

# **AVIAN FLU**

## **BACKGROUND**

### **1. What is Avian Influenza? Is there only one type of avian flu?**

Avian influenza, or "bird flu", is a contagious disease of animals caused by Type A flu viruses that normally infect only birds and, less commonly, pigs. While all bird species are thought to be susceptible to infection, domestic poultry flocks are especially vulnerable to infections that can rapidly cause epidemics in poultry. It often causes little or no disease in wild waterfowl but sometimes causes large outbreaks associated with high mortality in poultry approaching 100%.

The classification of the subtypes of Influzena A viruses based on the haemagglutinin (H) protein and the neuraminidase (N) protein on the surface of the virus.

Neuraminidase (N) Haemagglutinin (H)

Bird 1-9 1-15 or more

Human 1-2 1-3

All subtypes of Influenza A viruses can be found in birds which provide a huge pool of genetic diversity of avian flu, rendering at least 135 types of avian flu viruses. In contrast, there are only three known subtypes of human influenza viruses that are currently circulating (H1N1, H1N2 and H3N2).

## **ABOUT THE CAUSE**

### **2. Is this a form of SARS?**

No. SARS is caused by a Coronavirus, not an influenza virus.

### **3. What are the symptoms of bird flu in birds?**

The symptoms are loss of appetite, ruffled feathers, fever, malaise, diarrhea, irritability and death.

### **4. What are the symptoms of bird flu in humans?**

Fever, cough, sore throat, muscle aches and severe breathing difficulty. Basically the symptoms of bird flu in humans ranges from that of human flu ( fever, headache, muscle pain, running nose, cough and sore throat) to eye infections, pneumonia, acute respiratory distress, diarrhea, encephalitis, multi-organ failure and other severe complications. The incubation period is on average 3-5 days but can be up to 7 days.

## **ABOUT THE DISEASE**

### **5. How is avian influenza spread among poultry?**

Certain wild birds act as hosts of influenza viruses. Infected birds shed virus in saliva, nasal secretions and faeces. Avian influenza viruses spread to susceptible birds (domestic poultry) when they have contact with contaminated nasal, respiratory and faecal material from infected birds. Faecal-to-oral transmission is the most common mode of spread among birds (for example, contaminated food and water supplies).

### **6. Are all of the currently reported outbreaks in birds equally dangerous for humans?**

No. H5N1 is the most lethal strain whereas other strains such as H5N1, H9N2, H7N7, H7N3, H5N2, H7N2 and H7N1 would cause less severe illness in humans.

### **7. What is the global statistic of avian flu affecting human?**

<http://www.info.gov.hk/info/flu/eng/global.htm>

### **8. Is it possible to get the bird flu from eating chicken or eggs?**

It is safe to eat poultry and eggs. However, one should not consume undercooked poultry, raw eggs or lightly cooked egg products (such as runny eggs). It is also recommended to avoid unnecessary contact with live poultry. This includes markets where live birds are sold, as it is possible for the avian influenza virus to stick to hair and clothing, and it may also be inhaled.

### **9. How are humans infected?**

To date, most human cases linked to contact with poultry are thought to have acquired their infection following exposure to dead or diseased birds around households.

Evidence suggests that particularly risky exposure occurs during the slaughter, defeathering, and preparation of poultry for cooking

### **10. Is it possible for this form of influenza to spread from person to person?**

If a person, who is sick with human influenza, was exposed to avian influenza, there is a possibility that the avian influenza virus could acquire human influenza genes.

This "mixing" could result in the creation of a new subtype of the influenza virus.

Because these viruses do not commonly infect humans, there is little or no immune protection against them in the human population. If an avian virus were able to infect people and gain the ability to spread easily from person to person, an "avian influenza pandemic" could begin.

**11. Has human-to-human transmission of avian flu definitely occurred?**

There is no conclusive evidence of efficient human-to-human spread of avian flu.

**DIAGNOSIS AND TREATMENT**

**12. How are the human cases diagnosed?**

Laboratory diagnosis depends upon the demonstration of the virus or its components or a rising antibody titer. However, as these tests are rather specialized and may have to be done in a government clinic or hospital.

**13. What is the treatment for bird flu?**

Health authorities are recommending to use Oseltamivir (Tamiflu) or Zanamivir (Relenza) for treatment of the disease based on the virus's susceptibility profile. These antiviral drugs are prescription medicines (pills, liquid 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).

**14. Can you tell me more about Tamiflu and Relenza?**

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. Tamiflu can be taken orally as a course for treatment and prevention of influenza infection. Relenza is a powder that is inhaled from a breath-activated plastic device called a Diskhaler for treatment and prevention of influenza.

**15. 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.

**INFLUENZA PANDEMIC**

**16. Why is there concern about the outbreaks of avian influenza?**

Public health officials are alarmed by the unprecedented outbreaks in poultry for

several reasons.

(1) Major outbreaks recently reported in Asia have been caused by the highly pathogenic H5N1 strain.

(2) The possibility that the present situation could give rise to another influenza global epidemic (a pandemic) in humans. Scientists know that avian and human influenza viruses can exchange genes when a person is simultaneously infected with viruses from both species.

(3) Existing flu vaccines would not be effective against a new influenza virus.

This was the situation during the great influenza pandemic of 1918–1919, when a completely new influenza virus subtype emerged and spread around the globe, in around 4 to 6 months. Several waves of infection occurred over 2 years, killing an estimated 40–50 million persons.

### **17. How likely is a new pandemic of avian influenza?**

Pandemics arise when a new virus emerges which is capable of spreading in the world wide population. The majority of cases described have had contact with poultry from which the infection is assumed to have spread.

## **TRAVEL ADVICE**

### **18. Any travel advice for countries affected by bird flu?**

The WHO does not recommend any restrictions on the travel to any country currently experiencing outbreaks of H5N1 avian infection in poultry flocks, including countries that have also reported cases in humans. At this time, WHO recommends travelers visiting the outbreak areas should avoid contact with the live poultry and animal farm. In view of the potential threat posed by the continuing spread of H5N1 avian influenza viruses, WHO recommends countries with sufficient resources to invest in a stockpile of antiviral drugs to prepare for an avian influenza pandemic.

## **ADVICE ON PREVENTION**

### **19. How can I prevent getting infected with bird flu?**

1) If you prepare chicken, do not buy live chickens, and only buy chickens where their intestines are removed. Freezing does not kill the virus; so even if you are preparing frozen chicken, ensure that the chicken is cooked properly. Heat kills viruses and the World Health Organization says that chicken products should be

cooked thoroughly at temperatures of at least 70 degrees Celsius. People should wash their hands after handling poultry and ensure that poultry dead bodies do not contaminate other objects.

**20. What are the general measurements to prevent spread the flu virus from person to person?**

- Keep hands clean and wash hands properly.
- Alcohol-based hand rub is also effective when hands are not visibly soiled.
- Avoid touching mouth, nose or eyes.
- Wash hands with liquid soap promptly if they are dirtied by respiratory secretions, e.g. after sneezing or coughing.
- Cover nose and mouth when sneezing or coughing.
- Do not spit. Always wrap nasal and mouth discharges with tissue paper, and dispose of the tissue paper properly in a lidded rubbish bin.
- Wear a mask when respiratory symptoms or fever develop. See a doctor right away.
- Do not go to work or school if you develop influenza-like symptoms
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**ABOUT VACCINATION**

**21. Is there a vaccine against bird flu?**

Q&A on Avian Influenza (Bird Flu)

At present, there is no known vaccination specifically against bird flu. As a precaution, human flu vaccinations are recommended for all health workers.

**22. Does the flu shot work against the bird flu?**

The current flu vaccine will not protect you against infection with the avian influenza virus. However, current vaccines protect against circulating human strains, reducing the risk that a person who is being exposed to avian influenza will become infected with both the avian and human viruses at the same time. This will decrease opportunities for the avian influenza virus to acquire human influenza genes and create a new virus subtype against which people have no natural immunity.

**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 antivirals 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.

### **23. 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.

### **24. When will the community and hospital doctors give out Tamiflu for avian flu?**

[http://www.chp.gov.hk/files/pdf/20080131\\_SCEZD.pdf](http://www.chp.gov.hk/files/pdf/20080131_SCEZD.pdf)

**1) For community doctors: ONLY For treatment purpose at Serious and/or Emergency Response Levels** when there are

- (i) Confirmed cases of human avian influenza cases. (After confirmation from the hospital)
- (ii) Strongly suspected local cases of human avian influenza e.g. clinically unwell with symptoms of flu **after genuine contact of confirmed cases of avian flu**)

Note that the antiviral agents would be used for **treatment only**.

**2) For Hospital doctors:**

**(i) As treatment purpose as above.**

**(ii) As post-exposure prophylaxis of confirmed cases at the Serious and/or**

### ***Emergency Response Levels.***

The WHO has recently stratified exposure risk to facilitate **decisions to initiate antiviral chemoprophylaxis:**

- (a) High risk exposure - Household or close family contact (Tamiflu should be administered).
- (b) Moderate risk exposure - Involved in e.g. intubation, nebulization, tracheal suction (Tamiflu might be administered).
- (c) Low risk exposure - Healthcare workers not in close contact (unprotected distance > 1 meter or having no direct contact), Tamiflu should probably not be administered).

*Since the confirmation of disease are usually done at the public hospital, Postexposure prophylaxis of these contacts, which may include healthcare workers and community contacts, will be provided by the public health authority to achieve as far as is feasible containment of the spread of the infection.*

### **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/>