

Center for Diagnostic Sciences BULLETIN



November 2005

Issue #14

This bulletin focuses on Avian flu (bird flu). We thank Dr. Joyce Galligan for her contribution to this issue. As always, we invite your comments, questions, and suggested topics for future bulletins. Please forward your comments to Anisa Marino at anisamar@usc.edu.

The rapid spread of Avian flu (bird flu), which is not uncommon among chickens and other fowl and seen occasionally in pigs, has caught the attention of global health authorities. Everyone should prepare but not panic about the bird flu.

What is avian influenza (bird flu)?

There are at least 15 different types of avian flu that routinely infect birds around the world. The avian flu strains range from low to highly pathogenic (contagious) strains. The strain causing concern among health officials is known as H5N1. This strain is very contagious among birds and makes some domesticated birds, including chickens, ducks, and turkeys, very sick and may kill them. The H5N1 virus can be transmitted to humans, causing severe illness and death.

Do bird flu viruses infect humans?

Bird flu viruses do not usually infect humans, but several cases of human infection with bird flu viruses have occurred since 1997.

What are the symptoms of bird flu in humans, and are they different from the traditional flu symptoms?

Symptoms of bird flu in humans have ranged from typical flu-like symptoms (fever, cough, sore throat and muscle aches) to eye infections, pneumonia, severe respiratory diseases (such as acute respiratory distress), and other severe and life-threatening complications. The symptoms of bird flu may depend on which

virus caused the infection. A recent report from the World Health Organization (WHO) says that the H5N1 virus may incubate longer than other human viruses before causing symptoms. Incubation periods in ordinary flu range from 1- 4 days. In H5N1 cases, the incubation period has mostly been from 2-4 days but has stretched to 8 days. In household clusters of cases, the time between cases has generally ranged from 2-5 days but sometimes has been as long as 17 days.

Initial symptoms are more likely to include diarrhea than in ordinary flu cases. Lower respiratory tract symptoms such as shortness of breath appear early in the course of the avian flu illness, whereas upper respiratory symptoms such as a runny nose are less common. The avian flu virus may be found in larger amounts in the throat than in the nose.

How do we determine what type of flu virus a person has?

A laboratory test is required to determine the type of flu virus that is causing an individual to be ill.

How does the bird flu spread?

Infected birds shed the flu virus in their saliva, nasal secretions, and feces. Susceptible birds become infected when they have contact with contaminated excretions or surfaces that are contaminated with excretions. It is believed that most cases of bird flu infection in humans have resulted from contact with infected poultry or contaminated surfaces.

How is bird flu in humans treated?

Studies suggest that prescription medications approved for human viruses would work in preventing bird flu infection in humans.

However, flu viruses can become resistant to these drugs, so these medications may not always work.

What is the H5N1 bird flu that has recently been reported in Asia?

Outbreaks of influenza H5N1 occurred among poultry in 8 countries in Asia during late 2003 and early 2004. At that time, 100 million birds in the affected countries either died from the disease or were killed in order to try to control the outbreak. By March 2004, the outbreak was reported to be under control. Beginning in late June 2004, however, new deadly outbreaks of H5N1 among poultry were reported by several countries in Asia (Cambodia, China, Indonesia, Malaysia, Thailand, and Vietnam). It is believed that these outbreaks are ongoing. Human infections of H5N1 have been reported in Thailand, Vietnam and Cambodia. China recently announced an investigation about possible human cases in its country.

What is the risk to humans from the H5N1 virus seen in Asia?

The H5N1 virus does not usually infect humans. In 1997, however, the first case of spread from a bird to a human was seen during an outbreak of bird flu in poultry in Hong Kong. The virus caused severe respiratory illness in 18 people, 6 of whom died. Since that time, there have been other cases of H5N1 in humans. Most recently, human cases of H5N1 infection have occurred in Thailand, Vietnam and Cambodia during large H5N1 outbreaks in poultry. The death rate from these reported cases has been about 50%. Most of these cases occurred from contact with infected poultry or contaminated surfaces; however, it is thought that a few cases of human-to-human spread of H5N1 have occurred.

So far, spread of H5N1 virus from person to person has been rare and spread has not continued beyond one person. However, because all influenza viruses have the ability to change, scientists are concerned that the H5N1 virus could one day be able to infect humans and spread easily from one person to another.

Because these viruses do not commonly infect humans, there is little or no immune protection against them in the human population. If the H5N1 virus were able to infect people and spread easily from person to person, an "influenza pandemic" (worldwide outbreak of disease) could begin. No one can predict when a pandemic might occur. However, experts from around the world are watching the H5N1 situation in Asia very closely and are preparing for the possibility that the virus may begin to spread more easily and widely from person to person.

How is infection with H5N1 virus in humans treated?

The H5N1 virus currently infecting birds in Asia and causing human illness and death is resistant to amantadine and rimantidine, two antiviral medications commonly used for influenza. Two other antiviral medications, oseltamavir (Tamiflu) and zanamavir (Relenza) would probably work to treat flu caused by H5N1 virus, though studies still need to be done to prove they work.

Should I stockpile the anti-flu drug Tamiflu?

No. You won't be able to tell if early symptoms are the flu or some other virus. Using the drug unnecessarily wastes it and can prompt development of Tamiflu-resistant strains. Private hoarding also hinders hospitals' ability to get Tamiflu for patients who really need it this year during the current flu season.

Last month, Roche, the manufacturer of Tamiflu, halted shipments to US suppliers (except government institutions) after a large number of purchases by companies and private entities was discovered. Roche is trying to curtail people from hoarding their product.

Roche officials also announced curtailing shipments to Switzerland, Germany and Canada.

Will my annual flu shot protect me from the bird flu?

No.

Is there a vaccine to protect humans from H5N1 virus?

There currently is no vaccine to protect humans from H5N1 that is being seen in Asia. However, vaccine development efforts are under way. Research studies to test a vaccine to protect humans against H5N1 virus began in April 2005. (Researchers are also working on a vaccine against H9N2, another bird flu virus subtype).

What is the risk to people in the USA from the H5N1 bird flu outbreak currently occurring in Asia?

The current risk to Americans from H5N1 bird flu outbreak in Asia is low. The strain of H5N1 virus found in Asia has not been found in the United States. There have been no human cases of H5N1 flu in this country. It is possible that travelers returning from affected countries in Asia could be infected. Since February 2004, medical and public health personnel have been watching closely to find any such cases.

Should I avoid traveling to countries in Asia?

The Centers for Disease Control and Prevention (CDC) currently advises that travelers to countries in Asia with known outbreaks of H5N1 should avoid poultry farms, contact with animals in live food markets, and any surfaces that appear to be contaminated with feces from poultry or other animals.

To check to see if the government has issued any travel advisories or restrictions, visit the web site www.cdc.gov/travel

How long can the H5N1 virus survive outside of an infected animal?

The virus can survive for up to four days at 71 F (22 C) and more than 30 days at 32F (0 C). If frozen, it can survive indefinitely.

Is it safe to eat poultry and poultry products this holiday season?

Avian flu is NOT transmitted through cooked food. To date, no evidence indicates that anyone has become infected following the consumption of properly cooked poultry or poultry products, even when these foods were contaminated with the H5N1 virus. Individuals should wash their hands and surfaces that come in contact with raw poultry – or any meat for that matter.

In areas experiencing outbreaks, poultry and poultry products can be safely consumed provided that the items are properly cooked and properly handled during food preparation. The H5N1 virus is sensitive to heat. Normal temperatures used for cooking (70 C in all parts of the food) will kill the virus. Consumers need to be sure that all parts of the poultry are fully cooked (no “pink” parts) and that eggs too, are properly cooked (no “runny” yolks).

Is there anything I should be doing now to help protect myself from the avian flu?

Stay informed. Wash your hands. Education is the best defense. Visit the newly launched web site by the government: www.pandemicflu.gov

Cumulative Number of Confirmed Human Cases of Avian flu (H5N1) Reported to World Health Organization (WHO) as of November 9, 2005

Country	Cases	Deaths
Indonesia	9	5
Viet Nam	92	42
Thailand	20	13
Cambodia	4	4
Total	125	64