KEY FACTS

Information about Avian Influenza (Bird Flu) and Avian Influenza A (H5N1) Virus

This fact sheet provides general information about bird flu and information about one type of bird flu, called avian influenza A (H5N1) that is infecting birds in Asia and has infected some humans.

What is avian influenza (bird flu)?

Bird flu is an infection caused by avian (bird) influenza (flu) viruses. These flu viruses occur naturally among birds. Wild birds worldwide carry the viruses in their intestines, but usually do not get sick from them. However, bird flu is very contagious among birds and can make some domesticated birds, including chickens, ducks, and turkeys, very sick and kill them.

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.

How are bird flu viruses different from human flu viruses?

There are many different subtypes of type A flu viruses. These subtypes differ because of certain proteins on the surface of the flu A virus (hemagglutinin [HA] and neuraminidase [NA] proteins). There are 16 different HA subtypes and 9 different NA subtypes of flu A viruses. Many different combinations of HA and NA proteins are possible. Each combination is a different subtype. All subtypes of flu A viruses can be found in birds. However, when we talk about "bird flu" viruses, we are referring to those flu A subtypes that continue to occur mainly in birds. They do not usually infect humans, even though we know they can do so. When we talk about "human flu viruses" we are referring to those subtypes that occur widely in humans. There are only three known subtypes of human flu viruses (H1N1, H1N2, and H3N2); it is likely that some genetic parts of current human flu A viruses came from birds originally. Flu A viruses are constantly changing, and they might adapt over time to infect and spread among humans.

What are the symptoms of bird flu in humans?

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.

How does bird flu spread?

Infected birds shed 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 the prescription medicines approved for human flu 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.

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What is the risk to humans from bird flu?

The risk from bird flu is generally low to most people because the viruses occur mainly among birds and do not usually infect humans. However, during an outbreak of bird flu among poultry (domesticated chicken, ducks, turkeys), there is a possible risk to people who have contact with infected birds or surfaces that have been contaminated with excretions from infected birds. The current outbreak of avian influenza A (H5N1) among poultry in Asia (see below) is an example of a bird flu outbreak that has caused human infections and deaths. In such situations, people should avoid contact with infected birds or contaminated surfaces, and should be careful when handling and cooking poultry. For more information about avian influenza and food safety issues, visit the World Health Organization website at www.who.int/foodsafety/micro/avian/en.

What is an avian influenza A (H5N1) virus?

Influenza A (H5N1) virus – also called "H5N1 virus" – is an influenza A virus subtype that occurs mainly in birds. It was first isolated from birds (terns) in South Africa in 1961. Like all bird flu viruses, H5N1 virus circulates among birds worldwide, is very contagious among birds, and can be deadly.

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

Outbreaks of influenza H5N1 occurred among poultry in eight countries in Asia (Cambodia, China, Indonesia, Japan, Laos, South Korea, Thailand, and Vietnam) during late 2003 and early 2004. At that time, more than 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 influenza H5N1 among poultry were reported by several countries in Asia (Cambodia, China, Indonesia, Malaysia [first-time reports], Thailand, and Vietnam). It is believed that these outbreaks are ongoing. Human infections of influenza A (H5N1) have been reported in Thailand, Vietnam and Cambodia.

What is the risk to humans from the H5N1 virus 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 infection among humans. Most recently, human cases of H5N1 infection have occurred in Thailand, Vietnam and Cambodia during large H5N1 outbreaks in poultry. The death rate for these reported cases has been about 50 percent. 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, see www.cdc.gov/flu/avian/gen-info/pandemics.htm) 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 that has caused human illness and death is resistant to amantadine and rimantadine, two antiviral medications commonly used for influenza. Two other antiviral

medications, oseltamavir and zanamavir, would probably work to treat flu caused by the H5N1 virus, though studies still need to be done to prove that they work.

Is there a vaccine to protect humans from H5N1 virus?

There currently is no vaccine to protect humans against the H5N1 virus 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.) For more information about the H5N1 vaccine development process, visit the National Institutes of Health website at http://www2.niaid.nih.gov/Newsroom/Releases/flucontracts.htm.

What is the risk to people in the United States from the H5N1 bird flu outbreak in Asia?

The current risk to Americans from the 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 the United States. 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.

What does CDC recommend regarding the H5N1 bird flu outbreak in Asia?

In February 2004, CDC provided U.S. health departments with recommendations for enhanced surveillance ("detection") in the U.S. of avian influenza A (H5N1). Follow-up messages (Health Alert Network) were sent to the health departments on August 12, 2004, and February 4, 2005, both reminding health departments about how to detect (domestic surveillance), diagnose, and prevent the spread of avian influenza A (H5N1). It also recommended measures for laboratory testing for H5N1 virus. CDC currently advises that travelers to countries in Asia with known outbreaks of influenza A (H5N1) 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.

What is CDC doing to prepare for a possible H5N1 flu pandemic?

CDC is taking part in a number of pandemic prevention and preparedness activities, including:

- Working with the Association of Public Health Laboratories on training workshops for state laboratories on the use of special laboratory (molecular) techniques to identify H5 viruses.
- Working with the Council of State and Territorial Epidemiologists and others to help states with their pandemic planning efforts.
- Working with other agencies such as the Department of Defense and the Veterans Administration on antiviral stockpile issues.
- Working with the World Health Organization (WHO) and Vietnamese Ministry of Health to investigate influenza H5N1 in Vietnam and to provide help in laboratory diagnostics and training to local authorities.
- Performing laboratory testing of H5N1 viruses.
- Starting a $5.5 million initiative to improve influenza surveillance in Asia.
- Holding or taking part in training sessions to improve local capacities to conduct surveillance for possible human cases of H5N1 and to detect influenza A H5 viruses by using laboratory techniques.
- Developing and distributing reagents kits to detect the currently circulating influenza A H5N1 viruses.
- Working together with WHO and the National Institutes of Health (NIH) on safety testing of vaccine seed candidates and to develop additional vaccine virus seed candidates for influenza A (H5N1) and other subtypes of influenza A virus.

For more information, visit www.cdc.gov/flu,
or call CDC at 800-CDC-INFO (English and Spanish) or 888-232-6348 (TTY).

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