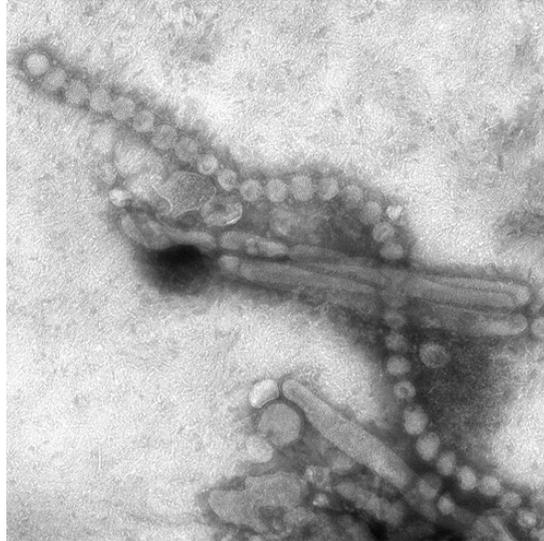


Arizona Department of Health Services Pandemic Influenza Investigation



Situation Manual (SITMAN)
Player's Version
July 22, 2014



July 22, 2014

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PREFACE

The Pandemic Influenza Investigation Tabletop Exercise (TTX) 2014 is sponsored by the Arizona Department of Health Services (ADHS). This Situation Manual (SITMAN) was produced with input, advice and assistance from the Infectious Diseases Epidemiology TTX 2014 Planning Team, which followed the guidance set forth in the Federal Emergency Management Agency (FEMA), Homeland Security Exercise and Evaluation Program (HSEEP).

The SITMAN gives officials, observers and players from participating organizations the information necessary to observe or participate in a healthcare and public health exercise focusing on participants' emergency response plans, policies, and procedures as they pertain to their preparedness and response capabilities. The information in this document is current as of the date of publication, **July 22, 2014**, and is subject to change as determined by the Infectious Diseases Epidemiology TTX 2014 Exercise Planning Team.

The Pandemic Influenza TTX 2014 is an *unclassified exercise*. The control of information is based more on public sensitivity regarding the nature of the exercise than on the actual exercise content. Some exercise material is intended for the exclusive use of exercise planners, facilitators, and evaluators, but players may view other materials deemed necessary to their performance. The SITMAN may be viewed by all exercise participants.

All exercise participants should use appropriate guidelines to ensure the proper control of information within their areas of expertise and to protect this material in accordance with current jurisdictional directives. Public release of exercise materials to third parties is at the discretion of ADHS.

This SITMAN and TTX were supported by the U.S. Department of Health and Human Services (HHS), Office of the Assistant Secretary for Preparedness and Response (ASPR), Office of Preparedness and Emergency Operations (OPEO), Division of National Healthcare Preparedness Programs (NHPP) HPP Cooperative Agreement Catalog of Federal Domestic Assistance (CFDA) number 93.889. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of HHS.

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HANDLING INSTRUCTIONS

1. The title of this document is *Arizona Department of Health Services Pandemic Influenza Investigation Tabletop Exercise 2014 Situation Manual*.
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3. At a minimum, the attached materials will be disseminated only on a need-to-know basis and when unattended, will be stored in a locked container or area offering sufficient protection against theft, compromise, inadvertent access, and unauthorized disclosure.
4. For more information, please consult the following point of contact (POC):

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AGENDA (Subject to change if necessary)

0800 – 0900 **Registration**
0900 – 0930 **Welcoming Remarks & Exercise Overview and Briefing**
 Kristen Herrick, ADHS

Module 1: Initial Case Detection (Assigned Breakout Room)

0935 – 0945 Discussion Group Introductions
0945 – 0955 Situation Briefing: Initial Case Detection
0955 – 1025 Facilitated Discussion (30 minutes)

1025 – 1040 **Break (15 minutes)**

Module 2: Outbreak Detection (Assigned Breakout Room)

1040 – 1050 Situation Briefing: Outbreak Detection
1050 – 1130 Facilitated Discussion (40 minutes)

1130 – 1200 **Large Group Brief Back and Questions/Comments (Black Canyon Conference Room)**

1200 – 1300 **Lunch (1 hour)**

Module 3: Early Pandemic Detection (Assigned Breakout Room)

1300 – 1310 Situation Briefing: Early Pandemic Detection
1310 – 1400 Facilitated Discussion (50 minutes)

1400 – 1430 **Large Group Brief Back and Questions/Comments (Black Canyon Conference Room)**

1430 – 1445 **Break (15 minutes)**

Module 4: Late Pandemic Detection (Assigned Breakout Room)

1445 – 1455 Situation Briefing: Late Pandemic Detection
1455 – 1555 Facilitated Discussion (1 hour)

1600 – 1700 **Large Group Brief Back/HOTWASH, Questions/Comments & Evaluation (Black Canyon Conference Room)**

1700 **Adjourn**

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INTRODUCTION

Background

The Infectious Disease Epidemiology and Preparedness (IDES) Pandemic Influenza Tabletop Exercise (TTX) 2014 is designed to establish a learning environment for local health departments and community partner participants to exercise their outbreak plans, policies, and procedures. This Situation Manual (SITMAN) was produced at the direction of the Arizona Department of Health Services (ADHS) with the input, advice, and assistance of the Infectious Diseases Epidemiology TTX 2014 Exercise Planning Team.

Purpose

The purpose of this exercise is to provide participants an opportunity to evaluate current response concepts, plans, and capabilities for a response to an outbreak affecting YOUR county or facility. The exercise will focus on communication within your agency as well as with other county, state, tribal and federal partners and will focus on several aspects of the investigation and response required for the incident. The exercise also looks at what assets and resources may be needed to deal with the incident, as well as the role of public information to the overall response effort.

Scope

This tabletop exercise will involve county health departments, hospital infection control programs and other county partners and state and federal agencies in responding to a health emergency caused by pandemic influenza.

Target Capabilities

The National Planning Scenarios and the establishment of the National Preparedness Priorities have steered the focus of homeland security toward a capabilities-based planning approach. Capabilities-based planning focuses on planning under uncertainty, since the next threat or disaster can never be forecast with complete accuracy. Therefore, capabilities-based planning takes an all-hazards approach to planning and preparation which builds capabilities that can be applied to a wide variety of incidents. States and Urban Areas use capabilities-based planning to identify a baseline assessment of their homeland security efforts by comparing their current capabilities against the Target Capabilities List (TCL) and the critical tasks of the Universal Task List (UTL). This approach identifies gaps in current capabilities and focuses efforts on identifying and developing priority capabilities and tasks for the jurisdiction. These priority capabilities are articulated in the jurisdiction's homeland security strategy and Multi-Year Training and Exercise Plan.

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The target capabilities listed below have been selected by the Exercise Planning Team and correspond with the priority capabilities identified in the ADHS Multi-Year Training and Exercise Plan. These capabilities provide the foundation for development of the exercise objectives and scenario, as the purpose of this exercise is to measure and validate performance of these capabilities and their associated critical tasks.

Capability 4: Emergency Public Information and Warning

Capability 6: Information Sharing

Capability 10: Medical Surge

Capability 11: Non-Pharmaceutical Interventions

Capability 12: Public Health Laboratory Testing

Capability 13: Public Health Surveillance and Epidemiological Investigation

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Exercise Objectives

The exercise will focus on the following exercise objectives selected by the exercise planning team.

Learning Objectives:

After completing this exercise, participants should be able to

Capability 4: Emergency Public Information and Warning

- determine when to issue public information alerts, warnings, and notifications

Capability 6: Information Sharing

- identify which stakeholders should be incorporated into information flow
- determine communication needs during an influenza pandemic

Capability 10: Medical Surge

- assess the nature and scope of the incident causing the medical surge
- discuss and determine support measures available for medical surge operations

Capability 11: Non-Pharmaceutical Interventions

- determine the infection control measures that should be implemented
- determine the precautionary protective measures associated with this incident that should be communicated to the public

Capability 12: Public Health Laboratory Testing

- collect and properly handle appropriate specimens
- obtain and conduct confirmatory testing and analysis of clinical specimens at Arizona State Public Health Laboratory

Capability 13: Public Health Surveillance and Epidemiological Investigation

- discuss epidemiologic clues indicative of an influenza pandemic
- determine the source of an outbreak
- discuss prevention measures to be implemented to protect the public
- describe the clinical features, epidemiology, and control of influenza

Participants

Players respond to the situation presented based on their knowledge of response procedures, current plans and procedures, and insights derived from training.

Observers support the group in developing responses to the situation during the discussion; however, they are not participants in the moderated discussion period.

Facilitators/Evaluators provide situation updates, moderate discussions and will evaluate the discussions. They also provide additional information or resolve questions as required.

Subject Matter Experts are resources of expert information on medical or technical issues.

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Each module begins with an update that summarizes the key events occurring within that time period. Following the updates, participants review the situation and engage in group discussions in their respective breakout groups.

Following these discussions, participants then enter into a plenary brief back in which a spokesperson from each table presents a synopsis of the group's discussion based on the scenario and questions.

Exercise Guidelines

This is an open, low-stress, no-fault environment. Varying viewpoints, even disagreements, are expected.

Respond based on your knowledge of current plans and capabilities (i.e., you may use only existing assets) and insights derived from training.

Decisions are not precedent-setting and may not reflect your organization's final position on a given issue. This is an opportunity to discuss and present multiple options and possible solutions.

Issue identification is not as valuable as suggestions and recommended actions that could improve response and preparedness efforts.

Assumptions and Artificialities

In any exercise a number of assumptions and artificialities may be necessary to complete play in the time allotted. During this exercise, the following assumptions apply:

The scenario is plausible, and events occur as they are presented.

There is no "hidden agenda", nor any trick questions.

All players receive information at the same time.

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MODULE 1: INITIAL CASE DETECTION

Background:

- Avian influenza A (H7N9) is an influenza virus that has historically only been detected in birds; however, multiple human cases have been detected around the world since March 2013.
- H7N9 is currently circulating in Southeast Asia, has known limited human-to-human transmission with pandemic potential, and the ability to cause severe illness.
- The current World Health Organization (WHO) pandemic influenza phase for H7N9 is phase 4*.
- The Arizona State Public Health Laboratory (ASPHL) has the capacity to test unsubtypeable A specimens for H7N9 with prior approval from Arizona Department of Health Services (ADHS) epidemiologists. At this time, approval would generally only be given if there is reason to suspect H7N9 based on a patient's risk factors or exposure history.
- The antivirals oseltamivir (brand name: Tamiflu®) and zanamivir (brand name: Relenza®) have proven to be effective against H7N9; however, evidence of limited resistance to oseltamivir has been reported from human H7N9 cases. Zanamivir is currently manufactured in Europe and there is a limited supply available in the U.S. at this time.
- A vaccine against H7N9 is currently in development by WHO. It is expected to be available approximately 2-3 months after large-scale production is initiated and will require 2 doses, administered 21 days apart, for best protection.
- It is the middle of the influenza season in Arizona:
 - Influenza activity is currently increasing in Arizona with widespread activity reported for the past 3 weeks
 - Sentinel outpatient providers reported 2.8% of patient visits in the past week were for influenza-like illnesses (above the epidemic threshold of 1.9%)
 - 75% of reports are influenza A and 24% are influenza B
 - 1 influenza-associated pediatric death has been reported this season

**WHO pandemic influenza phases are described in the appendix (Appendix E)*

On Sunday, January 11th at 1:30 pm, a 71 year old female arrives at the Emergency Department of a local hospital IN YOUR COUNTY complaining of fever, chills, cough, sore throat and shortness of breath. Upon examination her vitals were: fever of 100.7⁰ F, heart rate of 108, blood pressure is 96/50, respiratory rate of 27 breaths per minute and O₂ saturation 93% on room air. She was then admitted for pneumonia.

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A nasopharyngeal (NP) swab was collected and a rapid influenza test was done. The results were influenza A positive. On Monday, January 12th, the NP swab was forwarded to ASPHL for additional testing, along with specimens for several other patients, as part of routine influenza surveillance.

On Tuesday, January 13th, the patient's specimen tested positive for influenza A at ASPHL via RT-PCR; however, it could not be subtyped as the seasonal strains of H1 or H3. After repeating the test with the same results, following routine procedures for unsubtypeable influenza A viruses, ASPHL forwarded her specimen to the Centers for Disease Control and Prevention (CDC).

On Friday, January 16th, her specimen tested positive for H7N9 at CDC laboratories. ADHS was notified immediately of these results.

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Question 1: What health messaging should be provided at this time? Who should do this messaging, and who are the audiences?

Question 2: What, if anything, would your agency need to do once you have been notified about this case? What actions would you take now, or what preparations would you start?

Question 3: What infection control measures should the hospital take at this point? What kind of isolation precautions? What kind of personal protective equipment (PPE) should be worn by health care workers caring for this patient?

Question 4: What are your biggest concerns right now?

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MODULE 2: OUTBREAK DETECTION

Epidemiological Update:

- Severe influenza cases have been reported throughout the U.S. and there is co-circulation of seasonal influenza A and B. Confirmed cases of influenza A (H7N9) in other states have recently been reported.
- The current WHO influenza pandemic phase for H7N9 is phase 5.
- Information from these confirmed cases indicate that rapid tests may be providing a false negative result for patients infected with H7N9.
- At this time, only federal and state public health laboratories have the capability to test for H7N9.
- Additional information on the current influenza season in Arizona:
 - Influenza activity is currently increasing in Arizona with widespread activity reported for the past 4 weeks
 - Sentinel outpatient providers reported 3.1% of patient visits were for influenza-like illnesses (above the epidemic threshold of 1.9%)
 - 78% of reports are influenza A and 21% are influenza B
 - 1 influenza-associated pediatric death has been reported this season

1 WEEK AFTER INITIAL DETECTION

A Health Alert Network (HAN) message was sent out to notify hospitals, healthcare providers, and public health officials about the first H7N9 case identified in the Arizona. The local health department initiated a public health investigation of the case, and discovered that although the case has not traveled out of Arizona recently, the case's 35 year old son returned from a business trip to Vietnam on January 2nd where he reported having sick contacts, and immediately came to visit his mother on returning to the U.S. Upon his arrival to Arizona, he began to develop minor influenza-like illness (ILI) symptoms and was cared for by his mother. He never sought medical care, recovered and returned home to California on January 9th.

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3 WEEKS AFTER INITIAL DETECTION

ASPHL staff have continued testing the influenza specimens received for routine lab surveillance in the past weeks, and discover that out of 350 positive influenza results, there have been 15 additional positive influenza samples confirmed as influenza A but that cannot be subtyped as the seasonal strains of H1 or H3. With approval from ADHS epidemiologists, ASPHL tests these 15 unsubtypable specimens for H7N9. All 15 samples test positive for H7N9.

These 15 specimens were received from facilities in eight different counties; five are children and ten are adults. The county health departments have contacted three of the cases, who all indicated they have not traveled out of state and have had no contact with poultry or other birds in the two weeks before they became ill. However, two reported having contact with someone who recently returned from Southeast Asia.

After the additional Arizona cases are identified, another HAN is sent to providers and public health partners to inform them about the cases and that there appears to be local, person-to-person transmission of influenza A (H7N9). Interim guidelines on treatment information, isolation precautions, specimen collection and enhanced surveillance information are included in the HAN.

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Question 5: Do you want to treat this as an outbreak of a novel influenza strain (H7N9) or a severe flu season?

Question 6: Briefly, what are your agency's priority actions at this point?

Question 7: Would your Emergency Operations Center/Emergency Response Plan be activated at this time? If not, what do you anticipate will be the trigger for activation?

Question 8: Which agencies will you coordinate with at this time for responding to or preparing for this situation?

Question 9: What kinds of inquiries do you expect your agency will receive from the media, and how will your agency handle those communications?

Question 10: What challenges do you see implementing infection control measures in your facility?

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Question 11: Given that laboratory capacity at ASPHL will be limited, what criteria would you suggest for prioritizing or identifying the specimens to be tested?

Question 12: What information do you think is important to collect for enhanced surveillance?

Question 13: If additional cases are identified on tribal lands, what considerations would there be for tribal entities and their partners?

Question 14: What are your biggest concerns right now?

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MODULE 3: EARLY PANDEMIC DETECTION

Epidemiological Update:

- Based on case information gathered nationwide, the epidemiology of H7N9 in the U.S. is as follows:
 - 77% of cases are male
 - Median age is 54 years (age range 0-86 years)
 - First presenting with severe ILI – fever, sore throat, cough; many reports of progression to severe pneumonia
 - Most interviewed cases report no travel or poultry contact
 - Fatality rate of 6%

- Based on case information gathered from approximately 200 Arizona cases, the epidemiology of H7N9 in Arizona is as follows:
 - 64% of cases are male
 - Median age is 58 years (age range 3-80 years)
 - First presenting with severe ILI – fever, sore throat, cough
 - Most interviewed cases report no travel or poultry contact
 - 4 fatal cases have been reported (fatality rate of 2%)
 - ASPHL is conducting routine H7N9 testing

- WHO is reporting similar situations across Europe, Central & South America, Australia, and throughout Asia.

- The current WHO influenza pandemic phase for H7N9 is phase 6.

- Production of the H7N9 vaccine has been initiated, but it will not be available on a large scale for another month.

6 WEEKS AFTER INITIAL DETECTION

There are currently large clusters of ILI occurring statewide and approximately 200 specimens have tested positive for H7N9 at ASPHL. Many other states are also reporting a high percentage of ILI as well as a large number of confirmed H7N9 cases, including several deaths.

From initial data collected, the CDC reports that rapid influenza tests being performed at healthcare settings are providing false negative results for those with H7N9 (approximately 20% of H7N9-positive cases tested positive for influenza A by rapid test). There has also been evidence of resistance to the antiviral oseltamivir (brand name: Tamiflu®) documented from an increasing number of reported treatment failures and antiviral resistance testing results. Zanamivir (brand name: Relenza®) still appears to be effective against H7N9; however, it is manufactured in Europe and there is a limited supply in the U.S. at this time.

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CDC has released infection control recommendations for healthcare settings for patients suspected of having H7N9. These recommendations include a higher level of infection control measures than for seasonal influenza. Important differences include recommendations for contact and airborne precautions, specifically, the use of personal eye protection and respirators during all patient-care activities. More detailed infection control information for H7N9 can be found in the appendix (Appendix B).

Surrounding states have begun requesting strategic national stockpile (SNS) materials from the federal government due to the exhaustion of local supplies. The SNS maintains a stockpile of drugs, vaccines, and other medical products and supplies (e.g., PPE) to supplement and resupply state and local inventories during public health emergencies. More detailed information for SNS can be found in the appendix (Appendices F and G).

The WHO has declared the situation to be at pandemic phase 6 (highest phase) with H7N9 having sustained human-to-human transmission and worldwide geographic spread. More detailed information for WHO pandemic influenza phases can be found in the appendix (Appendix E).

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Question 15: Briefly, what are your agency's priority actions at this point?

Question 16: Would you activate your Emergency Operations Center/Emergency Response Plan now, if you have not done so already?

Question 17: What additional messaging, if any, would your agency provide at this point, and to whom?

Question 18: What challenges will the increasing numbers of ill persons pose to your agency?

Question 19: What can be done to anticipate and address the number of worried-well in the community?

Question 20: Are there any changes to enhanced surveillance or criteria for laboratory testing that you would suggest at this time?

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Question 21: How will your agency work to triage patients in the emergency department? How will you maintain PPE and droplet precaution?

Question 22: What are the criteria you think should be considered when deciding how to use the limited supplies of zanamivir (Relenza®) or oseltamivir (Tamiflu®)?

- Who is warranted for treatment?
- Is antiviral prophylaxis appropriate at this time, and if so, for whom?

Question 23: What non-pharmaceutical approaches to disease control are appropriate at this time?

Question 24: Should the Strategic National Stockpile (SNS) be requested for Arizona?

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MODULE 4: LATE PANDEMIC DETECTION

Epidemiological Update:

- Based on case information gathered nationwide, the epidemiology of H7N9 in the U.S. is as follows:
 - 74% of cases are male
 - Median age is 54 years (age range 0-89 years)
 - First presenting with severe ILI – fever, sore throat, cough
 - Sustained human-to-human transmission occurring
 - Fatality rate of 2%

- Based on case information gathered from Arizona cases, the epidemiology of H7N9 in Arizona is as follows:
 - 68% of cases are male
 - Median age is 52 years (age range 3-87 years) and a majority of the cases are >40 years
 - First presenting with severe ILI – fever, sore throat, cough
 - Sustained human-to-human transmission occurring
 - 20 fatal cases have been reported (fatality rate of 1%)

- The current WHO influenza pandemic phase for H7N9 is phase 6.

12 WEEKS AFTER INITIAL DETECTION

Influenza-like illnesses are being reported statewide in many hospitalized patients. Investigations completed by local public health have shown 20 deaths in Arizona that have been attributed to and tested positive for influenza A (H7N9). Approximately 2,000 specimens have tested positive for H7N9 at ASPHL over the last three months; 93% of positive influenza specimens at ASPHL in the last six weeks are confirmed to be H7N9.

Healthcare facilities have been complying with the infection control recommendations put forth by the CDC, but the health departments are receiving reports of depleted medical supplies for many local area pharmacies, health care providers and hospitals. Many hospital infection preventionists are requesting emergency supplies, especially ventilators, gloves, gowns, and masks from the local health departments.

Governor Brewer has requested a deployment of strategic national stockpile (SNS) materials to aid state and local response efforts. SNS supplies include antiviral medication and flu-related medical supplies that will be shipped to ADHS within 12 hours for statewide distribution. It is also expected that the antiviral zanamivir (brand name: Relenza®) will be available from the SNS supplies.

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A limited supply of the H7N9 vaccine will be available for shipment to Arizona in approximately 2 weeks. In order to be most effective, this vaccine will require 2 doses administered 21 days apart. Research has shown that the efficacy of 2 doses of H7N9 vaccine is approximately 73.6% where efficacy for a single dose of H7N9 vaccine is only approximately 55.7%. More vaccine is expected to be delivered in the coming weeks.

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Question 25: What is your agency doing differently now than in Module 3?

Question 26: What additional messaging, if any, would your agency provide at this point, and to whom?

Question 27: Are there any changes to enhanced surveillance or criteria for laboratory testing that you would suggest at this time?

Question 28: How are public health agencies and health care facilities coordinating with each other?

Question 29: What criteria do you think should be considered when deciding who should receive the first, limited, supply of the H7N9 vaccine?

Question 30: As more vaccine becomes available in Arizona, who should be next to receive vaccine? How would you prioritize provision of second doses vs. first doses to susceptible persons?

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Question 31: What partner agency(ies) should have primary responsibility for vaccine coordination, management and distribution?

Question 32: Where and how should the vaccine be administered? How do we get people to return for a second dose, and track that they receive a second dose, especially if there are multiple agencies administering the vaccine?

Question 33: Does your agency have a plan/protocol in place for Points of Dispensing clinics (PODS) for vaccine administration? If so, would you consider activating PODS?

Question 34: Based on this scenario, how well is your agency prepared to respond to a pandemic influenza situation in Arizona? Based on what you learned, are there any edits you would suggest making to your agencies response plan? Are there any areas where additional training is needed?

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ADDITIONAL RESOURCES

1. World Health Organization (WHO): Avian Influenza A (H7N9) Virus
http://www.who.int/influenza/human_animal_interface/influenza_h7n9/en/
2. Centers for Disease Control and Prevention (CDC): Avian Influenza A (H7N9) Virus
<http://www.cdc.gov/flu/avianflu/h7n9-virus.htm>
3. Arizona Department of Health Services (ADHS): Avian Influenza A (H7N9)
<http://www.azdhs.gov/phs/oids/vector/avian-flu/avian-influenza-a-h7n9.htm>
4. CDC Travelers' Health and Avian Flu H7N9 in China
<http://wwwnc.cdc.gov/travel/notices/watch/avian-flu-h7n9-china>
5. CDC Human Infection with Novel Influenza A Virus Case Report Form
<http://epi.publichealth.nc.gov/cd/flu/plan/AppendixB3.pdf>
6. Pandemic Influenza Risk Management WHO Interim Guidance
http://www.who.int/influenza/preparedness/pandemic/GIP_PandemicInfluenzaRiskManagementInterimGuidance_Jun2013.pdf?ua=1
7. Arizona Influenza Pandemic Response Plans (ADHS)
<http://www.azdhs.gov/pandemic-flu/plans.htm>
8. Influenza (Flu) in Arizona <http://www.azdhs.gov/flu/>
9. Flu.gov Planning and Preparedness <http://www.flu.gov/planning-preparedness/index.html>

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APPENDIX A: INFLUENZA A (H7N9) FAQ'S

FAQ's taken from http://www.who.int/influenza/human_animal_interface/faq_H7N9/en/ (6/17/14)

1. What is the avian influenza A (H7N9) virus?

Avian influenza viruses normally circulate among birds. Although some avian H7 viruses (H7N2, H7N3 and H7N7) have occasionally been found to infect humans, no human infections with H7N9 viruses were reported until reports from China in March 2013.

2. What are the main symptoms of human infection with this H7N9 virus?

Thus far, most patients with this infection have had severe pneumonia. Common symptoms include fever, cough and shortness of breath. We know of only a small number of people who presented with influenza-like symptoms and then recovered without medical attention.

3. How many human cases of H7N9 virus infection have been reported in China to date?

New cases that are reported are regularly compiled and posted. The most current information on cases can be found in Disease Outbreak News (DONs) on www.who.int

4. Why is this virus infecting humans now?

This virus was not previously known to be circulating in poultry or other animals. It is not known why some influenza viruses circulating in animals are better able to cross the species barrier and infect humans than others. WHO and animal health partners monitor these viruses continually throughout the world, to try to understand these questions better.

5. What is known about previous human infections with H7 influenza viruses globally?

From 1996 to 2012, human infections with H7 avian influenza viruses (H7N2, H7N3, and H7N7) were reported in Canada, Italy, Mexico, the Netherlands, the United Kingdom, and the United States of America. Most of these infections occurred in association with poultry outbreaks. The infections resulted mainly in conjunctivitis and mild upper respiratory symptoms, with the exception of one death, which occurred in a veterinarian in the Netherlands. Until March 2013, no human infections with avian influenza A(H7N9) viruses had been reported in the world.

6. Is the H7N9 virus different from influenza A(H1N1) and A(H5N1) viruses?

Yes. All three viruses are influenza A viruses but they are distinct from each other. H7N9 and H5N1 viruses are considered animal influenza viruses that sometimes infect people. H1N1 viruses can be divided into those that normally infect people and those that normally infect animals.

7. How are people becoming infected with H7N9 virus?

The available epidemiological and virological information strongly indicates that most known human H7N9 infections result from direct contact with infected poultry, or indirect contact with infected poultry (for example, by visiting wet markets and having contact with environments where infected poultry have been kept or slaughtered). A

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minority of cases appear to have resulted from limited person to person transmission. Because H7N9 infections do not cause severe disease in poultry, this infection can spread “silently” among poultry. Under such circumstances, the exact exposure for individual cases of human infection may be difficult to establish.

Although there have been clusters* of infection (infections in people in close proximity to one another), the virus does not appear to transmit easily from one person to another and further, onward, or sustained human-to-human transmission has not been reported despite investigations and follow up of cases and close contacts of cases.

*A “cluster” is defined as two or more persons with onset of symptoms within the same 14-day period and who are associated with a specific setting, such as a classroom, workplace, household, extended family, hospital, other residential institution, military barracks or recreational camp.

8. How can infection with H7N9 virus be prevented?

It is always prudent to follow basic hygienic practices to prevent infection. They include ensuring hand and respiratory hygiene and taking food-safety precautions.

Hand hygiene

- Wash your hands before, during, and after you prepare food; before you eat; after you use the toilet; after handling animals or animal waste; when your hands are dirty; and before and after providing care to anyone in your home who is sick.
- Hand hygiene will also prevent the spread of infections to yourself (from touching contaminated surfaces) and in hospitals to patients, health care workers and others.
- Wash your hands with soap and running water when hands are visibly dirty; if hands are not visibly dirty, wash them with soap and water or use an alcohol-based hand cleanser.

Respiratory hygiene

- When coughing or sneezing, the person should cover her/his mouth and nose with a medical mask, tissue, or a sleeve or flexed elbow; throw the used tissue into a closed bin immediately after use; perform hand hygiene after contact with respiratory secretions.

9. Is it safe to eat meat/animal products, for example, poultry, eggs, and pork?

Because influenza viruses are inactivated by normal temperatures used for cooking, meat products and eggs can be safely consumed provided they are properly handled during food preparation and thoroughly cooked (so that food reaches 70°C in all parts, e.g. poultry meat is not pink). In areas experiencing outbreaks, the consumption of raw or incompletely cooked meat products and eggs is a high-risk practice and should be discouraged.

Animals that are clearly sick or that have died of diseases or died unexpectedly should not be eaten.

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10. How can meat and eggs be safely prepared?

Always keep raw meat and eggs separate from cooked or ready-to-eat foods to avoid contamination. Do not use the same chopping board or the same knife for raw meat and other foods. Do not handle both raw and cooked foods without washing your hands in between and do not place cooked meat back on the same plate or surface it was on before cooking. Do not use raw or soft-boiled eggs in food preparations that will not be heat treated or cooked. After handling raw meat, wash your hands thoroughly with soap and water. Wash and disinfect all surfaces and utensils that have been in contact with raw meat.

11. Is it safe to visit live poultry markets and farms in areas where human cases have been recorded?

When visiting markets where live poultry or other animals are sold, farms, and households keeping poultry, avoid direct contact with live animals and surfaces in contact with animals. Children should be kept away from sick and dead animals and should wash their hands before eating. If you live on a farm or keep poultry or other animals in your household or backyard, maintain good hygiene, especially wherever food is prepared and consumed, and report sick and dead animals immediately to local authorities. Sick animals should not be butchered and prepared for food.

12. Is the source of human infection poultry and live poultry markets?

Most known human infections results from direct or indirect contact with infected poultry or contaminated environments. A minority of cases appear to have resulted from limited person to person transmission. It cannot yet be confirmed that infected poultry are the only source of infection; and other possible animal or environmental sources of infection cannot be excluded.

13. Can closure of live bird markets affect the transmission of this virus?

In areas where virus is circulating, closure of markets where live birds are sold decreases both the potential exposure of humans. However, other measures taken in markets and along the market chain can also reduce these risks.

To maintain overall hygiene, experts recommend that markets where live birds are sold should be closed briefly on a regular basis, all birds temporarily removed, and markets thoroughly cleaned. Regular monitoring and testing of new birds brought into a market for sale can help ensure earlier detection and removal of influenza-infected birds.

Regular maintenance of live bird markets also ensures that economic disruption and consumer access to protein sources are minimized, and that the bird trade is not diverted into uncontrolled distribution and sales channels.

14. Is there a vaccine for the H7N9 virus?

Currently, no vaccine for the prevention of H7N9 infections in humans is commercially available. WHO is working with its partners for vaccine development and some products are now being tested for efficacy and safety.

15. Does treatment exist for H7N9 infection?

Laboratory testing shows that influenza antiviral medicines called neuraminidase inhibitors (e.g. oseltamivir, zanamivir) are effective against H7N9 but another class of

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antivirals, the adamantanes, are not. Among people with H7N9 infection in China, some of those who received early treatment with neuraminidase inhibitors have developed milder illness than those treated later on.

16. Is the general population at risk of infection with the H7N9 virus?

People are at risk of infection whenever avian influenza viruses are circulating among birds and people are exposed to infected birds or contaminated environments. Although there have been clusters of infection (infections in people in close proximity to another), this virus does not appear to transmit easily from person to person, and sustained human-to-human transmission has not been reported. It is possible that more human infections with H7N9 virus and other non-seasonal influenza subtypes will be detected given the increase in influenza-like infection and severe acute respiratory infection surveillance, testing, and subtyping of influenza A positive specimens throughout the world.

17. Are health care workers at risk of infection with the H7N9 virus?

Health care workers often come into contact with patients with infectious diseases. Therefore, WHO recommends that basic appropriate infection prevention and control measures (standard precautions) be consistently applied in all health care settings at all times, and that the health status of health care workers be closely monitored. Together with standard precautions, health care workers caring for those suspected or confirmed to have H7N9 infection should use additional precautions. See: Infection prevention and control of epidemic- and pandemic-prone acute respiratory diseases in health care

18. What investigations have begun?

Chinese Local and national health authorities are taking the following measures, among others:

- Enhanced surveillance for pneumonia cases of unknown origin to ensure early detection and laboratory confirmation of new cases;
- Epidemiological investigation, including assessment of suspected cases and contacts of known cases;
- Close collaboration with animal health organisations to determine the source of the infection.

19. Does this influenza virus pose a pandemic threat?

An animal influenza virus that develops the ability to transmit easily from person to person could theoretically carry a risk of causing a pandemic. However, at present this virus is causing disease in people through exposure to poultry or contaminated environments. Whether the H7N9 virus will ever change to transmit easily from person to person and actually cause a pandemic is unknown.

20. Is it safe to travel to China?

WHO is not recommending travel restrictions related to H7N9.

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APPENDIX B: INFECTION CONTROL MEASURES FOR H7N9

Infection Control Recommendations taken from
<http://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm> (6/17/14)

During the care of any patient, all HCP in every healthcare setting should adhere to **standard precautions**, which are the foundation for preventing transmission of infectious agents in all healthcare settings: hand hygiene, gloves and gowns.

- Hand Hygiene
 - HCP should perform hand hygiene frequently, including before and after all patient contact, contact with potentially infectious material, and before putting on and upon removal of personal protective equipment, including gloves.
 - Hand hygiene in healthcare settings can be performed by washing with soap and water or using alcohol-based hand rubs.
 - If hands are visibly soiled, use soap and water, not alcohol-based hand rubs.
- Gloves
 - Wear gloves for any contact with potentially infectious material.
 - Remove gloves after contact, followed by hand hygiene. Do not wear the same pair of gloves for care of more than one patient.
 - Do not wash gloves for the purpose of reuse.
- Gowns
 - Wear gowns for any patient-care activity when contact with blood, body fluids, secretions (including respiratory), or excretions is anticipated.
 - Remove gown and perform hand hygiene before leaving the patient's environment.
 - Do not wear the same gown for care of more than one patient.

Adhere to Droplet Precautions

- Droplet precautions should be implemented for patients with suspected or confirmed influenza for 7 days after illness onset or until 24 hours after the resolution of fever and respiratory symptoms, whichever is longer.
- Place patients with suspected or confirmed influenza in a private room or area.
 - When a single patient room is not available, consultation with infection control personnel is recommended to assess the risks associated with other patient placement options (e.g., cohorting [i.e., grouping patients infected with the same infectious agents together to confine their care to one area and prevent contact with susceptible patients], keeping the patient with an existing roommate).
 - HCP should don a facemask when entering the room of a patient with suspected or confirmed influenza. Remove the facemask when leaving the patient's room, dispose of the facemask in a waste container, and perform hand hygiene.
 - If a patient under droplet precautions requires movement or transport outside of the room:
 - Have the patient wear a facemask, if possible, and follow respiratory hygiene and cough etiquette and hand hygiene.

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- Communicate information about patients with suspected, probable, or confirmed influenza to appropriate personnel before transferring them to other departments in the facility (e.g., radiology, laboratory) or to other facilities.

Use Caution when Performing Aerosol-Generating Procedures

- Only performing these procedures on patients with suspected or confirmed influenza if they are medically necessary and cannot be postponed.
- Limiting the number of HCP present during the procedure to only those essential for patient care and support.
- Limiting the number of HCP present during the procedure to only those essential for patient care and support.
- Considering use of portable HEPA filtration units to further reduce the concentration of contaminants in the air.
- HCP should wear respiratory protection equivalent to a fitted N95 filtering facepiece respirator or equivalent N95 respirator (e.g., powered air purifying respirator, elastomeric) during aerosol-generating procedures.
- Unprotected HCP should not be allowed in a room where an aerosol-generating procedure has been conducted until sufficient time has elapsed to remove potentially infectious particles.
- Conduct environmental surface cleaning following procedures.

Manage Visitor Access and Movement Within the Facility

- Limit visitors for patients in isolation for influenza to persons who are necessary for the patient's emotional well-being and care.
- Visits to patients in isolation for influenza should be scheduled and controlled to allow for:
 - Screening visitors for symptoms of acute respiratory illness before entering the hospital.
 - Facilities should provide instruction, before visitors enter patients' rooms, on hand hygiene, limiting surfaces touched, and use of personal protective equipment (PPE) according to current facility policy while in the patient's room.
 - Visitors should not be present during aerosol-generating procedures.
 - Visitors should be instructed to limit their movement within the facility.

Implement Environmental Infection Control

- Standard cleaning and disinfection procedures (e.g., using cleaners and water to preclean surfaces prior to applying disinfectants to frequently touched surfaces or objects for indicated contact times) are adequate for influenza virus environmental control in all settings within the healthcare facility, including those patient-care areas in which aerosol-generating procedures are performed.

Implement Engineering Controls

- Examples of engineering controls include installing physical barriers such as partitions in triage areas or curtains that are drawn between patients in shared areas.

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- Administrative policies and practices that can be used to minimize influenza exposures before arrival, upon arrival, and throughout the duration of the visit to the healthcare setting include: screening and triage of symptomatic patients and implementation of respiratory hygiene and cough etiquette.

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APPENDIX C: CASE DEFINITIONS FOR H7N9

Case definitions taken from <http://www.cdc.gov/flu/avianflu/h7n9/case-definitions.htm> (6/17/14)

Confirmed Case: Avian influenza A (H7N9) virus infection in a patient that is confirmed by CDC's Influenza Laboratory or a CDC certified public health laboratory using methods agreed upon by CDC and CSTE. Confirmation of avian influenza A (H7N9) virus infections may be made by public health laboratories following CDC-approved protocols for detection of avian influenza A (H7N9) virus, or by laboratories using an FDA-authorized test specific for detection of avian influenza A (H7N9) virus.

Probable Case: Illness compatible with influenza in a patient meeting any of the exposure criteria below and for whom laboratory diagnostic testing is positive for influenza A, negative for H1, negative for H1pdm09, and negative for H3 by real-time reverse transcription polymerase chain reaction (RT-PCR) and therefore unsubtypable.

Case Under Investigation: Illness compatible with influenza in a patient meeting any of the exposure criteria below and for whom laboratory confirmation is not known or pending or for whom test results do not provide a sufficient level of detail to confirm avian influenza A (H7N9) virus infection.

- Patients with recent travel (within <10 days of illness onset) to areas where human cases of avian influenza A (H7N9) virus infection have become infected or to areas where avian influenza A (H7N9) viruses are known to be circulating in animals (poultry).¹

OR

- Patients who have had recent close contact (within <10 days of illness onset) with confirmed or suspected³ cases of human infection with avian influenza A (H7N9) virus. Close contact may be regarded as coming within about 6 feet (2 meters) of a confirmed or suspected case while the case was ill (beginning 1 day prior to illness onset and continuing until resolution of illness). This includes healthcare personnel providing care for a confirmed case, family members of a confirmed case, persons who lived with or stayed overnight with a confirmed or suspected case, and others who have had similar close physical contact.²

OR

- Unprotected exposure to live avian influenza A (H7N9) virus in a laboratory.

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APPENDIX D: CDC NOVEL INFLUENZA A VIRUS CASE REPORT FORM



**Human Infection with Novel Influenza A Virus
Case Report Form**

Form Approved
OMB No. 0920-0004
Exp. Date 6/30/2013

Reporter Information

State: _____ Date reported to state/local health department: ___/___/___ (MM/DD/YYYY)

State/Local Case ID: _____

Name of reporter: Last _____ First _____

Telephone: _____ Fax: _____ E-mail: _____

Case-Patient Demographic Information

Date of Birth: ___/___/___ (MM/DD/YYYY) County of Residence: _____

Race: White Asian American Indian/Alaska Native
 Black Native Hawaiian/Other Pacific Islander Unknown
 Other _____

Ethnicity: Hispanic Non-Hispanic Unknown

Sex: Male Female

Medical History – Symptoms, Clinical Course, and Outcome

Date of symptom onset: ___/___/___ (MM/DD/YYYY)

Signs and symptoms: (check all that apply)

<input type="checkbox"/> Fever $\geq 38^{\circ}\text{C}$ (100.4 $^{\circ}\text{F}$) _____ Tmax	<input type="checkbox"/> Sore throat
<input type="checkbox"/> Feverish, but temperature not taken	<input type="checkbox"/> Conjunctivitis
<input type="checkbox"/> Cough	<input type="checkbox"/> Shortness of breath
<input type="checkbox"/> Headache	<input type="checkbox"/> Diarrhea
<input type="checkbox"/> Seizures	<input type="checkbox"/> Other, specify _____

Was the patient hospitalized? Yes No Unknown

Did the patient require mechanical ventilation? Yes No Unknown

Did the patient have a chest x-ray or CAT scan performed?

<input type="checkbox"/> Normal	<input type="checkbox"/> Abnormal	<input type="checkbox"/> Test not performed	<input type="checkbox"/> Unknown
---------------------------------	-----------------------------------	---	----------------------------------

If abnormal:

Was there evidence of pneumonia?
 Yes No Unknown

Did this patient have acute respiratory distress syndrome?
 Yes No Unknown

Did the patient die as a result of this illness? Yes No Unknown

Public reporting burden of this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC/ATSDR Information Collection Review Office, 1600 Clifton Road NE, MS D-74, Atlanta, Georgia 30333; ATTN: PRA (0920-0004).

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Medical History – Vaccination Status, Treatment, and Past Medical History			
Was the patient vaccinated against human influenza in the past year? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
If yes, date of vaccination: ___/___/___ (MM/DD/YYYY)			
Type of vaccine: <input type="checkbox"/> Inactivated <input type="checkbox"/> Live attenuated <input type="checkbox"/> Unknown			
Did the patient receive antiviral medications? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
If yes, complete table below			
Drug	Date Initiated (MM/DD/YYYY)	Date Discontinued (MM/DD/YYYY)	Dosage (if known)
Oseltamivir			
Zanamivir			
Rimantidine			
Amantadine			
Other: _____			
Is the patient pregnant? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
Does the patient have any underlying medical conditions? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
If yes, please specify: _____			
Does the patient have compromised immune function such as HIV infection, cancer, chronic corticosteroid therapy, diabetes, or organ transplant recipient? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
If yes to compromised immune function, please specify: _____			

Medical History –Laboratory Findings and Influenza Specific Diagnostic Testing			
Laboratory Findings:			
Leukopenia (white blood cell count <5,000 leukocytes/mm ³) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
Lymphopenia (total lymphocytes <800/mm ³ or lymphocytes <15% of total WBC) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
Thrombocytopenia (total platelets <150,000/mm ³) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			

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Influenza Specific Diagnostic tests:

Test 1
Specimen type:
 Nasopharyngeal (NP) swab Nasopharyngeal (NP) aspirate Nasal aspirate
 Sputum Oropharyngeal swab Endotracheal aspirate
 Chest tube fluid Bronchoalveolar lavage specimen (BAL) Serology
 Other

Date collected: ___/___/___ (MM/DD/YYYY)

Test type:
 Reverse Transcriptase-Polymerase Chain Reaction (RT-PCR) Direct fluorescent antibody (DFA)
 Viral culture Rapid antigen test

Test result:
 Influenza A Influenza B Influenza type unknown
 Negative Pending

Test 2
Specimen type:
 Nasopharyngeal (NP) swab Nasopharyngeal (NP) aspirate Nasal aspirate
 Sputum Oropharyngeal swab Endotracheal aspirate
 Chest tube fluid Bronchoalveolar lavage specimen (BAL) Serology
 Other

Date collected: ___/___/___ (MM/DD/YYYY)

Test type:
 Reverse Transcriptase-Polymerase Chain Reaction (RT-PCR) Direct fluorescent antibody (DFA)
 Viral culture Rapid antigen test

Test result:
 Influenza A Influenza B Influenza type unknown
 Negative Pending

Indicate when and what type of specimens (including sera) were sent to CDC:

Date Submitted: ___/___/___ (MM/DD/YYYY), Specimen type: _____
 Date Submitted: ___/___/___ (MM/DD/YYYY), Specimen type: _____
 Date Submitted: ___/___/___ (MM/DD/YYYY), Specimen type: _____

Epidemiologic Risk Factors

In the 10 days prior to illness onset, did the patient travel?
 Yes No Unknown

If yes, please fill in the arrival and departure dates for all countries visited.

Country _____	Arrival _____	Departure _____
Country _____	Arrival _____	Departure _____
Country _____	Arrival _____	Departure _____
Country _____	Arrival _____	Departure _____

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The following questions concern the 10 days prior to illness onset:

Did the patient have close contact (within 1 meter (3 feet)) with a person (e.g. caring for, speaking with, or touching) who is a suspected, probable or confirmed novel human influenza A case?

Yes No Unknown

Did the patient touch (handle, slaughter, butcher, prepare for consumption) animals (including poultry, wild birds, or swine) or their remains in an area where influenza infection in animals or novel influenza in humans has been suspected or confirmed in the last month?

Yes No Unknown

Was the patient exposed to animal (including poultry, wild birds, or swine) remains in an area where influenza infection in animals or novel influenza in humans has been suspected or confirmed in the last month?

Yes No Unknown

Was the patient exposed to environments contaminated by animal feces (including poultry, wild birds, or swine) in an area where influenza infection in animals or novel influenza in humans has been suspected or confirmed in the last month?

Yes No Unknown

Did the patient consume raw or undercooked animals (including poultry, wild birds, or swine products) in an area where influenza infections in animals or novel influenza in humans has been suspected or confirmed in the last month?

Yes No Unknown

Did the patient have any animal contact?

Yes No Unknown

If yes, please specify contact with dogs, cats, horses, wild birds, poultry or swine: _____

Did the patient handle samples (animal or human) suspected of containing influenza virus in a laboratory or other setting?

Yes No Unknown

Does the patient work in a health care facility or setting?

Yes No Unknown

Did the patient visit or stay in the same household with any one with pneumonia or severe influenza-like illness?

Yes No Unknown

Did the patient visit or stay in the same household with anyone who died following the visit?

Yes No Unknown

Did the patient visit an agricultural event, farm, petting zoo or place where pigs live or were exhibited (state or county fair) in the last month?

Yes No Unknown

Did the patient have direct contact with pigs at an agricultural event, farm, petting zoo or place where pigs were exhibited (state or county fair) in the last month?

Yes No Unknown

If this patient has a diagnosis of novel influenza A virus infection that has not been serologically confirmed, is there an epidemiologic link between this patient and a laboratory-confirmed or probable novel influenza A case?

Yes No Unknown

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Novel Influenza A Case Definition

Novel influenza A virus infections are all human infections with influenza A viruses that are different from currently circulating human influenza H1 and H3 viruses. These viruses include those that are subtyped as non-human in origin and those that are unsubtypeable with standard methods and reagents.

The clinical presentation of illness should be compatible with influenza virus infection.

Laboratory criteria for diagnosis

A specimen from a human that is reverse transcriptase-polymerase chain reaction (RT-PCR) or culture-positive for influenza A and tests negative for currently circulating human H1 and H3 subtypes.

Cases of human infection with unsubtypeable influenza A viruses detected by a public health laboratory should be sent to CDC's Influenza Virus Surveillance and Diagnosis Branch for laboratory-confirmation.

Case classification

Confirmed – A case of human infection with a novel influenza A virus detected by a public health laboratory that has been laboratory confirmed by CDC.

Probable – A case of human infection with a novel influenza A virus detected by a public health laboratory or a case that meets the clinical criteria and is epidemiologically linked to a confirmed case, and for which laboratory confirmation by CDC's influenza laboratory was not done or was inconclusive.

Suspected – (1) A case of human infection with a novel influenza A virus detected by a public health laboratory, and for which laboratory confirmation by CDC is pending; or (2) A case that meets the clinical criteria and is epidemiologically linked to a confirmed case, and for which laboratory testing for influenza is pending.

CDC Human Infection with Novel Influenza A Virus Case Report Form taken from:
<http://epi.publichealth.nc.gov/cd/flu/plan/AppendixB3.pdf>

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APPENDIX E: WHO PANDEMIC PHASES

In the 2009 revision of the phase descriptions, WHO has retained the use of a six-phased approach for easy incorporation of new recommendations and approaches into existing national preparedness and response plans. The grouping and description of pandemic phases have been revised to make them easier to understand, more precise, and based upon observable phenomena. Phases 1–3 correlate with preparedness, including capacity development and response planning activities, while Phases 4–6 clearly signal the need for response and mitigation efforts. Furthermore, periods after the first pandemic wave are elaborated to facilitate post pandemic recovery activities.

Phase 1: No animal influenza virus circulating among animals has been reported to cause infection in humans.

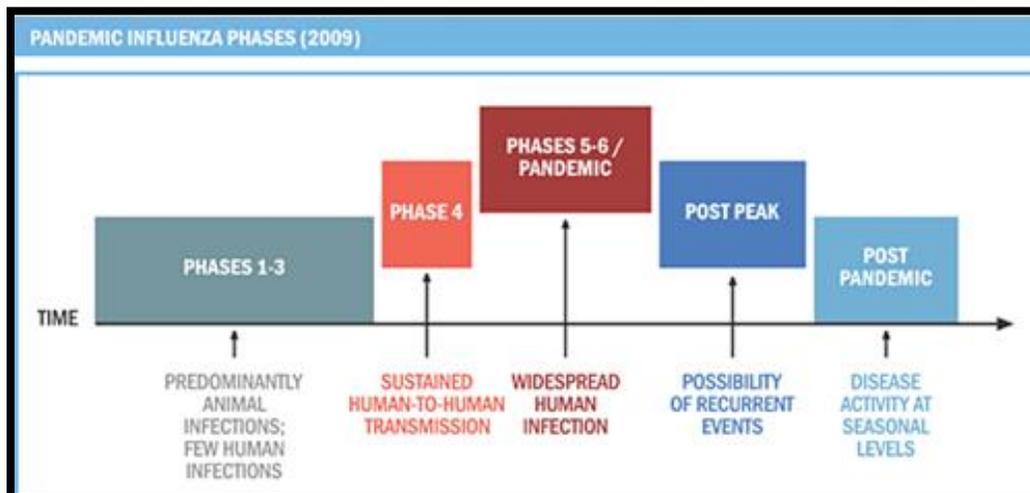
Phase 2: An animal influenza virus circulating in domesticated or wild animals is known to have caused infection in humans and is therefore considered a specific potential pandemic threat.

Phase 3: An animal or human-animal influenza reassortant virus has caused sporadic cases or small clusters of disease in people, but has not resulted in human-to-human transmission sufficient to sustain community-level outbreaks.

Phase 4: Human-to-human transmission (H2H) of an animal or human-animal influenza reassortant virus able to sustain community-level outbreaks has been verified.

Phase 5: The same identified virus has caused sustained community level outbreaks in two or more countries in one WHO region.

Phase 6: In addition to the criteria defined in Phase 5, the same virus has caused sustained community level outbreaks in at least one other country in another WHO region.



More information can be found at <http://www.who.int/csr/disease/swineflu/phase/en/>

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APPENDIX F: STRATEGIC NATIONAL STOCKPILE (SNS)

FACTS

- What is SNS?** The Division of SNS (SNS) is under the CDC with the Department of Health and Human Services. SNS is a national repository of antibiotics, chemical antidotes, vaccines, antitoxins, life-support medications, intravenous administration and airway maintenance supplies and medical/surgical items.
- Purpose:** SNS ensures the availability and rapid deployment of SNS supplies and supports, guides, and advises on efforts by state and local governments to effectively manage and use SNS assets that may be deployed.
- What items are contained in a 12-hour Push Package?** There are 12 Push Packages located strategically around the United States (6% of SNS assets): Each Package contains large amounts of prepackaged, individual 10-day regiments for over 300,000 people, intravenous drugs and supplies for administration, chemical antidotes, and related supplies, airway management supplies, and medical/Surgical supplies. Push Package can be delivered anywhere in the U.S. within 12 hours of a federal order to deploy. Delivery can arrive on nine semi-tractor trailers or one wide body aircraft, weighs over 50 tons and occupies 130 cargo containers, requires 12,000 square feet of floor space for proper receiving, staging and storing. If requesting a Push Package we cannot request part of a package, this is delivered as one kit.
- What is Managed inventory?** Managed inventory is a combination of vendor managed government owned inventory 4% of SNS assets and SNS managed inventory government owned inventory held in warehouses controlled by the SNS this comprises of 90% of SNS assets. Managed inventory is mainly comprised of vaccines, antivirals, and antitoxins. If a request is received for an item not stocked the SNS will use the Veteran's Administration to buy and deliver it from the private sector. Purchases could include medications as well as medical supplies. When requesting managed inventory the State can request type and quantity of item, this allows more flexibility than Push Package, but requires the state to identify specific needs before an order is placed.

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**Previous SNS
Deployments**

- H1N1 Influenza Pandemic 2009, AZ received product from CDC
- September 11, 2001 World Trade Center Response, TARU arrived within 3 hours of approval
 - Push package arrived within 7 hours of approval
 - Managed inventory arrived within 12 hours
- October 2001 Anthrax Response, 70+ Shipments of antibiotics within a 6 week period, SNS response involved 9 states plus DC
- August-September 2005 Hurricane Katrina/Rita Response, Separate TAUR deployed to Louisiana and Mississippi
 - 12-hour Push Package deployed to Mississippi
 - Managed Inventory deployed to Mississippi and Louisiana

For more information, contact Derek Braddock, ADHS SNS Coordinator
Derek.braddock@azdhs.gov or 602-708-4415



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What additional resources are needed, please be specific:			
<input type="checkbox"/> Antibiotics <input type="checkbox"/> ciprofloxacin Quantity of bottles: _____ <input type="checkbox"/> Doxycycline Quantity of bottles: _____		<input type="checkbox"/> Mass Care Cache Unit Quantity: _____	
<input type="checkbox"/> Antivirals Quantity: _____		<input type="checkbox"/> General Care Supplies Quantity: _____	
<input type="checkbox"/> Vaccine Quantity: _____		<input type="checkbox"/> Medical Care Ventilators Quantity: _____	
<input type="checkbox"/> Chemical Countermeasure Quantity: _____		<input type="checkbox"/> Personal Protective Equipment Quantity: _____	
<input type="checkbox"/> Nuclear Countermeasure Quantity: _____		<input type="checkbox"/> Federal Medical Station (FMS)	
<input type="checkbox"/> Radiological Countermeasure Quantity: _____			
<input type="checkbox"/> Other: Quantity: _____			
Are County fiscal resources available: <input type="checkbox"/> YES <input type="checkbox"/> NO If YES, please explain what fiscal resources are available: 			
SURVEILLANCE:			
Multiple persons with similar symptoms, disease, syndrome or deaths: <input type="checkbox"/> YES <input type="checkbox"/> NO			
Date of first report: _____			
Number within population showing symptoms/exposed: _____			
Symptoms (Check all that apply)			
Generalized	Cutaneous	Pulmonary	Gastrointestinal
<input type="checkbox"/> Fever	<input type="checkbox"/> Pre-existing wound	<input type="checkbox"/> Shortness of Breath	<input type="checkbox"/> Nausea
<input type="checkbox"/> Chills	<input type="checkbox"/> Edema	<input type="checkbox"/> Cough	<input type="checkbox"/> Vomiting
<input type="checkbox"/> Headache	<input type="checkbox"/> Eschar	<input type="checkbox"/> Chest Pain	<input type="checkbox"/> Diarrhea
<input type="checkbox"/> Myalgia	<input type="checkbox"/> Reg. Lymphadenopathy		<input type="checkbox"/> Abdominal Pain
<input type="checkbox"/> Fatigue	<input type="checkbox"/> Blisters		<input type="checkbox"/> Anorexia
<input type="checkbox"/> Malaise	<input type="checkbox"/> Burns		<input type="checkbox"/> Bloody Diarrhea
<input type="checkbox"/> Blurred Vision	<input type="checkbox"/> Ulcers at base of tongue		<input type="checkbox"/> Bloody Vomiting
<input type="checkbox"/> Dilated Pupils	<input type="checkbox"/> Neck Swelling		
<input type="checkbox"/> Severe Throat Pain	<input type="checkbox"/> Dysphagia		
Number within population hospitalized: _____			
*Patients currently being treated with: _____ _____			
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Number of patient deaths:
Number within the population with possible exposure:
Patients had exposure to cattle/livestock? <input type="checkbox"/> YES <input type="checkbox"/> NO
*If YES, Animals are: ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> ILL <input type="checkbox"/>
Patient had exposure to Animal Products? <input type="checkbox"/> YES <input type="checkbox"/> NO
Has suspected illness or exposure been determined by medical professional: <input type="checkbox"/> YES <input type="checkbox"/> NO If YES, please explain:
Laboratory Testing:
Laboratory analysis available: <input type="checkbox"/> YES <input type="checkbox"/> NO Date: _____ Reference ID#: _____
<i>Remaining Laboratory information will be filled in by Arizona Department of Health Services ONLY</i>
Confirmed Case? <input type="checkbox"/> YES <input type="checkbox"/> NO If Yes, confirmation based upon: <input type="checkbox"/> Clinical presentation (Check all that apply) <input type="checkbox"/> Laboratory confirmation <input type="checkbox"/> Law Enforcement
Date Identified:
Number of Laboratory Confirmations: _____ First Report Date: _____ Time: _____ Reference ID: _____ Last Report Date: _____ Time: _____ Reference ID: _____
If Lab-confirmed, type of test: <input type="checkbox"/> Culture <input type="checkbox"/> PCR <input type="checkbox"/> Serologic <input type="checkbox"/> IHC <input type="checkbox"/> Other:
Sentinel Laboratory Report Location(s): _____ Date(s): _____ Summary:
Results reported to CDC Laboratory Response Network: <input type="checkbox"/> YES <input type="checkbox"/> NO CDC Form 4 Submitted: <input type="checkbox"/> YES <input type="checkbox"/> NO
Law Enforcement Credible Threat Assessment
Is law enforcement investigating this incident? <input type="checkbox"/> YES <input type="checkbox"/> NO
Which group of law enforcement? <input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Local
Has law enforcement confirmed any credible threats? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Unknown
Has law enforcement determined additional geographical areas? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Unknown *If YES, please indicate additional geographic areas:

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APPENDIX H: INFLUENZA ANTIVIRAL MEDICATIONS

- **Antiviral medications with activity against influenza viruses are an important adjunct to influenza vaccine in the control of influenza.**
- Influenza antiviral prescription drugs can be used to treat influenza or to prevent influenza.
- Four licensed prescription influenza antiviral agents are available in the United States:
 - Two FDA-approved influenza antiviral medications are recommended for use in the United States during the 2013-2014 influenza season: oral **oseltamivir** (Tamiflu®) and inhaled **zanamivir** (Relenza®). Oseltamivir and zanamivir are chemically related antiviral medications known as neuraminidase inhibitors that have activity against both influenza A and B viruses.
 - Amantadine and rimantadine are antiviral drugs in a class of medications known as adamantanes. These medications are active against influenza A viruses, but not influenza B viruses. As in recent past seasons, there is a high prevalence (>99%) of influenza A(H3N2) and influenza A(H1N1)pdm09 (2009 H1N1) viruses resistant to adamantanes. Therefore, amantadine and rimantadine are not recommended for antiviral treatment or chemoprophylaxis of currently circulating influenza A viruses.
- Antiviral resistance to oseltamivir and zanamivir among circulating influenza viruses is currently low, but this might change. Also, antiviral resistance can emerge during or after treatment in certain patients (e.g., immunosuppressed).
- **Antiviral chemoprophylaxis following exposure to H7N9 virus is generally not recommended. Symptomatic individuals with exposure to H7N9 virus should receive prompt antiviral treatment with a neuraminidase inhibitor.**

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Table 1: Antiviral Medications Recommended for Treatment and Chemoprophylaxis of Influenza*

Antiviral Agent	Activity Against	Use	Recommended For	Not Recommended for Use in	Adverse Effects
Oseltamivir (Tamiflu®)	Influenza A and B	Treatment	Any age ¹	N/A	Adverse events: nausea, vomiting. Sporadic, transient neuropsychiatric events (self injury or delirium) mainly reported among Japanese adolescents and adults.
		Chemo-prophylaxis	3 months and older ¹	N/A	
Zanamivir⁴ (Relenza®)	Influenza A and B	Treatment	7 yrs and older	people with underlying respiratory disease (e.g., asthma, COPD) ⁵	Allergic reactions: oropharyngeal or facial edema. Adverse events: diarrhea, nausea, sinusitis, nasal signs and symptoms, bronchitis, cough, headache, dizziness, and ear, nose and throat infections.
		Chemo-prophylaxis	5 yrs and older	people with underlying respiratory disease (e.g., asthma, COPD) ⁵	

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Table 2: Recommended Dosage and Duration of Influenza Antiviral Medications for Treatment or Chemoprophylaxis*

Antiviral Agent	Use	Children	Adults
Oseltamivir (Tamiflu®)	Treatment (5 days)	<p>If younger than 1 yr old¹: 3 mg/kg/dose twice daily^{2,3}</p> <p>If 1 yr or older, dose varies by child's weight: 15 kg or less, the dose is 30 mg twice a day >15 to 23 kg, the dose is 45 mg twice a day > 23 to 40 kg, the dose is 60 mg twice a day >40 kg, the dose is 75 mg twice a day</p>	75 mg twice daily
	Chemo-prophylaxis (7 days)	<p>If child is younger than 3 months old, use of oseltamivir for chemoprophylaxis is not recommended unless situation is judged critical due to limited data in this age group.</p> <p>If child is 3 months or older and younger than 1 yr old¹ 3 mg/kg/dose once daily²</p> <p>If 1 yr or older, dose varies by child's weight: 15 kg or less, the dose is 30 mg once a day > 15 to 23 kg, the dose is 45 mg once a day > 23 to 40 kg, the dose is 60 mg once a day > 40 kg, the dose is 75 mg once a day</p>	75 mg once daily
Zanamivir ⁴ (Relenza®)	Treatment (5 days)	10 mg (2 5-mg inhalations) twice daily (FDA approved and recommended for use in children 7 yrs or older)	10 mg (2 5-mg inhalations) twice daily
	Chemo-prophylaxis (7 days)	10 mg (2 5-mg inhalations) once daily (FDA approved for and recommended for use in children 5 yrs or older)	10 mg (2 5-mg inhalations) once daily

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Table 3: Duration of Treatment or Chemoprophylaxis*

Treatment	Recommended duration for antiviral treatment is 5 days. Longer treatment courses for patients who remain severely ill after 5 days of treatment can be considered.
Chemo-prophylaxis	Recommended duration is 7 days (after last known exposure).
	For control of outbreaks in institutional settings (e.g. long-term care facilities for elderly persons and children) and hospitals, CDC recommends antiviral chemoprophylaxis for a minimum of 2 weeks, and continuing up to 1 week after the last known case was identified. Antiviral chemoprophylaxis should be considered for all exposed residents, including those who have received influenza vaccination, and for unvaccinated institutional employees.

*All tables adopted from CDC and can be found at <http://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm#dosage>

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Footnotes

¹ Oral oseltamivir is approved by the FDA for treatment of acute uncomplicated influenza with twice-daily dosing in persons 14 days and older, and for chemoprophylaxis with once-daily dosing in persons 1 year and older. Although not part of the FDA-approved indications, use of oral oseltamivir for treatment of influenza in infants less than 14 days old, and for chemoprophylaxis in infants 3 months to 1 year of age, is recommended by the CDC and the American Academy of Pediatrics (Committee on Infectious Diseases, 2013).

² This is the FDA-approved oral oseltamivir treatment dose for infants 14 days and older and less than 1 year old, and provides oseltamivir exposure in children similar to that achieved by the approved dose of 75 mg orally twice daily for adults, as shown in two studies of oseltamivir pharmacokinetics in children (Kimberlin, 2013 [CASG 114], EU study WP22849, FDA Clinical Pharmacology Review). The American Academy of Pediatrics has recommended an oseltamivir treatment dose of 3.5 mg/kg orally twice daily for infants aged 9-11 months for the 2013-14 season, on the basis of data which indicated that a higher dose of 3.5 mg/kg was needed to achieve the protocol-defined targeted exposure for this cohort as defined in the CASG 114 study (Kimberlin, 2013). It is unknown whether this higher dose will improve efficacy or prevent the development of antiviral resistance. However, there is no evidence that the 3.5 mg/kg dose is harmful or causes more adverse events to infants in this age group.

³ Current weight-based dosing recommendations are not appropriate for premature infants. Premature infants might have slower clearance of oral oseltamivir because of immature renal function, and doses recommended for full-term infants might lead to very high drug concentrations in this age group. CDC recommends dosing as also recommended by the American Academy of Pediatrics (Committee on Infectious Diseases, 2013): limited data from the National Institute of Allergy and Infectious Diseases Collaborative Antiviral Study Group provide the basis for dosing preterm infants using their postmenstrual age (gestational age + chronological age): 1.0 mg/kg/dose, orally, twice daily, for those <38 weeks postmenstrual age; 1.5 mg/kg/dose, orally, twice daily, for those 38 through 40 weeks postmenstrual age; 3.0 mg/kg/dose, orally, twice daily, for those >40 weeks postmenstrual age.

⁴ Inhaled zanamivir is approved for treatment of acute uncomplicated influenza with twice-daily dosing in persons aged 7 years and older, and for chemoprophylaxis with once-daily dosing in persons aged 5 years and older.

⁵ Relenza is contraindicated in patients with history of allergy to milk protein.

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