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To: Healthcare Providers, Hospitals, Laboratories, Local Health Departments

From: NYSDOH Bureau of Communicable Disease Control and Wadsworth Laboratory

HEALTH ADVISORY: SWINE INFLUENZA A (H1N1) INFECTION

Please distribute immediately to staff in the Departments of Laboratory Medicine, Critical Care, Emergency Medicine, Family Practice, Internal Medicine, Infectious Disease, Infection Control, Pediatrics, Pulmonary Medicine, and all inpatient and outpatient units.

SUMMARY

The New York State Department of Health (NYSDOH) is sending this advisory to provide information regarding the ongoing investigation of swine influenza A (H1N1) virus infections being conducted by the Centers for Disease Control and Prevention (CDC). The guidance in this advisory only applies to providers seeing patients outside of New York City. For guidance related to providers seeing patients in New York City, see the New York City Department of Health and Mental Hygiene Advisory at: www.nyc.gov/health/nycmed.

This information is based on currently available information, and is interim and subject to change as additional information becomes available.

- **Swine influenza A (H1N1) has been diagnosed in patients in California, Texas, and Mexico.**
- **Cases were first identified when specimens were determined to be positive for influenza A but could not be subtyped with standard methods. Subsequent subtyping at CDC determined that patients were infected with swine influenza A (H1N1).**
- **For all patients presenting with acute respiratory illness, NYSDOH requests that providers obtain recent travel histories to affected areas and test patients meeting the enhanced surveillance criteria for suspect swine influenza A. Providers should report such cases to their Local Health Department (LHD) to arrange submission of specimens to NYSDOH Wadsworth Center for influenza A testing.**
- **All clinical laboratories should submit all positive influenza A specimens to NYSDOH Wadsworth Center AND if known, indicate whether the specimen is from a patient with history of travel to an affected area or outbreak exposure.**
- **NYSDOH requests that providers report any outbreaks of influenza-like illness to their LHD.**
- **Additional information on the outbreaks in the US and Mexico, as well as further clinical guidance, will be provided as it becomes available.**

BACKGROUND

CDC is investigating eight human cases of swine influenza A (H1N1) virus infection that have been identified in San Diego County and Imperial County, California as well as in San Antonio, Texas. In addition, swine influenza A (H1N1) viruses have also been confirmed by CDC from patients in Mexico. Investigations are ongoing to determine the source and extent of the infection. CDC is working with Mexican health officials, the World Health Organization (WHO), state and local officials in California and Texas and other health and animal officials on investigations into these cases. CDC has provided the following interim guidance for this investigation, as detailed on the CDC web site for this investigation: <http://www.cdc.gov/flu/swine/investigation.htm>. This guidance is current as of 7:00 PM on 4/24/09.

ENHANCED SURVEILLANCE CRITERIA

Clinicians should consider swine influenza as well as seasonal influenza virus infections in the differential diagnosis for patients who have febrile respiratory illness and who 1) live in San Diego and Imperial Counties, California, or Guadalupe County, Texas, or traveled to these counties or 2) who travelled recently to Mexico or were in contact with persons who had febrile respiratory illness and were in one of the three US counties or Mexico during the 7 days preceding their illness onset.

Patients who meet these criteria should be tested for influenza and providers should immediately notify their LHD to coordinate collection and submission of specimens directly to Wadsworth Center. Clinicians who suspect swine influenza virus infections in humans should obtain a nasopharyngeal swab from the patient, place the swab in viral transport medium, refrigerate the specimen (do not freeze), and then contact the LHD.

Any unusual clusters of febrile respiratory illness should be reported to the LHD.

PATIENTS WITH ACUTE RESPIRATORY ILLNESS WHO DO NOT MEET CURRENT CASE DEFINITION FOR SWINE INFLUENZA

Patients who do not meet the travel and exposure criteria defined above with influenza-like illness should have influenza testing conducted via routine mechanisms.

INFECTION CONTROL-INTERIM GUIDANCE

For interview and assessment of healthy individuals with epidemiologic links to suspect or confirmed cases of swine influenza, follow Standard Precautions.

For interview and examination of an **ill, suspected case of swine influenza** (meeting current case definition outlined in this advisory), providers should wear a fit-tested N95 respirator [if unavailable, wear a medical (surgical) mask].

For collecting respiratory specimens from an ill suspected case of swine influenza, the following is recommended:

1. Personal protective equipment (PPE): fit-tested disposable N95 respirator [if unavailable, wear a medical (surgical mask)], disposable gloves, gown, and goggles.
2. When completed, place all PPE in a biohazard bag for appropriate disposal.

3. Wash hands thoroughly with soap and water or alcohol-based hand gel.

Recommended Infection Control for a *hospitalized* patient:

- Standard, Droplet and Contact precautions for 7 days after illness onset or until symptoms have resolved.
- In addition, personnel should wear N95 respirators when entering the patient room.
- Use an airborne infection isolation room (AIIR) with negative pressure air handling, if available; otherwise use a single patient room with the door kept closed.
- For suctioning, bronchoscopy, or intubation, use a procedure room with negative pressure air handling.

Recommended PPE for personnel providing clinical care to *ill individuals*:

- Disposable gown, gloves, goggles, N95 respirator.

ANTIVIRAL TREATMENT

Antiviral treatment for confirmed or suspected ill cases of swine influenza virus infection may include either oseltamivir or zanamavir, with no preference given at this time. Initiate treatment as soon as possible after the onset of symptoms. Recommendations for use of antivirals may change as data on antiviral susceptibilities become available. As such, please refer to the CDC website for the most up-to-date guidance on antiviral treatment at: http://www.cdc.gov/flu/swine/investigation.htm#pa_health.

PUBLIC HEALTH NOTIFICATION

Clinicians should contact their LHD to report any suspect case meeting the enhanced surveillance criteria. The LHD will involve the NYSDOH Regional Epidemiology Program. Once the LHD and NYSDOH have decided that the suspect case meets the CDC enhanced surveillance criteria, the LHD will give approval to the clinician for the patient specimen to be submitted to the NYSDOH Wadsworth Center for testing. The clinician should complete the NYSDOH Virus Detection History Form (DOH-1795) noting testing is for a suspect case of swine influenza. Also note relevant patient travel history on this form and results of any influenza laboratory testing that has already been performed. Specimens should be shipped refrigerated (not frozen) overnight to Griffin Laboratory. Specific instructions and contact information for providers are available at: <http://www.wadsworth.org/divisions/infdis/virology/collectsubmit.htm>.

CONTINUING GUIDANCE

The NYSDOH will provide updated guidance as additional information and CDC recommendations become available. Updated information will be posted on the CDC website at: <http://www.cdc.gov/flu/swine/investigation.htm>.

INFORMATION FOR NEW YORKERS ABOUT SWINE FLU CASES IN CALIFORNIA, TEXAS AND MEXICO AS OF 4/24/09

It's important to remember that ANY information we have right now is based on an evolving situation and could change.

We understand that some people may be concerned about cases of swine flu in California, Texas, and Mexico that were caused by a new strain of virus. At this time, no swine flu cases have been identified in New York State.

Some people are worried that this may lead to a pandemic. It's too soon to know whether that will happen. For a flu virus to cause a pandemic it needs to be a brand new strain, produce severe illness, and pass easily from person to person.

The eight swine flu cases identified so far in the US have caused only minor illness.

CDC is working with officials in Mexico to try to find out more information about the cases that have occurred there.

Even though no cases have been reported outside of Mexico, California, or Texas to date, the CDC recommends that people throughout the US stay informed because people who traveled to Mexico, California or Texas might have been exposed and could bring the virus back with them. Updated information will be provided at www.cdc.gov

In New York State, we conduct flu surveillance throughout the year. To make sure that we will know quickly if any swine flu cases occur here, we are arranging to prioritize laboratory testing of samples from people who have flu and have traveled to Mexico, California or Texas.

We'll also prioritize testing of samples from people if we suspect an outbreak, for instance, if influenza like illness occurs in a school or a health care setting.

Right now there are no recommendations for US travelers to change their plans to travel to California, Texas or Mexico, although CDC encourages people not to travel in airplanes if they think they have the flu.

Control of flu in the current situation is the same as for our usual seasonal flu. CDC is recommending general precautions to reduce the spread of flu:

Cover your cough and sneeze;

Wash your hands frequently;

Stay home from work or school if you have influenza like symptoms.

If you have symptoms, check with your health care provider.

These simple steps are important and will help prevent flu. We encourage people to make a habit of them.



Update: Swine Influenza A (H1N1) Infections – California and Texas, April 2009

On April 21, 2009, CDC reported that two recent cases of febrile respiratory illness in children in southern California had been caused by infection with genetically similar swine influenza A (H1N1) viruses. The viruses contained a unique combination of gene segments that had not been reported previously among swine or human influenza viruses in the United States or elsewhere (1). Neither child had known contact with pigs, resulting in concern that human-to-human transmission might have occurred. The seasonal influenza vaccine H1N1 strain is thought to be unlikely to provide protection. This report updates the status of the ongoing investigation and provides preliminary details about six additional persons infected by the same strain of swine influenza A (H1N1) virus identified in the previous cases, as of April 24. The six additional cases were reported in San Diego County, California (three cases), Imperial County, California (one case), and Guadalupe County, Texas (two cases). CDC, the California Department of Public Health, and the Texas Department of Health and Human Services are conducting case investigations, monitoring for illness in contacts of the eight patients, and enhancing surveillance to determine the extent of spread of the virus. CDC continues to recommend that any influenza A viruses that cannot be subtyped be sent promptly for testing to CDC. In addition, swine influenza A (H1N1) viruses of the same strain as those in the U.S. patients have been confirmed by CDC among specimens from patients in Mexico. Clinicians should consider swine influenza as well as seasonal influenza virus infections in the differential diagnosis for patients who have febrile respiratory illness and who 1) live in San Diego and Imperial counties, California, or Guadalupe County, Texas, or traveled to these counties or 2) 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.

Case Reports

San Diego County, California. On April 9, an adolescent girl aged 16 years and her father aged 54 years went to a San Diego County clinic with acute respiratory illness. The youth had onset of illness on April 5. Her symptoms included fever, cough, headache, and rhinorrhea. The father had onset of illness on April 6 with symptoms that included fever, cough, and rhinorrhea. Both had self-limited illnesses and have recovered. The father had received seasonal influenza vaccine in October 2008; the daughter was unvaccinated. Respiratory specimens were obtained from both, tested in the San Diego County Health Department Laboratory, and found to be positive for influenza A using reverse transcription–polymerase chain reaction (RT-PCR), but could not be further subtyped. Two household contacts of the patients have reported recent mild acute respiratory illnesses; specimens have been collected from these household members for testing. One additional case, in a child residing in San Diego County, was identified on April 24; epidemiologic details regarding this case are pending.

Imperial County, California. A woman aged 41 years with an autoimmune illness who resided in Imperial County developed fever, headache, sore throat, diarrhea, vomiting, and myalgias on April 12. She was hospitalized on April 15. She recovered and was discharged on April 22. A respiratory specimen obtained April 16 was found to be influenza A positive by RT-PCR at the San Diego County Health Department Laboratory, but could not be further subtyped. The woman had not been vaccinated against seasonal influenza viruses during the 2008–09 season. Three household contacts of the woman reported no recent respiratory illness.

Guadalupe County, Texas. Two adolescent boys aged 16 years who resided in Guadalupe County near San Antonio were tested for influenza and found to be positive for influenza A on April 15. The youths had become ill with acute respiratory symptoms on April 10 and April 14, respectively, and both had gone to an outpatient clinic for evaluation on

April 15. Identification and tracking of the youths' contacts is under way.

Five of the new cases were identified through diagnostic specimens collected by the health-care facility in which the patients were examined, based on clinical suspicion of influenza; information regarding the sixth case is pending. The positive specimens were sent to public health laboratories for further evaluation as part of routine influenza surveillance in the three counties.

Outbreaks in Mexico

Mexican public health authorities have reported increased levels of respiratory disease, including reports of severe pneumonia cases and deaths, in recent weeks. Most reported disease and outbreaks are reported from central Mexico, but outbreaks and severe respiratory disease cases also have been reported from states along the U.S.-Mexico border. Testing of specimens collected from persons with respiratory disease in Mexico by the CDC laboratory has identified the same strain of swine influenza A (H1N1) as identified in the 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. CDC is assisting public health authorities in Mexico in testing additional specimens and providing epidemiologic support. None of the U.S. patients traveled to Mexico within 7 days of the onset of their illness.

Epidemiologic and Laboratory Investigations

As of April 24, epidemiologic links identified among the new cases included 1) the household of the father and daughter in San Diego County, and 2) the school attended by the two youths in Guadalupe County. As of April 24, no epidemiologic link between the Texas cases and the California cases had been identified, nor between the three new California cases and the two cases previously reported. No recent exposure to pigs has been identified for any of the seven patients. Close contacts of all patients are being investigated to determine whether person-to-person spread has occurred.

Enhanced surveillance for additional cases is ongoing in California and in Texas. Clinicians have been advised to test patients who visit a clinic or hospital with febrile respiratory illness for influenza. Positive samples should be sent to public health laboratories for further characterization. Seasonal influenza activity continues to decline in the United States, including in Texas and California, but remains a cause of influenza-like illness in both areas.

Viruses from six of the eight patients have been tested for resistance to antiviral medications. All six have been found resistant to amantadine and rimantidine but sensitive to zanamivir and oseltamivir.

Reported by: *San Diego County Health and Human Svcs; Imperial County Public Health Dept; California Dept of Public Health. Dallas County Health and Human Svcs; Texas Dept of State Health Svcs. Naval Health Research Center; Navy Medical Center, San Diego, California. Animal and Plant Health Inspection Svc, US Dept of Agriculture. Div of Global Migration and Quarantine, National Center for Preparedness, Detection, and Control of Infectious Diseases; National Center for Zoonotic, Vector-Borne, and Enteric Diseases; Influenza Div, National Center for Infectious and Respiratory Diseases, CDC.*

Editorial Note: In the United States, novel influenza A virus infections in humans, including swine influenza A (H1N1) infections, have been nationally notifiable conditions since 2007. Recent pandemic influenza preparedness activities have greatly increased the capacity of public health laboratories in the United States to perform RT-PCR for influenza and to subtype influenza A viruses they receive from their routine surveillance, enhancing the ability of U.S. laboratories to identify novel influenza A virus infections. Before the cases described in this ongoing investigation, recent cases of swine influenza in humans reported to CDC occurred in persons who either had exposure to pigs or to a family member with exposure to pigs. Transmission of swine influenza viruses between persons with no pig exposure has been described previously, but that transmission has been limited (2,3). The lack of a known history of pig exposure for any of the patients in the current cases indicates that they acquired infection through contact with other infected persons.

The spectrum of illness in the current cases is not yet fully defined. In the eight cases identified to date, six patients had self-limited illnesses and were treated as outpatients. One patient was hospitalized. Previous reports of swine influenza, although in strains different from the one identified in the current cases, mostly included mild upper respiratory illness; but severe lower respiratory illness and death also have been reported (2,3).

The extent of spread of the strain of swine influenza virus in this investigation is not known. Ongoing investigations by California and Texas authorities of the two previously reported patients, a boy aged 10 years and a girl aged 9 years, include identification of persons in close contact with the children during the period when they were likely infectious (defined as from 1 day before symptom onset to 7 days after symptom onset). These contacts have included household members, extended family members, clinic staff members who cared for the children, and persons in close contact with the boy during his travel to Texas on April 3. Respiratory specimens are being collected from contacts found to have ongoing illness.

In addition, enhanced surveillance for possible cases is under way in clinics and hospitals in the areas where the patients reside. Similar investigations and enhanced surveillance are now under way in the additional six cases.

Clinicians should consider swine influenza infection in the differential diagnosis of patients with febrile respiratory illness and who 1) live in San Diego and Imperial counties, California, or Guadalupe County, Texas, or traveled to these counties or 2) 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. Any unusual clusters of febrile respiratory illness elsewhere in the United States also should be investigated.

Patients who meet these criteria should be tested for influenza, and specimens positive for influenza should be sent to public health laboratories for further characterization. Clinicians who suspect swine influenza virus infections in humans should obtain a nasopharyngeal swab from the patient, place the swab in a viral transport medium, refrigerate the specimen, and then contact their state or local health department to facilitate transport and timely diagnosis at a state public health laboratory. CDC requests that state public health laboratories promptly send all influenza A specimens that cannot be subtyped to the CDC, Influenza Division, Virus Surveillance and Diagnostics Branch Laboratory. As a precautionary step, CDC is working

with other partners to develop a vaccine seed strain specific to these recent swine influenza viruses in humans.

As always, 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 (5). Interim guidance on infection control, treatment, and chemoprophylaxis for swine influenza is available at <http://www.cdc.gov/flu/swine/recommendations.htm>. Additional information about swine influenza is available at <http://www.cdc.gov/flu/swine/index.htm>.

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