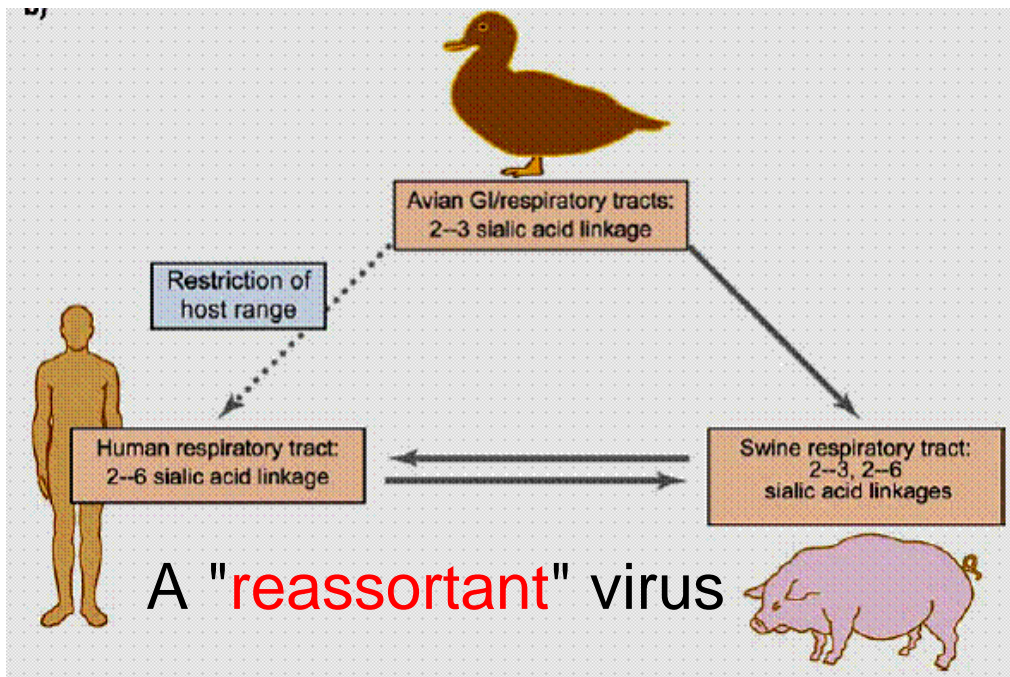


# Swine influenza

## Interim Guidance of WHO & US CDC



第七分局  
防疫醫師  
雷永兆  
98-04-27



## What is swine influenza?

- Most influenza **type A H1N1 virus**, other subtypes (H1N2, H3N2, and H3N1) also circulating in pigs
  - first isolated from a pig in 1930
  - killed by cooking temperatures of 160° F/70° C
- A highly contagious acute respiratory disease of pigs
  - asymptomatic carrier pigs exist
  - morbidity tends to be high and mortality low (1-4%)
- Human-to-human transmission has occurred
- Current seasonal influenza vaccine does **NOT contain** swine influenza virus
  - **Not known** whether current human seasonal influenza vaccines can provide any protection

流感疫苗保護效果仍未知



## Signs and symptoms

- Similar to the symptoms of regular human seasonal influenza
  - fever, lethargy, lack of appetite and cough
  - runny nose, sore throat,
  - **nausea, vomiting and diarrhea (some)**
- Severe illness
  - pneumonia
  - respiratory failure and deaths
- May cause a worsening of underlying chronic medical conditions



# Residents of States with Swine Influenza Cases

## 給民眾的衛教

- Cover your nose and mouth with a tissue when you cough or sneeze. Throw the tissue in the trash after you use it. (咳嗽與呼吸道禮節)
- Wash your hands often with soap and water, especially after you cough or sneeze. Alcohol-based hands cleaners are also effective. (洗手)
- Try to avoid close contact with sick people. (避免接觸病人)
- If you get sick, CDC recommends that you stay home from work or school and limit contact with others to keep from infecting them. (生病盡量留在家中)
- Avoid touching your eyes, nose or mouth. Germs spread that way. (避免散播)

# Medications to Help Lessen Symptoms of the Flu

## When to Seek Emergency Medical Care

- Teenagers with the flu can take medicines **without** aspirin, such as acetaminophen (Tylenol®) and ibuprofen (Advil®, Motrin®, Nuprin®), to relieve symptoms.
- Children younger than 2 years of age should not be given over-the-counter cold medications without first speaking with a healthcare provider.
- The safest care for flu symptoms in children younger than 2 years of age is using a cool-mist humidifier and a suction bulb to help clear away mucus.
- Fevers and aches can be treated with acetaminophen (Tylenol®) or ibuprofen (Advil®, Motrin®, Nuprin®) or nonsteroidal anti-inflammatory drugs (NSAIDs). Examples of these kinds of medications include:

Generic Name	Brand Name(s)
Acetaminophen	Tylenol®
Ibuprofen	Advil®, Motrin®, Nuprin®
Naproxen	Aleve

- Over-the-counter cold and flu medications used according to the package instructions may help lessen some symptoms such as cough and congestion. Importantly, these medications will not lessen how infectious a person is.
- Check the ingredients on the package label to see if the medication already contains acetaminophen or ibuprofen before taking additional doses of these medications—don't double dose! Patients with kidney disease or stomach problems should check with their health care provider before taking any NSAIDs.

Check with your health care provider or pharmacist if you are taking other over-the-counter or prescription medications not related to the flu. For more information on products for treating flu symptoms, see the FDA website: [http://www.fda.gov/fdac/features/2005/105\\_buy.html](http://www.fda.gov/fdac/features/2005/105_buy.html).

### When to Seek Emergency Medical Care

Get medical care right away if the sick person at home:

- has difficulty breathing or chest pain
- has purple or blue discoloration of the lips
- is vomiting and unable to keep liquids down
- has signs of dehydration such as dizziness when standing, absence of urination, or in infants, a lack of tears when they cry
- has seizures (for example, uncontrolled convulsions)
- is less responsive than normal or becomes confused

1. **Stay home** for 7 days after the start of illness and fever is gone
2. Monitor yourself and household members for flu symptoms and contact a **telephone hotline** or health care provider if symptoms occur

強調盡量待在家中

CDC: Interim Guidance for Swine influenza A (H1N1): Taking Care of a Sick Person in Your Home (April 25, 2009)



## Steps to Lessen the Spread of Flu in the Home

- **Placement of the sick person (如何在家安置病人)**
  - Keep the sick person in a room separate from the common areas of the house
  - **Keep the sickroom door closed**
  - Have the sick person wear **a surgical mask** if they need to be in a common area of the house near other persons
- **Protect other persons in the home (保護家中其他人)**
  - Avoid having pregnant women care for the sick person.
- **If you are the caregiver – self-monitor (自我監測與防護)**
- **Using Facemasks or Respirators (用口罩和N95的時機)**
  - wear a facemask (for example, surgical mask) or N95 disposable respirator
  - **N95** if respiratory treatments using a nebulizer or inhaler 6



## Clinicians 臨床醫師應有的警覺與採檢

Consider the possibility of swine influenza virus infections

- **Symptomatic individual** (acute respiratory symptoms with or without fever) (急性呼吸症狀和以下三項中任一)
  - **Live in** area where human cases of swine influenza A (H1N1) has been identified or (居住地)
  - Have **traveled** to an area where human cases of swine influenza A (H1N1) has been identified or (旅遊史)
  - Have been in **contact** with ill persons from these areas in the **7 days prior to their illness onset** (接觸史)
- Obtain a respiratory swab for swine influenza testing and place it in a refrigerator (not a freezer)
  - **timely diagnosis** at a state public health laboratory



## Definitions of Respiratory Illness (April 24-26, 2009 )

- **Acute respiratory illness (急性呼吸道症狀):**  
Recent onset of at least two of the following:
  - ◆ rhinorrhea or nasal congestion
  - ◆ sore throat
  - ◆ cough
  - ◆ fever or feverishness (發燒非必要條件)
- **Influenza-like illness:**  
fever  $>37.8^{\circ}\text{C}$  ( $100^{\circ}\text{F}$ ) plus cough or sore throat





## **CDC: Case definitions 病例定義** (April 26, 2009 ) used For Investigations of Swine Influenza A (H1N1) Cases

### ■ **Confirmed case 確定病例**

a person with an acute respiratory illness with laboratory confirmed swine influenza A (H1N1) virus infection at CDC by one or more of the following tests:

- **real-time RT-PCR**
- **viral culture**
- **four-fold rise in swine influenza A (H1N1) virus specific neutralizing antibodies**

### ■ **Probable case 極可能病例**

a person with an acute respiratory illness with an influenza test that is **positive for influenza A**, but H1 and H3 negative.



## ■ Suspected case 疑似病例

1. A person with acute respiratory illness who was a **close contact to a confirmed case** of swine influenza A (H1N1) virus infection during the case's infectious period, **OR**
2. A person with an acute respiratory illness with a **recent history of contact with an animal** with confirmed or suspected swine influenza A (H1N1) virus infection **OR**
3. A person with an acute respiratory illness who **traveled to or resides** in an area where there are confirmed cases of swine influenza A (H1N1) virus infection



## ■ **Infectious period (可傳染期):**

**1 day prior to the case's illness onset to 7 days after onset (發病前一日至發病後七日)**

Infectious period for confirmed cases = 1 day before onset to 7 days after onset of illness

Day before onset = Day -1

Onset day = Day 0

Days after onset = Days 1-7

## ■ **Close contact :**

**within about 6 feet (2 meter) of an ill person who is a confirmed or suspected case of swine influenza A (H1N1) virus infection during the case's infectious period**

**WHO:** having cared for, lived with, or had direct contact with respiratory secretions or body fluids of a probable or confirmed case of swine influenza A (H1N1).

WHO未訂距離



## CDC: Case definitions 病例定義

Antiviral Recommendations for patients with confirmed or suspected Swine Influenza A (H1N1) Virus Infection and Close Contacts (April 25, 2009 )

### ■ Confirmed case

A person with an acute respiratory illness with laboratory confirmed at CDC by one or more of the following tests:

- real-time RT-PCR
- viral culture

刪除血清學四倍上升之定義

### ■ Suspected case

- 1) A person with acute respiratory illness who was **a close contact** to a confirmed case of swine influenza A (H1N1) virus infection during the case's infectious period, OR
- 2) A person with an acute respiratory illness who **traveled to or resides** in an area where there are confirmed cases of swine influenza A (H1N1) virus infection.

刪除動物接觸史之定義

- **Acute respiratory illness** : recent onset of at least two of the following: rhinorrhea or nasal congestion, sore throat, cough (with or without fever or feverishness)

不論有無發燒，症狀要有兩項



# Interim WHO guidance for the surveillance of human infection with swine influenza A(H1N1) virus (April 26, 2009 )

## ■ Clinical case description:

**Acute febrile respiratory illness** (fever  $>38^{\circ}\text{C}$  ) with the spectrum of disease from influenza-like illness to pneumonia.

## ■ Confirmed case:

an individual with laboratory confirmed swine influenza A(H1N1) virus infection by one or more of the following tests:

- ✓ • real-time RT-PCR
- ✓ • viral culture
- ✓ • four-fold rise in swine influenza A(H1N1) virus specific neutralizing antibodies.

無臨床症狀者亦須通報

## ■ Probable case:

an individual with an influenza test that is **positive for influenza A**, but is **unsubtypable** by reagents used to detect seasonal influenza virus infection OR

*A individual with a clinically compatible illness or who died of an unexplained acute respiratory illness who is considered to be epidemiologically linked to a probable or confirmed case.*



	WHO	US CDC
Confirmed	laboratory confirmed  包含無症狀者	ARI with laboratory confirmed  <b>Acute respiratory illness</b>
Probable	Unsubtypable influenza A, Or clinically compatible illness or who died of an unexplained ARI who is considered to be epidemiologically linked to a probable or confirmed case	ARI with Unsubtypable influenza A
Suspect		1. close contact to a confirmed case 2. recent history of contact with an animal with confirmed or suspected swine influenza A (H1N1) virus infection 3. has traveled to an area where there are confirmed cases of swine influenza A (H1N1) within 7 days of suspect case's illness onset



## Infection Control of Ill Persons in a Healthcare Setting (April 24, 2009)

- **Suspected or confirmed case-status should be placed in a single-patient room (單人房，最好是負壓病房)**
  - If available, an airborne infection isolation room (AIIR) with negative pressure can be used
  - for suctioning, bronchoscopy, or intubation, use a procedure room with negative pressure air handling
- **ill person should wear a surgical mask when outside of the patient room (在病房外，病人需戴外科口罩)**
  - wash hands frequently
  - follow respiratory hygiene practices
- **Routine cleaning and disinfection strategies used during influenza seasons (清潔與消毒照常)**

CDC: Interim Guidance for Infection Control for Care of Patients with Confirmed or Suspected Swine Influenza A (H1N1) Virus Infection in a Healthcare Setting (April 24, 2009 )



# Infection Control of Ill Persons in a Healthcare Setting - patient care activities

## 照顧病人時的一般措施

- All patient care activities should be used
  - **Standard, Droplet and Contact precautions**
  - **Hand hygiene** by washing with soap and water or using hand sanitizer (標準、飛沫、接觸防護措施及洗手)
- Prevent conjunctival exposure
  - wear **disposable non-sterile gloves, gowns, and eye protection** (e.g., goggles)
- Maintained for **7 days** after illness onset or until symptoms have resolved
  - Children, especially younger children, might potentially be contagious for longer periods





## Masks and respirators – N95 的使用時機

- Personnel engaged in **aerosol generating activities** (e.g., collection of clinical specimens, endotracheal intubation, nebulizer treatment, bronchoscopy, and resuscitation involving emergency intubation or cardiac pulmonary resuscitation) for **suspected or confirmed swine influenza A (H1N1) cases** should wear a fit-tested disposable **N95** respirator.\*
- Pending clarification of transmission patterns for this virus, personnel providing **direct patient care** for suspected or confirmed swine influenza A (H1N1) cases should wear a fit-tested disposable **N95** respirator when entering the patient room.



## Facemask and Respirator Use

in Certain Community Settings Where Swine Influenza A (H1N1) Virus Transmission Has Been Detected (April 26, 2009 )

- 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. (應盡量避免到人潮擁擠處)
- **Facemasks** should be considered for use by individuals who enter crowded 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. (外出至人多處，應戴外科口罩)
- **Respirators\*** should be considered for use by individuals for whom close contact with an infectious person is unavoidable. This can include selected individuals who must care for a sick person (e.g., family member with a respiratory infection) at home (密切接觸時須帶\* N95等級以上)



## Treatment and chemoprophylaxis of swine influenza virus infection (April 26, 2009 )

- WHO - Information is insufficient to make recommendation on the use of the antivirals in prevention and treatment
- United States:  
sensitive to oseltamivir and zanamivir but resistant to amantadine and remantadine.
- CDC - recommends the use of **oseltamivir** or **zanamivir** for the treatment and/or prevention of infection with swine influenza viruses.

[http://www.who.int/csr/swine\\_flu/swine\\_flu\\_faq\\_26april.pdf](http://www.who.int/csr/swine_flu/swine_flu_faq_26april.pdf)  
[http://www.cdc.gov/swineflu/key\\_facts.htm](http://www.cdc.gov/swineflu/key_facts.htm)

## Antiviral Treatment 使用抗病毒藥物治療

### ■ Suspected cases 疑似病例

- **Empiric antiviral treatment** is recommended for any ill person suspected cases

- zanamivir (Relenza®) alone

台灣無rimantadine

- oseltamivir (Tamiflu®) and amantadine or rimantadine

- should be initiated as soon as possible after the onset of symptoms

### ■ Confirmed cases 確定病例

- either oseltamivir or zanamivir for 5 days

### ■ Recommended duration of treatment : 5 days

### ■ Pregnancy **Category C**

CDC: Interim Guidance on Antiviral Recommendations for Patients with Confirmed or Suspected Swine Influenza A (H1N1) Virus Infection and Close Contacts

TABLE

Interim recommendations for the selection of antiviral treatment using laboratory test results and viral surveillance data, United States, 2008-09 season†

Rapid antigen or other laboratory test	Predominant virus(es) in community	Preferred medication(s)	Alternative (combination antiviral treatment)
Not done or negative, but clinical suspicion for influenza	H1N1 or unknown	Zanamivir	Oseltamivir + Rimantadine*
Not done or negative, but clinical suspicion for influenza	H3N2 or B	Oseltamivir or Zanamivir	None
Positive A	H1N1 or unknown	Zanamivir	Oseltamivir + Rimantadine*
Positive A	H3N2 or B	Oseltamivir or Zanamivir	None
Positive B	Any	Oseltamivir or Zanamivir	None
Positive A+B**	H1N1 or unknown	Zanamivir	Oseltamivir + Rimantadine*
Positive A+B**	H3N2 or B	Oseltamivir or Zanamivir	None

## 美國CDC抗病毒藥物用藥建議(seasonal flu)

Need to consider potential infection with **swine** influenza A (H1N1) virus as well as **human** influenza viruses, and their different antiviral susceptibilities.



## Antiviral Chemoprophylaxis 藥物預防

- (pre-exposure or post-exposure) with either oseltamivir or zanamivir is **recommended** for the following individuals
  1. **Persons with certain chronic medical conditions, elderly**
    - Household close contacts who are at high-risk for complications of influenza of a confirmed or suspected case.
    - Travelers to Mexico who are at high-risk for complications of influenza
    - Border workers (Mexico) who are at high-risk for complications of influenza
  2. - School children who are at high-risk for complications of influenza (persons with certain chronic medical conditions) who had close contact (face-to-face) with a confirmed or suspected case
  3. **Health care workers or public health workers** who had **unprotected close contact** with an ill confirmed case of swine influenza A (H1N1) virus infection during the case's infectious period.



## Antiviral Chemoprophylaxis 藥物預防

### ■ **Considered** for the following:

1. **Any health care worker who is at high-risk for complications of influenza** (persons with certain chronic medical conditions, elderly) who is working in an area with confirmed swine influenza A (H1N1) cases, and who is caring for patients with any acute febrile respiratory illness.
2. **Non-high risk persons** who are travelers to Mexico, first responders, or border workers who are working in areas with confirmed cases of swine influenza A (H1N1) virus infection.

**Recommended duration is 5-7 days after the last known exposure**

GovHK 香港政府一站通 繁體純文字 简体版 ENGLISH

- 主頁
- 關於我們
- 科學顧問架構
- 風險傳達顧問小組
- 健康資訊
- 健康統計數字
- 指引及給院舍的信
- 報告及刊物
- 感染控制須知
- 傳媒天地
- 培訓及活動
- 網上資源
- 其他語言
- 相關連結

- 市民
- 醫護專業
- 院舍及學校
- 業界及工作場所

[主頁 > 專題報導](#)

2009年4月26日  
**人類豬型流感**

政府「**流感大流行應變計劃**」下的嚴重應變級別現正 動  
 注意個人 生 預防人類豬型流感

- [人類豬型流感的健康資訊](#)
- [人類感染豬型流感的受影響地區/國家](#)

[新聞稿](#)

[給醫生的信](#)

[相關連結](#)



[主頁 > 專題報導](#)

2009年4月26日  
**給醫生的信**

日期	主題
2009年4月26日	<a href="#">嚴重應變級別現正啟動及有關人類感染豬型流感呈報方法之更改</a>
2009年4月25日	<a href="#">有關懷疑感染甲型豬型流感H1N1個案的呈報方法</a>
2009年4月24日	<a href="#">有關在美國發生的甲型豬型流感 (H1N1)</a>



Affected areas/countries with confirmed human swine influenza

人類感染豬型流感的受影響地區/國家

(as of noon 26 April 2009)  
 (截至 2009 年 4 月 26 日中午)

Date of report <sup>#</sup> 案報告日期	Area/Country 地區/國家	State 州/省份
24/4/2009	Mexico 墨西哥	-
24/4/2009	USA 美國	California 加利福尼亞州
24/4/2009	USA 美國	Texas 德克薩斯州
25/4/2009*	USA 美國	Kansas 堪薩斯州

Source 資料來源:

<sup>#</sup> World Health Organization 世界衛生組織, [http://www.who.int/csr/don/2009\\_04\\_24/en/index.html](http://www.who.int/csr/don/2009_04_24/en/index.html)

\* Kansas Department of Health and Environment 堪薩斯州衛生部門, <http://www.kdheks.gov>





## Acknowledgement

- 戰情中心 劉宇倫醫師
- 第七分局 黃頌恩醫師  
陳婉青醫師