

Massachusetts Department of Public Health (MDPH)

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Update on the Outbreak of Swine Influenza (H1N1) and Interim Recommendations for Diagnosis and Control

<p style="text-align: center;">MDPH Asks Providers to Report All Suspect Cases Immediately to 617-983-6800 and Collect Clinical Specimens for Special Diagnostic Testing</p>

Background

The Centers for Disease Control and Prevention (CDC) has identified 20 confirmed cases of novel swine influenza A (H1N1). These cases are in California, Texas, Kansas, New York and Ohio. The 8 cases confirmed in New York are part of an outbreak at a school where there are approximately 100 individuals with flu-like illness. Other probable cases are being investigated throughout the country. 'Probable' means that they tested positive for influenza A. But, the tests for H1, H2, H3 and H5 are negative by polymerase chain reaction (PCR) and will be sent to CDC for further testing. Of the cases with known age, they range from 7-54 years. To date, all US cases have had self-limited illness and all have recovered. Only 1 of the US cases was hospitalized due to a high risk medical condition.

Preliminary testing reveals the viruses of the confirmed cases to be all genetically similar and additional testing is ongoing. These viruses contain a unique combination of gene segments that have not been reported previously among swine or human influenza viruses in the U.S. or elsewhere worldwide.

In addition, Mexican public health authorities have reported increased levels of respiratory disease, including reports of severe pneumonia cases and deaths, in recent weeks. As of April 25, 2009, 7 specimens from Mexico have tested positive at CDC for the same strain of swine influenza A (H1N1) as identified in U.S. cases. However, no clear data are available to assess the link between the increased disease reports in Mexico and the confirmation of swine influenza in a small number of specimens. WHO is monitoring international cases and will be making recommendations.

Updated information on international cases may be found at:
http://www.who.int/csr/don/2009_04_24/en/index.html

Clinical Presentation

The symptoms of swine flu in people are similar to normal human seasonal influenza and include fever, cough, headache, runny nose, lack of appetite, myalgias and lethargy. Sometimes it includes vomiting and diarrhea. Conjunctivitis has been reported, but is not common. Like seasonal flu, swine flu may cause worsening of underlying chronic medical conditions and invasive bacterial infection.

Clinicians Should Have a High Index of Diagnostic Suspicion

This criteria is evolving. At the current time, clinicians should consider swine influenza infection in the differential diagnosis of patients with febrile respiratory illness and who

- live in California, Texas, Kansas, New York or other places in the US where cases has confirmed or traveled to affected counties in these states; or
- who traveled recently to Mexico; or

- were in contact with persons who had febrile respiratory illness and were in one of the three U.S. counties or Mexico during the 7 days preceding their illness onset; or
- hospitalized patients, those with unusual/severe disease or clusters and outbreak

Patients who meet these criteria should be tested for influenza, and specimens positive for influenza **must** be sent to Massachusetts William A. Hinton State Laboratory for further characterization.

See attachment 1 for CDC's case definitions. These are in transition. For updated information about the case definitions, see http://www.cdc.gov/swineflu/casedef_swineflu.htm.

If patients call describing symptoms that are compatible with swine influenza, arrange for them to come in wearing a mask and follow precautions.

Collection of Clinical Specimens for Diagnosis

Clinicians who suspect swine influenza virus infections in humans **should contact an MDPH epidemiologist immediately** at 617-983-6800 (available 24/7) who will provide guidance about specimen collection and arrange transportation to the William A. Hinton State Laboratory Institute (WAH-SLI).

- Please collect 2 NP swabs using a flexible fine shafted aluminum swab with a synthetic tip such as nylon or Dacron® (do not use a calcium alginate swab or a cotton tip swab with a wooden shaft.) Place them in 2-3 ml of viral transport media. [If the patient is hospitalized with pneumonia, specimens from the lower respiratory tract (e.g., tracheal aspirate, bronchoalveolar lavage) should also be obtained.] Should also be obtained and placed in 2-3 ml of VTM.
- Specimens should be collected within the first 24-72 hours of onset of symptoms ideally and no later than 5 days after onset of symptoms, but can be collected later.
- The specimens should be kept refrigerated at 4°C and sent on cold packs if they can be received by WAH-SLI within five days of the collection date. If samples will be received by the WAH-SLI in five or more days from collection, they should be frozen at -70 °C or below and shipped on dry ice. Be sure to completely fill out a state laboratory specimen submission form with each specimen and make sure the tubes are labeled. The WAH-SLI specimen submission form can be found at: http://www.mass.gov/Eeohhs2/docs/dph/laboratory_sciences/general_submission_form.pdf
- When influenza A is detected in your clinic by rapid testing methods, an aliquot (1-2 ml) of the original suspension (not exposed to test kit reagents) in viral transport media or PBS. The NP swab is the preferred, primary specimen.
- Personal protective measures should be taken by medical personnel caring for or obtaining specimens from patients being tested for influenza or who have suspected probable or confirmed swine influenza. See Interim Guidance for Infection Control for Care of Patients with Confirmed or Suspected Swine Influenza A (H1N1) Virus Infection in a Healthcare Setting: http://www.cdc.gov/swineflu/guidelines_infection_control.htm
For updated information for laboratory workers, see Swine Influenza A (H1N1) Virus Biosafety Guidelines for Laboratory Workers: http://www.cdc.gov/swineflu/guidelines_labworkers.htm

Infectious Period

Persons with swine influenza A (H1N1) virus infection should be considered potentially contagious for 1 day before to up to 7 days following illness onset or until about 24 hours after symptoms are resolved. Children, especially younger children, might potentially be contagious for longer periods.

Infection Control

- Instruct patients to call if they are experiencing symptoms suggestive of swine influenza and other respiratory illness so that the proper precautions can be taken. If possible have them come in at the beginning or end of the day and escort them to an exam room.

- Surgical masks should be placed on patients with respiratory symptoms presenting at health care facilities and other appropriate respiratory and hand hygiene should be used.
- Standard, droplet and contact precautions should be used for all patient care activities, and maintained for 7 days after illness onset or until symptoms have resolved. Airborne precautions are also recommended. Interim guidance on Infection Control in a Health Care Setting and Diagnostic Testing can be found at:
http://www.cdc.gov/swineflu/guidelines_infection_control.htm

Treatment and Prophylaxis

At this time, CDC recommends the use of oseltamivir or zanamivir for the treatment and prophylaxis of infection with swine influenza viruses. The H1N1 viruses are resistant to amantadine and rimantadine. It is not anticipated that the seasonal influenza vaccine will provide protection against the swine influenza A (H1N1) viruses. Recommendations for use of antivirals are changing as the outbreak evolves, and as data on antiviral susceptibilities and response becomes available.

Treatment.

- Antiviral treatment is **recommended** for confirmed cases and any ill person suspected to have swine influenza A (H1N1) virus infection.
 - Antiviral treatment for suspect and confirmed cases and should be initiated as soon as possible after the onset of symptoms and continued for 5 days. (Treatment recommendations are under review right now at CDC and will likely change in the next day or so. Please check the CDC URL below.)
 - Antiviral doses and schedules recommended for treatment of swine influenza A (H1N1) virus infection are the same as those recommended for seasonal influenza.

Chemoprophylaxis.

- Chemoprophylaxis for 7 days is **recommended** for:
 - Household and other close contacts who have **conditions that place them at increased risk** (see attachment 1) with exposure to an ill **confirmed or suspect** case of swine influenza.
 - School children who have conditions that place them at increased risk who had close contact (face-to-face) with a confirmed or suspect case
 - Travelers to Mexico who have conditions that place them at increased risk for complications of influenza
 - Border workers (Mexico) who have conditions that place them at increased risk for complications of influenza
 - Healthcare workers or public health workers with or without high risk conditions who had **unprotected** close contact with an ill confirmed case during the case's infectious period.
- Pre- and post -exposure prophylaxis for 7 days can be **considered** for:
 - Healthcare workers who have conditions that place them at increased risk for complications of influenza who are working in an area with confirmed swine flu cases and who are caring for patients with any acute febrile respiratory illness
 - Non-high risk persons who are travelers to Mexico or first responders or border workers in areas with confirmed cases.

For the **most** current information, see CDC's Interim Guidance on Antiviral Recommendations for Patients with Confirmed or Suspected Swine Influenza A and their Home Contacts is available at:
<http://www.cdc.gov/swineflu/recommendations.htm>

Staying at Home

Persons with febrile respiratory illness should stay home from work or school to avoid spreading infections (including influenza and other respiratory illnesses) to others in their communities. In addition, frequent hand washing can lessen the spread of respiratory illness.

- Those with swine influenza who are stable can and should be cared for at home. CDC's Interim Guidance for Swine influenza A (H1N1): Taking Care of a Sick Person in Your Home is available at http://www.cdc.gov/swineflu/guidance_homecare.htm
- Non-hospitalized ill persons who are a confirmed or suspected case of swine influenza A (H1N1) virus infection should **stay at home** (voluntary isolation) for at least the first 7 days or until 24 hours after resolution of respiratory symptoms.
- People who have swine flu who are cared for at home should:
 - check with their health care provider about any special care they might need if they are pregnant or have a health condition such as diabetes, heart disease, asthma, or emphysema
 - check with their health care provider about whether they should take antiviral medications
 - stay home for at least 7 days or until free of symptoms (including fever) for 24 hours, whichever is longer
 - get plenty of rest
 - drink clear fluids (such as water, broth, sports drinks, electrolyte beverages for infants) to keep from being dehydrated
 - cover coughs and sneezes. Clean hands with soap and water or an alcohol-based hand rub often and especially after using tissues and after coughing or sneezing into hands.
 - avoid close contact with others – do not go to work or school while ill
 - be watchful for emergency warning signs (see below) that might indicate you need to seek medical attention
- Get medical care right away if the sick person at home:
 - has difficulty breathing or chest pain
 - has purple or blue discoloration of the lips
 - is vomiting and unable to keep liquids down
 - has signs of dehydration such as dizziness when standing, absence of urination, or in infants, a lack of tears when they cry
 - has seizures (for example, uncontrolled convulsions) is less responsive than normal or becomes confused

Travel

Please check the CDC website for the latest guidance. Recommendations found at <http://www.cdc.gov/travel/contentSwineFluUS.aspx> will help travelers reduce risk of infection and stay healthy.

The latest information about the number and location of cases in the U.S. and other countries is available at: <http://www.cdc.gov/swineflu/investigation.htm>.

MDPH Efforts

The MDPH has increased our surveillance for possible cases in the Commonwealth. Over the past several days DPH officials communicated with health care providers around the state giving them information on swine flu, what symptoms to look for, and how to report suspect cases. We are in close contact with the CDC and public health officials in other states and will provide the public with updates as new information becomes available.

Letters, advisories and fact sheets are being prepared for schools, childcare centers, hospitals, providers and the general public.

General Advice

Advice everyone can take to help keep from getting or spreading any type of influenza:

Wash your hands often with soap and water, especially after you cough or sneeze. Alcohol-based hands cleaners are also effective.

- Practice good “cough etiquette” by coughing or sneezing into your elbow rather than your hand.
- Try to avoid close contact with sick people.
- If you get sick, stay home from work or school and limit contact with others to avoid infecting them.

If you have any questions about swine influenza, its presentation, diagnosis or control, please call the MDPH immunization program at 617-983-6800.

We will be posting our latest guidance on the MDPH website at www.state.gov/dph. We will also be communicating via the Health and Homeland Alert Network (HHAN), conference calls and list serves.

For CDC's latest guidance on case definitions, infection control, clinical guidance on laboratory safety and information for the public, see: <http://www.cdc.gov/swineflu>.

Attachment 1

Interim Guidance on Case Definitions to be Used For Investigations of Swine Influenza A (H1N1) Cases*

April 26, 2009 08:30 EDT

This document provides interim guidance for state and local health departments conducting investigations of human cases of swine influenza A (H1N1) virus. The following case definitions are for the purpose of investigations of suspected, probable, and confirmed cases of swine influenza A (H1N1) virus infection.

Definitions of Respiratory Illness

1. Acute respiratory illness
Recent onset of at least two of the following:
 1. rhinorrhea or nasal congestion
 2. sore throat
 3. cough
 4. fever or feverishness
2. Influenza-like illness: fever >37.8°C (100°F) plus cough or sore throat

Case Definitions for Infection with Swine Influenza A (H1N1) Virus

1. A Confirmed case of swine influenza A (H1N1) virus infection is defined as a person with an acute respiratory illness with laboratory confirmed swine influenza A (H1N1) virus infection at CDC by one or more of the following tests:
 1. real-time RT-PCR
 2. viral culture
 3. four-fold rise in swine influenza A (H1N1) virus specific neutralizing antibodies
2. A Probable case of swine influenza A (H1N1) virus infection is defined as a person with an acute respiratory illness with an influenza test that is positive for influenza A, but H1 and H3 negative.
3. A Suspected case of swine influenza A (H1N1) virus infection is defined as:
 1. A person with an acute respiratory illness who was a close contact to a confirmed case of swine influenza A (H1N1) virus infection while the case was ill **OR**
 2. A person with an acute respiratory illness with a recent history of contact with an animal with confirmed or suspected swine influenza A (H1N1) virus infection **OR**

3. A person with an acute respiratory illness who has traveled to an area where there are confirmed cases of swine influenza A (H1N1) within 7 days of suspect case's illness onset.

Infectious period for confirmed cases = 1 day before onset to 7 days after onset of illness

Day before onset = Day -1

Onset day = Day 0

Days after onset = Days 1-7

* These definitions are intended for establishing the epidemiology of swine influenza in humans. The definitions to be used for determining infection control measures are contained in [a separate document on infection control](#).

Conditions That Increase Risk of Severe Influenza Infection

- chronic pulmonary, cardiovascular, renal, hepatic, hematological, or metabolic disorders,
- immunosuppression,
- compromised respiratory function, including conditions which increase the risk for aspiration,
- long-term aspirin therapy
- pregnancy
- age \geq 65 years
- age $<$ 2 years