

MH 34:03

25 April 2009

All Registered Medical Practitioners

**MOH CIRCULAR 17/2009**  
**ALERT: SWINE INFLUENZA A (H1N1)**

In Mexico, as of 23 April 2009, 854 cases of severe atypical pneumonia have been reported, including 59 deaths. Several cases have been confirmed as swine Influenza A (H1N1). Those affected included healthcare workers and their family members with close contact. Most of the cases have occurred in central Mexico (especially Mexico City) but there have been cases in states along the U.S.-Mexico border. Schools and public institutions such as museums, libraries and theatres have been closed in Mexico City.

2 In the US, there have been a total of 8 laboratory confirmed cases of swine influenza (6 in Southern California and 2 in Texas). 6 cases had self-limited illness and 1 was hospitalized. No deaths have been reported. No recent exposure to pigs has been identified for any of the patients. In one case, there was a history of recent travel to Mexico.

3 Preliminary genetic analysis of the influenza viruses have identified them as swine Influenza A (H1N1 viruses), containing genetic segments from swine influenza viruses from North America, Europe and Asia, avian influenza viruses from North America, and human influenza viruses. This particular genetic combination of swine influenza has not been recognized previously. The US CDC laboratory has identified the same strain of swine Influenza A (H1N1) in specimens from patients with respiratory disease in Mexico as that identified in the US cases.

4 These reports raise concerns about human-to-human spread of a novel influenza virus.

**Clinical Symptoms**

5 The symptoms of swine influenza in humans are similar to human seasonal influenza. These include fever, sore throat, cough and rhinorrhoea. Some patients may also complain of nausea, vomiting, diarrhoea, myalgia, and headache. The disease may be complicated by pneumonia. Most of the cases have been in younger adults but older adults have not been spared.

## Laboratory Investigation

6 The diagnosis of swine influenza may be confirmed by laboratory identification and sub-typing of the virus in naso-pharyngeal swabs obtained from suspected cases.

## Treatment and Vaccination

7 It is likely that the current seasonal influenza vaccine will not provide protection from this new subtype of influenza A. The viruses in the US patients have demonstrated antiviral resistance to amantadine and rimantadine. However, they are susceptible to oseltamivir (Tamiflu®) and zanamivir (Relenza®).

## REQUIRED ACTION

**8 Clinicians should observe strict infection control precautions when handling patients:**

- a) Presenting with influenza-like symptoms (fever, cough, sore throat, rhinorrhoea); AND
- b) Have a history of travel to affected areas (i.e. Mexico, and the states of California and Texas in the United States) in the 7 days prior to the onset of symptoms; OR have been in contact with ill persons who had a history of travel to these areas in the 7 days prior to the onset of symptoms.

9 Any patient who meets the case definition in Paragraph 8 should be referred immediately to the Emergency Medicine Department at Tan Tock Seng Hospital. Medical practitioners should arrange for these patients to be transferred by ambulance by calling the dedicated ambulance service at 65860237 (available 24 hours).

10 The Ministry of Health should also be **notified immediately** of suspected cases. Please contact the Communicable Diseases Division at 98171463 (available 24 hours). MOH will inform the notifying doctor of the need for contact tracing and prophylaxis for close contacts of the case once the diagnosis has been established.

## ADVICE TO PATIENTS

11 Physicians should advise family members and other close contacts of suspected cases to be vigilant for early symptoms of influenza, and to seek medical advice as early as possible if unwell.

## **FURTHER INFORMATION**

12 An FAQ sheet for patients is attached at Annex 1.

13 For updates on this evolving situation, please refer to the MOH website [www.moh.gov.sg](http://www.moh.gov.sg)

14 For further clarifications of this circular, please email [moh\\_info@moh.gov.sg](mailto:moh_info@moh.gov.sg).

A handwritten signature in black ink, appearing to be 'K Satku', with a horizontal line extending to the right.

PROF K SATKU  
DIRECTOR OF MEDICAL SERVICES

**1. What is Swine Flu (Swine Influenza)?**

Swine flu is a respiratory disease affecting pigs that is caused by type A influenza virus. Swine influenza viruses may circulate among swine throughout the year, but most outbreaks occur during the late fall and winter months similar to influenza outbreaks in humans. It causes high levels of illness but low death rates in pigs.

**2. Does Swine Flu affect humans?**

Swine flu viruses that cause disease in pigs very rarely affect humans. However, sporadic human infections with swine flu have occurred. Most commonly, these cases occur in persons with direct exposure to pigs but there have also been documented cases of human-to-human spread of swine flu.

**3. How does Swine Flu spread to humans?**

Swine flu spreads to humans mainly through contact with infected pigs, which shed the virus in their saliva, nasal secretions and faeces. Limited human-to-human transmission can also occur in the same way as seasonal flu occurs in people.

**4. Can people catch Swine Flu from eating pork?**

There is currently no evidence to suggest that swine flu can be transmitted to humans from eating pork or pork products that have been thoroughly cooked.

**5. What are the symptoms of Swine Flu in humans?**

The symptoms of swine flu in people are expected to be similar to the symptoms of regular human seasonal influenza. An early symptom is high fever, and this is followed by cough, sore throat, runny nose, and sometimes breathlessness a few days later.

**6. How can human infections with swine flu be diagnosed?**

To diagnose swine flu, 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 the virus). However, some persons, especially children may shed the virus for 10 days or longer.

**7. What medications are available to treat swine flu infection in humans?**

There are four different antiviral drugs that are licensed for use in Singapore for the treatment of influenza: amantadine, rimantadine, oseltamivir and zanamivir. While most swine flu viruses have been susceptible to all four drugs, the most recent swine flu viruses isolated from humans are resistant to amantadine and rimantadine. At this time, the US CDC recommends the use of oseltamivir (Tamiflu®) or zanamivir (Relenza®) for the treatment and/or prevention of infection with swine flu viruses.

**8. Are there any cases of Swine Flu in Singapore?**

To date, there have been no human cases of swine flu detected in Singapore.

**9. Is there any cause for alarm in Singapore?**

No human swine flu cases have been reported in Singapore. MOH is monitoring the situation closely and will update the public should the situation change.

**10. What is MOH doing to ensure that the disease is not transmitted here?**

MOH maintains a comprehensive and well established disease surveillance system for the early detection of human cases of novel influenzas such as swine flu. In addition, MOH has sent a medical alert to all medical practitioners and staff in hospitals, national centres, private medical clinics and polyclinics to update them on the outbreak of swine flu in the USA and Mexico and to advise them to be vigilant for any suspect cases. When the situation warrants, MOH will step up public health measures e.g. quarantine of contacts, issue public health advisories, and work with other government agencies to screen visitors at our border checkpoints. Further, MOH has an influenza pandemic preparedness plan in response to a pandemic situation.

**11. Is it safe to visit countries with cases of Swine Flu and will I be quarantined when I return? What travel precautions should I take?**

There are currently no travel restrictions or quarantine advised by the World Health Organisation for swine flu. If you intend to travel to areas which have cases of swine flu (currently – Southern California and Texas in the United States; and Mexico), you should take note of the following measures to minimize your risk of acquiring swine flu:

- Avoid contact with persons with symptoms of influenza
- Avoid crowded areas and maintain good ventilation.
- Observe good personal and environmental hygiene. Wash hands thoroughly with soap and water frequently and when they are contaminated by respiratory secretions e.g. after sneezing.
- Maintain good body resistance through a balanced diet, regular exercise, having adequate rest, reducing stress and not smoking.

**12. What should I do if I suspect I have swine flu after returning to Singapore?**

You should consult your doctor as soon as possible and inform your doctor if you have symptoms of swine flu and had recently travelled to areas which have cases of swine flu (currently – Southern California and Texas in the United States; and Mexico).

**13. What should I do if I fall ill overseas?**

You should consult a local doctor as soon as possible and refrain from traveling until you are certified fit by the doctor.

**14. Does influenza vaccination help in preventing 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 is unlikely to protect against H1N1 swine flu viruses.

**15. Is it safe to come into contact with live pigs in nature reserves and the wildlife reserves?**

So far, there are no known cases of swine flu in Singapore. However, proper hygiene practices, such as washing of hands after contact with animals including pigs, should be maintained.