

FAQs regarding Swine Flu

What is Swine Influenza?

Swine Influenza (swine flu) is a respiratory disease in pigs caused by type A influenza virus that regularly causes outbreaks of influenza in pigs. Swine flu viruses cause high levels of illness and low death rates in pigs. Swine influenza viruses may silently circulate amongst pigs throughout the year, but most outbreaks occur during the late fall and winter months similar to outbreaks in humans. The classical swine flu virus (an influenza type A H1N1 virus) was first isolated from a pig in 1930.

How many swine flu viruses are known to be present?

Like all influenza viruses, swine flu viruses change constantly. Pigs can be infected by avian influenza and human influenza viruses as well as swine influenza viruses. When influenza viruses from different species infect pigs, the viruses can re-assort (i.e. swap genes) and new viruses that are a mix of swine, human and/or avian influenza viruses can emerge. Over the years, different variations of swine flu viruses have emerged. At this time, there are four main influenza type A virus subtypes that have been isolated in pigs are: H1N1, H1N2, H3N2, H3N1. However, most of the recently isolated influenza viruses from pigs have been H1N1 viruses.

Can humans catch swine flu?

Swine flu viruses do not normally infect humans. However, sporadic human infections with swine flu have been reported. Most commonly, these cases occur in persons with direct exposure to pigs (e.g. children near pig-farms, slums, or workers in the swine industry). In addition, there have been documented cases of one person spreading swine flu to others. For example, an outbreak of apparent swine flu infection in pigs in Wisconsin in 1988 resulted in multiple human infections, and, although no community outbreak resulted, there was antibody evidence of virus transmission from the patient to health care workers who had close contact with the patients.

How common is swine flu infection in humans?

In the past, CDC (Centre for Communicable Diseases) received reports of approximately one human swine influenza virus infection every one to two years in the U.S., but from December 2005 through February 2009, 12 cases of human infection with swine influenza have been reported.

What are the symptoms of swine flu in humans?

The symptoms of swine flu in people are similar to the symptoms of regular human seasonal influenza i.e. fever, lethargy, lack of appetite and cough. Some people with swine flu also have reported runny nose, sore throat, nausea, vomiting and diarrhoea.

Can people catch swine flu from eating pork?

No. Swine influenza viruses are not transmitted by food. You can not get swine influenza from eating pork or pork products. Eating properly handled and cooked pork and pork products is safe. Cooking pork to an internal temperature of 160°F kills the swine flu virus (as is the case with other bacteria and viruses).

How does swine flu spread?

Influenza viruses can be directly transmitted from pigs to people and from people to pigs. Human infection with flu viruses from pigs are most likely to occur when people are in close proximity to infected pigs, such as in pig barns, livestock exhibits housing pigs, slums etc. Human-to-human transmission of swine flu can also occur. This is thought to occur in the same way as seasonal flu occurs in people, which is mainly person-to-person transmission through coughing or sneezing of people infected with the influenza virus. People may become infected by touching something infected with flu viruses and then touching their mouth or nose.

What do we know about human-to-human spread of swine flu?

In September 1988, a previously healthy 32-year-old pregnant woman was hospitalized for pneumonia and died 8 days later. A swine H1N1 flu virus was detected. Four days before getting sick, the patient visited a 'county fair swine exhibition' where there was widespread influenza-like illness among the swine.

In follow-up studies, 76% of swine exhibitors tested had antibody evidence of swine flu infection but no serious illnesses were detected among this group. Additional studies suggest that one to three health care personnel who had contact with the patient developed mild influenza-like illnesses with antibody evidence of swine flu infection.

How can human infections with swine influenza be diagnosed?

To diagnose swine influenza A infection, a respiratory specimen would generally need to be collected within the first 4 to 5 days of illness (when an infected person is most likely to be shedding virus). However, some persons, especially children, may shed virus for 10 days or longer. Identification as a swine flu influenza A virus requires sending the specimen to a laboratory for testing like, NICD (National Institute of Communicable Diseases, Delhi).

What medications are available to treat swine flu infections in humans?

There are four different antiviral drugs that are licensed for use in the US for the treatment of influenza: *Amantadine*, *Rimantadine*, *Oseltamivir* and *Zanamivir*. While most swine influenza viruses have been susceptible to all four drugs, the most recent swine influenza viruses isolated from humans are resistant to *Amantadine* and *Rimantadine*. At this time, CDC recommends the use of *Oseltamivir* or *Zanamivir* for the treatment and/or prevention of infection with swine influenza viruses.

Is the H1N1 swine flu virus the same as human H1N1 viruses?

No. The genetic composition of H1N1 swine flu viruses is different from human H1N1 viruses and, therefore, vaccines for human seasonal flu would not provide protection from H1N1 swine flu viruses.

How does swine flu spread among pigs?

Swine flu viruses are thought to be spread mostly through close contact among pigs and possibly from contaminated objects moving between infected and uninfected pigs. Herds with continuous swine flu infections and herds that are vaccinated against swine flu may have sporadic disease, or may show only mild or no symptoms of infection.

What are signs of swine flu in pigs?

Signs of swine flu in pigs can include sudden onset of fever, depression, coughing (barking), discharge from the nose or eyes, sneezing, breathing difficulties, eye redness or inflammation, and going off feed.

Is there a vaccine for swine flu?

Vaccines are available to be given to pigs to prevent swine influenza. There is no vaccine to protect humans from swine flu. The seasonal influenza vaccine will likely help provide partial protection against swine H3N2, but not swine H1N1 viruses.

What actions have been taken by the Health Ministry, India ?

- Health authorities on 27.04.2009 decided to screen all travelers coming from US, UK, Canada, Mexico, France and New Zealand, while advising to avoid 'non-essential travel' to these flu-affected countries.
- The scare of a pandemic that could affect millions across the globe, spurred the Indian authorities to put together a containment plan by deploying doctors at nine airports and ports and making it mandatory for all those arriving from the flu-hit countries to undergo checks for fever and throat infection.
- Passengers will be given two forms - one will be a voluntary declaration from the passenger on the history of their exposure to animals and symptoms of influenza illness. The second form will be retained by the passenger which will tell them where to contact in case they develop symptoms in the next 10 days.
- **Two round-the-clock toll free numbers (1075 and 23921401) have also been activated for the public to report influenza like illnesses.**
- Four Labs - National Institute of Communicable Diseases (NICD) in Delhi. National Institute of Virology (Pune), National Institute of Cholera and Enteric Diseases (Kolkata) and Regional Medical Research Centre (Dibrugarh) - have been put on high alert to test human samples for H1N1 infection.
- Fortunately for India, it already has a stockpile of one million doses of Tamiflu, stocked at designated govt. hospitals monitored by the Health Ministry. Two Govt. hospitals in Delhi - Safdarjung and RML have been identified. The government is now planning to double its buffer stock by ordering another million doses of the drug.

What are the case definitions for infection with Swine Influenza A (H1N1) virus ?

A **confirmed case** of swine influenza A (H1N1) virus infection is defined as a person with an acute febrile 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

A **probable case** of swine influenza A (H1N1) virus infection is defined as a person with an acute febrile respiratory illness who is:

- positive for influenza A, but negative for H1 and H3 by influenza RT-PCR, or
- positive for influenza A by an influenza rapid test or an influenza immunofluorescence assay (IFA) plus meets criteria for a suspected case

A **suspected case** of swine influenza A (H1N1) virus infection is defined as a person with acute febrile respiratory illness with onset

- within 7 days of close contact with a person who is a confirmed case of swine influenza A (H1N1) virus infection, or
- within 7 days of travel to community either within the United States or internationally where there are one or more confirmed swine influenza A(H1N1) cases, or
- resides in a community where there are one or more confirmed swine influenza cases.

What is the infectious period ?

Infectious period for a confirmed case of swine influenza A (H1N1) virus infection is defined as 1 day prior to the onset of illness to 7 days after onset.

What is the definition of a close contact ?

Close contact is defined as: within about 6 feet of an ill person who is a confirmed or suspected case of swine influenza A (H1N1) virus infection during the infectious period.

Any special considerations for children ?

Aspirin or aspirin-containing products should not be administered to any confirmed or suspected ill case of swine influenza A (H1N1) virus infection aged 18 years old and younger due to the risk of Reye syndrome. For relief of fever, other anti-pyretic medications are recommended such as acetaminophen or non steroidal anti-inflammatory drugs.

Antiviral Treatment

Empiric antiviral treatment should be considered for confirmed, probable or suspected cases of swine influenza A (H1N1) virus infection. Treatment of hospitalised patients and patients at higher risk for influenza complications should be prioritised. Antiviral treatment with *Zanamivir* or *Oseltamivir* should be initiated as soon as possible after the onset of symptoms. Evidence for benefits from treatment in studies of seasonal influenza is strongest when treatment is started within 48 hours of onset of illness. However, some studies of treatment of seasonal influenza have indicated benefit, including reductions in mortality or duration of hospitalisation even for patients whose treatment was started more than 48 hours after onset of illness. Recommended duration of treatment is five days. Recommendations for use of anti-virals may change as data on antiviral susceptibilities and effectiveness become available. Antiviral doses recommended for treatment of swine influenza A (H1N1) virus infection in adults or children 1 year of age or older are the same as those recommended for seasonal influenza. *Oseltamivir* usage for children < 1 year old was recently approved by the U.S. Food and Drug Administration (FDA) under an Emergency Use Authorization (EUA), and dosage for these children is age-based.

Antiviral Chemoprophylaxis (preventive treatment):

For antiviral chemoprophylaxis (preventive treatment) of swine influenza A (H1N1) virus infection, either *Oseltamivir* or *Zanamivir* are recommended. Duration of antiviral chemoprophylaxis *post-exposure* is 10 days after the last known exposure to an ill confirmed case of swine influenza A (H1N1) virus infection. For *pre-exposure* protection, chemoprophylaxis should be given during the potential exposure period and continued for 10 days after the last known exposure to an ill confirmed case of swine influenza A (H1N1) virus infection. *Oseltamivir* can also be used for chemoprophylaxis under the EUA.

Antiviral chemoprophylaxis (pre-exposure or post-exposure) with either *Oseltamivir* or *Zanamivir* is **recommended** for the following individuals:

1. Household close contacts who are at high-risk for complications of influenza (e.g., persons with certain chronic medical conditions, persons 65 years or older, children younger than 5 years and pregnant women) of a confirmed, probable or suspected case.
2. School children who are at high-risk for complications of influenza (children with certain chronic medical conditions) who had close contact (face-to-face) with a confirmed, probable, or suspected case.
3. Travelers to Mexico, other affected areas who are at high-risk for complications of influenza (e.g., persons with certain chronic medical conditions, persons 65 or older, children younger than 5 years old, and pregnant women).
4. Health care workers or public health workers who were not using appropriate personal protective equipment during close contact with an ill confirmed, probable, or suspect case of swine influenza A (H1N1) virus infection during the case's infectious period.

Pre-exposure antiviral chemoprophylaxis with either *Oseltamivir* or *Zanamivir* can be **considered** for the following:

1. Any health care worker who is at high-risk for complications of influenza (e.g., persons with certain chronic medical conditions, persons 65 or older, children younger than 5 years old, and pregnant women) who is working in an area of the healthcare facility that contains patients with confirmed swine influenza A (H1N1) cases, or who is caring for patients with any acute febrile respiratory illness.
2. Non-high risk persons who are travelers to Mexico, other affected areas, first responders, or border workers who are working in areas with confirmed cases of swine influenza A (H1N1) virus infection.

Use of Anti-virals in Pregnant Women

Oseltamivir or *Zanamivir* are "Pregnancy Category C" medications, indicating that no clinical studies have been conducted to assess the safety of these medications for pregnant women. Because of the unknown effects of influenza antiviral drugs on pregnant women and their fetuses, *Oseltamivir* or *Zanamivir* should be used during pregnancy only if the potential benefit justifies the potential risk to the embryo or fetus; the manufacturers' package inserts should be consulted. However, no adverse effects have been reported among women who received *Oseltamivir* or *Zanamivir* during pregnancy or among infants born to women who have received *Oseltamivir* or *Zanamivir*. Pregnancy should not be considered a contraindication to *Oseltamivir* or *Zanamivir* use. Because *Zanamivir* is an inhaled medication and has less systemic absorption, some experts prefer *Zanamivir* over *Oseltamivir* for use in pregnant women when feasible.

General Advice

- Cover your nose and mouth with a tissue when you cough or sneeze. Throw the tissue in trash can after use.
- Wash your hands often with soap and water, especially after you cough or sneeze. Alcohol-based hand cleaners or disinfectants are also effective.
- Try to avoid close contact with sick patients
- If you get sick, CDC recommends that you stay away from work or school; rest at home; limit contacts with others so that more people don't get infected.
- Avoid touching your eyes, nose or mouth. Germs spread faster by doing so.

Issued in Public Interest by Max Institute of Internal Medicine, Max Healthcare.

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