



## Swine influenza frequently asked questions

26 April 2009

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### What is swine influenza?

Swine influenza, or “swine flu”, is a highly contagious acute respiratory disease of pigs, caused by one of several swine influenza A viruses. Morbidity tends to be high and mortality low (1-4%). The virus is spread among pigs by aerosols, direct and indirect contact, and asymptomatic carrier pigs. Outbreaks in pigs occur year round, with an increased incidence in the fall and winter in temperate zones. Many countries routinely vaccinate swine populations against swine influenza.

Swine influenza viruses are most commonly of the H1N1 subtype, but other subtypes are also circulating in pigs (e.g., H1N2, H3N1, H3N2). Pigs can also be infected with avian influenza viruses and human seasonal influenza viruses as well as swine influenza viruses. The H3N2 swine virus was thought to have been originally introduced into pigs by humans. Sometimes pigs can be infected with more than one virus type at a time, which can allow the genes from these viruses to mix. This can result in an influenza virus containing genes from a number of sources, called a "reassortant" virus. Although swine influenza viruses are normally species specific and only infect pigs, they do sometimes cross the species barrier to cause disease in humans.

### What are the implications for human health?

Outbreaks and sporadic human infection with swine influenza have been occasionally reported. Generally clinical symptoms are similar to seasonal influenza but reported clinical presentation ranges broadly from asymptomatic infection to severe pneumonia resulting in death.

Since typical clinical presentation of swine influenza infection in humans resembles seasonal influenza and other acute upper respiratory tract infections, most of the cases have been detected by chance through seasonal influenza surveillance. Mild or asymptomatic cases may have escaped from recognition; therefore the true extent of this disease among humans is unknown.

### **Where have human cases occurred?**

Since the implementation of IHR(2005)<sup>1</sup> in 2007, WHO has been notified of swine influenza cases from the United States and Spain.

### **How do people become infected?**

People usually get swine influenza from infected pigs, however, some human cases lack contact history with pigs or environments where pigs have been located. Human-to-human transmission has occurred in some instances but was limited to close contacts and closed groups of people.

### **Is it safe to eat pork meat and pork products?**

Yes. Swine influenza has not been shown to be transmissible to people through eating properly handled and prepared pork (pig meat) or other products derived from pigs. The swine influenza virus is killed by cooking temperatures of 160°F/70°C, corresponding to the general guidance for the preparation of pork and other meat.

### **Which countries have been affected by outbreaks in pigs?**

Swine influenza is not notifiable to international animal health authorities (OIE, [www.oie.int](http://www.oie.int)), therefore its international distribution in animals is not well known. The disease is considered endemic in the United States. Outbreaks in pigs are also known to have occurred in North America, South America, Europe (including the UK, Sweden, and Italy), Africa (Kenya), and in parts of eastern Asia including China and Japan.

### **What about the pandemic risk?**

It is likely that most of people, especially those who do not have regular contact with pigs, do not have immunity to swine influenza viruses that can prevent the virus infection. If a swine virus establishes efficient human-to human transmission, it can cause an influenza pandemic. The impact of a pandemic caused by such a virus is difficult to predict: it depends on virulence of the virus, existing immunity among people, cross protection by antibodies acquired from seasonal influenza infection and host factors.

### **Is there a human vaccine to protect from swine influenza?**

There are no vaccines that contain the current swine influenza virus causing illness in humans. It is not known whether current human seasonal influenza vaccines can provide any protection. Influenza viruses change very quickly. It is important to develop a vaccine against the currently circulating virus strain for it to provide maximum protection to the vaccinated people. This is why WHO needs access to as many viruses as possible in order to select the most appropriate candidate vaccine virus.

### **What drugs are available for treatment?**

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<sup>1</sup> International Health Regulation (2005) <http://www.who.int/ihr/about/en/>

Antiviral drugs for seasonal influenza are available in some countries and effectively prevent and treat the illness. There are two classes of such medicines, 1) adamantanes (amantadine and rimantadine), and 2) inhibitors of influenza neuraminidase (oseltamivir and zanamivir).

Most of the previously reported swine influenza cases recovered fully from the disease without requiring medical attention and without antiviral medicines.

Some influenza viruses develop resistance to the antiviral medicines, limiting the effectiveness of chemoprophylaxis and treatment. The viruses obtained from the recent human cases with swine influenza in the United States were sensitive to oseltamivir and zanamivir but resistant to amantadine and rimantadine.

Information is insufficient to make recommendation on the use of the antivirals in prevention and treatment of swine influenza virus infection. Clinicians have to make decisions based on the clinical and epidemiological assessment and harms and benefit of the prophylaxis/treatment of the patient<sup>2</sup>. For the ongoing outbreak of the swine influenza infection in the United States and Mexico, the national and the local authorities are recommending to use oseltamivir or zanamivir for treatment and prevention of the disease based on the virus's susceptibility profile.

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<sup>2</sup> For benefits and harms of influenza-specific antivirals, see [http://www.who.int/csr/disease/avian\\_influenza/guidelines/pharmamanagement/en/index.html](http://www.who.int/csr/disease/avian_influenza/guidelines/pharmamanagement/en/index.html)