

## **Human Swine Influenza A (H1N1)**

### **BACKGROUND**

#### **Q1) What is swine flu?**

Swine Influenza (swine flu) is a respiratory disease of pigs caused by type A influenza viruses that causes regular outbreaks in pigs. People do not normally get swine flu, but human infections can and do happen.

#### **Q2) How common and serious is swine flu infection in general?**

Like seasonal flu, swine flu in humans can vary in severity from mild to severe. Between 2005 until Jan 2009, 12 human cases of swine flu were detected in the U.S. with no deaths occurring. However, swine flu infection can be serious. In September 1988, a previously healthy 32-year-old pregnant woman in Wisconsin was hospitalized for pneumonia after being infected with swine flu and died 8 days later. A swine flu outbreak in Fort Dix, New Jersey occurred in 1976 that caused more than 200 cases with serious illness in several people and one death.

#### **Q3) Is this particular swine flu virus contagious in HUMAN?**

CDC has determined that this Human Swine Influenza A (H1N1) virus is a **new reassortant** virus subtype containing a combination of gene segments that "previously has not been reported among swine or human influenza viruses." It is contagious and can spread from human to human.

#### **Q4) What is the current status of Human Swine Influenza A (H1N1) in Hong Kong?**

The human swine flu (H1N1) has now replaced seasonal influenza virus as the main circulating influenza virus in Hong Kong, representing over 80% of all circulating influenza viruses. Latest situation on Human Swine H1N1 and seasonal flu monitoring could be accessed via the CHP website:

[http://www.chp.gov.hk/content.asp?lang=en&info\\_id=5473](http://www.chp.gov.hk/content.asp?lang=en&info_id=5473)

#### **Q5) How severe is the current human swine influenza pandemic?**

According to latest update of WHO on October 9, 186 countries/territories/areas have officially reported. Over 378,223 cases of pandemic (H1N1) 2009 including at least 4,525 deaths with mortality rate of ~1%.

([http://www.who.int/csr/don/2009\\_10\\_09/en/index.html](http://www.who.int/csr/don/2009_10_09/en/index.html))

Swine flu is now circulating in Hong Kong, which has entered the mitigation phase of the epidemic. At this time, there is no requirement for hospital isolation of swine flu patients or quarantine of close contacts. Experts from the World Health Organization believe that this pandemic, at least in its early days, will be of moderate severity. However, the severity can vary, depending on many factors, from one country to another. On present evidence, the overwhelming majority of patients experience mild symptoms and make a rapid and full recovery. Thus far, there are 32 fatal cases in Hong Kong and the mortality rate was ~ 0.06% (lower than the worldwide mortality rate of 1%). However, the figure might change when the winter season arrives. The members of the public should stay alert and pay heightened attention to personal and community hygiene as well as the advices and guidelines issued by the Government with respect to provision of medical services, travelling, border health control, suspension of schools and public events.

## **DISEASE**

### **Q6) What are the signs and symptoms of swine flu in people?**

The symptoms of swine flu in people are similar to the symptoms of regular human flu 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 have been reported with swine flu infection in people. Like seasonal flu, swine flu may cause a worsening of underlying chronic medical conditions.

### **Q7) How long can an infected person spread swine flu to others?**

People with swine influenza virus infection should be considered potentially contagious as from 1 day prior to the onset of symptoms to up to 7 days following illness onset. Children, especially younger children, might potentially be contagious for longer periods.

### **Q8) 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 and livestock exhibits housing pigs at fairs. Human-to-human transmission of swine flu can also occur and the spread of this swine influenza A (H1N1) virus is thought to be happening in the same way that seasonal flu spreads; that is, mainly through coughing or sneezing and sometimes through touching something with flu viruses on it and then touching their mouth or nose.

**Q9) What surfaces are most likely to be sources of contamination?**

Germ s can be spread when a person touches something that is contaminated with germ s and then touches his or her eyes, nose, or mouth. Droplets from a cough or sneeze of an infected person move through the air. Germ s can be spread when a person touches respiratory droplets from another person on a surface like a desk and then touches their own eyes, mouth or nose before washing their hands.

**Q10) How long can viruses live outside the body?**

We know that some viruses and bacteria can live 2 hours or longer on surfaces like cafeteria tables, doorknobs, and desks. Frequent hand-washing will help you reduce the chance of getting contamination from these common surfaces.

**Q11) 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/70°C kills the swine flu virus as it does other bacteria and viruses.

**DIAGNOSIS**

**Q12) Who would be at risks of the influenza A H1N1 and its complications?**

Persons at risk of influenza related complications

- Pregnant ladies
- Children aged less than 6 years
- Adults aged 65 years or above
- Persons with chronic illnesses
- Persons with weakened immunity from diseases or drugs

**Q13) What are the danger signs to look for in people with flu symptoms that might signal a severe disease?**

Medical attention should be sought when any of the following danger signs appear in a person with confirmed or suspected H1N1 infection:

- shortness of breath, either during physical activity or while resting
- difficulty in breathing
- turning blue
- bloody or coloured sputum
- chest pain
- altered mental status
- high fever that persists beyond 3 days
- low blood pressure.

In children, danger signs include fast or difficult breathing, lack of alertness, difficulty in waking up, and little or no desire to play.

**Q14) How can human infections with swine influenza be confirmed?**

To diagnose swine influenza H1N1 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. Confirmation of the H1N1 virus is done at the designated health clinic and local health authority.

**Q15) How can I find out the address of the government designated flu clinic and will they perform the test for me?**

The location of the Hospital Authority designated flu clinic (DFC) can be located at the following website:

[http://gia.info.gov.hk/general/200906/13/P200906130175\\_0175\\_53426.pdf](http://gia.info.gov.hk/general/200906/13/P200906130175_0175_53426.pdf)

The designated flu clinics will offer testing to those patients who are clinically indicated, i.e., the following groups of patients:

- Pregnant women;
- Children at or under the age of 12 months
- Health care workers include staff from residential homes
- Patients live in residential homes without outbreak; and
- Patients with persistent fever (over 38 C) or worsening of influenza like symptoms 48 hours after treatment.

## TREATMENT

### Q16) Are there medicines to treat swine flu?

International and the local authorities are recommending using Oseltamivir (Tamiflu) or Zanamivir (Relenza) for treatment of the disease based on the virus's susceptibility profile. These antiviral drugs are prescription medicines (pills, suspensions or an inhaler) that fight against the flu by keeping flu viruses from reproducing in your body. If you get sick, antiviral drugs can make your illness milder and make you feel better faster. They may also prevent serious flu complications. For treatment, antiviral drugs work best if started soon after getting sick (within 2 days of symptoms).

### Q17) Can you tell me more about the antiviral medication?

TAMIFLU and RELENZA belong to a group of medicines called neuraminidase inhibitors. These medications attack the influenza virus and prevent it from spreading inside your body.

Oseltamivir (Tamiflu)	Relenza (Zanamivir)
Oral tablet	inhaled from a Diskhaler
Use for treatment of flu in people age > 1	Used for treatment of flu in people age > 7
Systemic effect (lung, kidney etc)	Main effect on lung
The most common side effects are nausea and vomiting which usually happen in the first 2 days of treatment. Others include abdominal pain, dizziness, insomnia and bronchitis. Children may be at an increased risk of self-injury and confusion shortly after taking and should be closely monitored for signs of unusual behavior  If you are pregnant, breast feeding or have a history of kidney diseases, you should seek opinion from your doctor before taking the drugs.	The most common side effects are diarrhea, nausea, sinusitis, runny or stuffy nose, bronchitis, cough, headache and dizziness. Some persons, mostly those who already had a chronic lung disease such as asthma, have reported breathing problems such as wheezing or shortness of breath after taking Relenza.  If you have asthma or history of chronic airway diseases, you should seek opinion from your doctor before taking the drugs.

**Q18) Has there been any resistance case develop against Tamiflu and Relenza?**

There have been some sporadic report of human swine influenza A H1N1 and H5N1 avian flu resistance case developed against Tamiflu. However, these do not predict generalized resistance among influenza viruses in the community. Thus far, there is no resistance cases reported against Relenza.

**Q19) Would there be enough antiviral to go around?**

The Government has been stockpiling antiviral drugs according to the recommendations of the Scientific Committee on Emerging and Zoonotic Diseases in antiviral stockpiling strategies. A target stockpile level of around 20 million doses is maintained. Many companies had stockpiled certain numbers of antiviral medication for their staff at their designated doctors. The government might announce the mobilization of these community stockpiles of antiviral when the supply of antiviral is at strain in the future.

## **PREVENTION**

**Q20) What can I do to protect myself from getting sick?**

There are everyday actions that can help prevent the spread of germs that cause respiratory illnesses like influenza. Take these everyday steps to protect your health

- Avoid close contact.

Avoid close contact with people who are sick. When you are sick, keep your distance from others to protect them from getting sick too.

- Stay home when you are sick.

If possible, stay home from work, school, and errands when you are sick. You will help prevent others from catching your illness.

- Cover your mouth and nose.

Cover your mouth and nose with a tissue when coughing or sneezing. It may prevent those around you from getting sick.

- Clean your hands.

Washing your hands often will help protect you from germs.

- Avoid touching your eyes, nose or mouth.

GermS are often spread when a person touches something that is contaminated with germS and then touches his or her eyes, nose, or mouth.

- Wear face mask as appropriate

If used correctly, surgical face masks and N95 face mask can help prevent some exposures, but they should be always used along with other preventive measures, such as avoiding close contact and maintaining good hand hygiene.

- Practice other good health habits.

Get plenty of sleep, be physically active, manage your stress, drink plenty of fluids, and eat nutritious food

### **Q21) What is the best technique for washing my hands to avoid getting the flu?**

Washing your hands often will help protect you from germS. Wash with soap and water or clean with alcohol-based hand cleaner. We recommend that when you wash your hands -- with soap and warm water -- that you wash for 20 seconds. When soap and water are not available, alcohol-based disposable hand wipes or gel sanitizers (containing 70% alcohol) may be used. You can find them in most supermarkets and drugstores. If using gel, rub your hands until the gel is dry. The gel doesn't need water to work; the alcohol in it kills the germS on your hands.

### **Q22) What is the recommendation for wearing facemask?**

When crowded settings or close contact with others cannot be avoided, the use of facemasks-or N95 masks in areas where transmission of swine influenza A (H1N1) virus has been confirmed should be considered as follows:

1. Whenever possible, rather than relying on the use of facemasks or respirators, close contact with people who might be ill and being in crowded settings should be avoided.
2. Surgical facemasks should be considered for use by individuals who enter crowded or hospital settings, both to protect their nose and mouth from other people's coughs and to reduce the wearers' likelihood of coughing on others; the time spent in crowded settings should be as short as possible.
3. N95 facemask should be considered for use by individuals for whom close contact with an infectious person is unavoidable such as the health workers at the hospital.

**Q23) How would one maintain the household and environmental hygiene?**

Maintain household and environmental hygiene by cleaning with diluted bleach (1 part of 5.25% household bleach in 99 parts of water), especially in areas where the patient stay, to prevent disease spread.

**Q24) What should I do if I get sick?**

If you become ill with influenza-like symptoms, including fever, body aches, runny nose, sore throat, nausea, or vomiting or diarrhea, you may want to contact their health care provider, particularly if you are worried about your symptoms. Your health care provider will determine whether influenza testing or treatment is needed. If you are sick, you should stay home and avoid contact with other people as much as possible to keep from spreading your illness to others.

**Q25) What should I note if I care for a sick person with swine flu?**

Patients with mild symptoms may rest at home and be taken care of by family members. The following suggestions will be helpful:

- Assign an adult to take care of the patient to prevent spread of disease to other household members.
- Persons at risk of influenza related complications should avoid taking care of sick persons
- Keep the patient in a separate room if possible.
- Remind/assist the patient to put on a face mask if possible.
- Minimize contact between the patient and the family.
- Remind/assist the patient to take medications according to doctors' prescriptions.
- Encourage the patient to get plenty of rest and fluid to speed recovery.
- No sharing of linens, eating utensils and personal items between the patient and the rest of the family, unless such items are washed thoroughly.
- Watch out for warning signs that may call for urgent medical attention.

**Q26) Is there a vaccine for swine flu?**

New Human Swine Influenza A (H1N1) vaccines have been developed by pharmaceutical companies. The human swine flu vaccine is stand-alone vaccines and is different from the seasonal influenza vaccine. The availability of this new vaccine

will be very limited as there is a global scramble for the vaccine amid the current influenza pandemic and priority will be given to orders from governments. The Hong Kong Government has proposed to order the new Human Swine Influenza A (H1N1) vaccine for 2.5 million people. Under the proposal, four groups of people will receive the vaccine for free – health workers from both the private and public sectors, children aged between six months and six years, the elderly aged 65 and over, and “high risk groups” including patients with chronic illnesses and pregnant women. The Government will have an extra stockpile of the new Human Swine Influenza A (H1N1) vaccine to be made available to another 500,000 healthy people at a fee.

**Q27) Why is the Government also encouraging people to receive human seasonal flu vaccination?**

This vaccine can help reduce the chance of complications and hospitalization resulting from human influenza. In turn, can reduce demand for anti-viral treatment which is currently in short supply. Influenza vaccine for human flu may also reduce the chance of “genetic re-assortment” and subsequent emergence of influenza strain with pandemic potential. Recommended strains used in the 2009–2010 human seasonal flu vaccine (northern hemisphere winter) are as follows:

- A/Brisbane/59/2007(H1N1)-like virus;
- A/Brisbane/10/2007 (H3N2)-like virus;
- B/Brisbane/60/2008-like virus.

Note that the A/Brisbane/59/2007 H1N1 virus differs from the human swine H1N1 virus. The human swine H1N1 virus is not part of the seasonal influenza vaccine and hence and seasonal influenza vaccine does not provide protection against the human swine flu H1N1 virus.

**Q28) I have heard that there has been recent mutation of the H3N2 human flu virus worldwide. Would the 2009-2010 human flu vaccine be still effective?**

Although there has been report of mutation of H3N2, the 2009-2010 vaccine should still offer 40-80% efficacy of the flu vaccine against the mutated H3N2 virus. The government and clinicians would recommend people to have the human flu vaccination.

## **ADVICE FOR CORPORATES**

Based on current available information and advice from risk management consultants, corporations are advised to develop contingency plans in the event of an avian flu infection to minimize disruption of core business functions. Flu vaccination is recommended for all staffs and stockpiling antiviral may be considered for key personnel and staff as is appropriate for your company's contingency plan. For those enterprises which consider stockpiling antiviral in their business continuity, plans are recommended to do so through their doctors, who can administer these antiviral to staff infected during pandemic influenza. Enterprises and doctors need to work out the amount of antiviral to be stockpiled taking into account enterprise policies, staff required for core operations or at risk of infection, and other factors. The purpose is to provide reliable supplies of antiviral to their infected staff, so that treatment can start in time.

### **Q29) Which antiviral to stockpile for avian flu?**

Please note that the stockpile is for the control of pandemic influenza, and is not for seasonal influenza use. The effectiveness of any drug during a pandemic is difficult to predict, as it is not possible to know which virus will cause the next pandemic. While there have been cases of resistance against Tamiflu; Relenza mainly targets at the pulmonary (lung) cases and has less systemic therapeutic effect compared to Tamiflu. Many countries are now stockpiling both Tamiflu and Relenza in preparation for the diversity of different scenario.

### **Q30) When will the community and hospital doctors give out Tamiflu?**

There are guidelines from the centre of health protection to doctors on the management of influenza A H1N1 infection. Not all patients with confirmed human swine flu would require antiviral. Whether a doctor prescribes antiviral drugs to a patient will depend on the circumstances and health needs of the patient, taking into consideration the presence of any contraindication and balancing the benefits of taking the anti-viral drugs against the possible adverse side effects. Indiscriminate use of antiviral drugs may give rise to drug resistance. The WHO has made a statement that self-medication in the absence of appropriate clinical or public health advice is discouraged. The guideline from the Centre of Health Protection specifies that antiviral should be given in the community for treatment purpose only.

## **FURTHER INFORMATION**

For further information, you may refer to the following:

1. Hong Kong Department of Health website: <http://www.info.gov.hk/dh>
2. World Health Organization (WHO) website: <http://www.who.int/en/>
3. Centres for Disease Control and Prevention (CDC): <http://www.cdc.gov/>
4. Centre of Health Protection (CHP): <http://www.chp.gov.hk/>