
NORTHSTAR HEALTHCARE CONSULTING

CLINICAL COMPASS

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SWINE INFLUENZA (H1N1)

BACKGROUND

Swine influenza A, also known as H1N1 or swine flu, is a common respiratory disease amongst pigs. Human infections can occur but are not normally seen. Between 2005 and January 2009, there have been 12 reported cases of swine influenza in the United States with no deaths associated from the virus. The last major outbreak occurred in 1976 in Fort Dix, New Jersey. There were 200 cases of serious illness and one death from swine influenza.



As of April 28th, 2009, seven countries have been infected with the virus. With the most cases reported in Mexico, cases of swine influenza A have also been reported in the United States, Canada, Spain, New Zealand, United Kingdom and Israel. The number of suspected deaths in Mexico has risen to 152 with 1,614 people being infected with the virus. No deaths have been reported from any other country. The United States has reported 64 cases, the first of which were in California (10) and Texas (6). Currently, New York has reported 45 cases, with cases also reported in Kansas (2) and Ohio (1). No cases have been seen in Georgia.

Originally thought to have spread from Mexico, the World Health Organization (WHO) has since noted that the confirmation of human-to-human infections in locations outside of Mexico indicate that the disease was spreading beyond travelers who had visited the country. The origin of some cases in the U.S., Britain and Canada have not been identified according to the WHO. The WHO has raised the pandemic alert level from 3 to 4, signifying that the likelihood of a pandemic has increased, but not that a pandemic is sure to ensue. In a phase 3 alert, infections are predominantly seen in animals with few human

infections while in a phase 4 alert, there is sustained human-to-human infection able to cause community level outbreaks.

TRANSMISSION

Swine influenza A (H1N1) is spread the same way that the seasonal influenza is spread. Viral molecules travel from person-to-person when an infected individual sneezes, coughs or has other close contact with another individual. A person can also be infected by touching an object with the virus, such as a phone or doorknob, and then touching his or her mouth. A person cannot be infected by swine influenza from handling or eating pork products. The virus is contagious from one day before the infected person experiences symptoms to seven or more days after becoming ill; yet children, especially young children, may be contagious for longer periods.

PREVENTION

Currently, there is not a vaccine to prevent swine influenza, but the United States hopes to have the ingredients for a vaccine in early May. The WHO is not recommending travel restrictions at this time; however, since some of the cases reported in the U.S. have been linked to travel to Mexico, the Center for Disease Control and Prevention (CDC) issued a travel warning on April 27th, 2009 to avoid non-essential travel to Mexico. The CDC also recommends the following to prevent the spread of disease:

- ❖ Properly covering the nose and mouth when sneezing or coughing and placing tissues in waste baskets
- ❖ Frequently and properly washing hands (15 to 20 seconds with soap and water) especially after coughing or sneezing
- ❖ Avoiding contact with those that are ill
- ❖ Staying home if you are ill

SYMPTOMS

Swine influenza in humans causes similar symptoms as human influenza and include fever, cough, sore throat, body aches, headache, chills and fatigue. Some people have reported diarrhea and vomiting associated with swine flu. In the past, severe illness (pneumonia and respiratory failure) and deaths (outside of the U.S.) have been reported with swine flu infection in people. More serious symptoms that require immediate medical attention include:

❖ In children

- Fast or trouble breathing
- Bluish skin color
- Not drinking enough fluids
- Not waking up or not interacting
- Abnormal irritability
- Flu-like symptoms improve but then return with fever and worse cough
- Fever with a rash
- Severe diarrhea or vomiting

❖ In adults

- Shortness of breath or difficulty breathing
- Pain or pressure in the chest or abdomen
- Sudden dizziness
- Confusion
- Severe diarrhea or vomiting

Like seasonal flu, swine flu may cause a worsening of underlying chronic medical conditions.

TREATMENT

Most cases of swine influenza previously reported have not required medical attention or antiviral treatment. If antiviral treatment is needed, according to the CDC and the WHO, the swine influenza is resistant amantadine and remantadine, but has been shown to be susceptible to Tamiflu[®] (oseltamivir) or Relenza[®] (zanamivir). These medications work to prevent the virus from replicating, which can decrease the severity and duration of a patient's illness. For best results, treatment with Tamiflu[®] or Relenza[®] should be started within 2 days of symptom onset.

The United States government has 50 million doses of Tamiflu[®] and Relenza[®] in stock and to meet any sudden increase in demand, the CDC's Division of the Strategic National Stockpile is releasing 25% of the national stockpile of Tamiflu[®] and Relenza[®] as well as personal protective equipment and respiratory protection devices. According to a press release, Roche has donated 5 million doses of Tamiflu[®] to the WHO, with 2 million doses available as regional stock at various WHO locations and 3 million doses available as emergency stock ready to be released within 24 hours at the request of the WHO. Roche has also been reported as stating that they can boost production of Tamiflu[®] and can make approximately 400 million doses a year; however, lifting production to the maximum will take some time as the time from drug synthesis to packaging is approximately 8 months. In a press release by GlaxoSmithKline, the company commented that they are closely monitoring the swine influenza situation and are working closely with the appropriate organizations and governments to provide support, increase the production of Relenza[®] and manufacture a vaccine to help prevent swine influenza A once a suitable candidate vaccine strain is available from the WHO.

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