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. Avian influenza viruses usually do not infect humans.

There are 15 different subtypes of avian influenza. Some subtypes have been isolated from caged birds such as, parakeets, parrots, cockatoos, and finches. Infection with avian influenza in these species is rare and the significance of the infection in these birds is not yet clear.

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.

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.

What is the risk to humans from bird flu?

The risk from bird flu is generally low for 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.

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 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.

Where did the current worldwide bird flu outbreak start and how is it spreading?

Beginning in late June 2004, new lethal outbreaks of avian influenza A (H5N1) infection among poultry were reported by several countries in Asia: Cambodia, China, Indonesia, Malaysia (first-time reports), Thailand, and Vietnam. It has since been identified in other parts of Asia, Europe, the Near East, and Africa.

There have been 271 human cases of avian influenza A (H5N1), resulting in 57 deaths reported between January 2004 and February 3, 2007.

The avian influenza A (H5N1) epizootic in Asia is not expected to diminish significantly in the short term. It is likely that H5N1 infection among birds has become endemic to the region and that human infections will continue to occur. So far, no sustained human-to-human transmission of the H5N1 virus has been identified; however, the outbreak in Asia poses an important public health threat.

If these H5N1 viruses gain the ability for efficient and sustained transmission between humans, there is little preexisting natural immunity to H5N1 infection in the human population, and an influenza pandemic could result, with high rates of illness and death. In addition, genetic sequencing of influenza A (H5N1) virus samples from human cases in Vietnam and Thailand shows resistance to the antiviral medications amantadine and rimantadine, two of the medications commonly used for treatment of influenza. This would leave two remaining antiviral medications (oseltamivir and zanamivir) that should still be effective against currently circulating strains of H5N1 virus.
Recent research findings give further cause for concern. New research suggests that currently circulating strains of H5 viruses are becoming more capable of causing disease (pathogenic) for mammals than earlier H5 viruses and are becoming more widespread in birds in the region. One study found that ducks infected with H5N1 are now shedding more virus for longer periods of time without showing any symptoms of illness. This has implications for the role of ducks in transmitting disease to other birds and possibly to humans as well. Additionally, other findings have documented H5 infection among pigs in China and H5 infection in felines (experimental infection in housecats in the Netherlands and isolation of H5N1 viruses from infected tigers and leopards in Thailand), suggesting that cats could host or transmit the infection.

Is there a H5N1 vaccine?

Efforts to produce a vaccine that would be effective against this strain of influenza A (H5N1) virus are under way. Vaccine reference virus strains already have been made and provided to manufacturers to produce pilot lots for human clinical trials as well as to produce a larger quantity of H5N1 vaccine, but mass production and availability of such a vaccine is some time off.

If traveling abroad, what precautions should be taken?

To reduce the risk of infection, Americans living in or traveling to areas where outbreaks of H5N1 among poultry or human H5N1 cases have been reported should observe the following measures to help avoid illness:

Before any international travel:

- Always educate yourself and others who may be traveling with you about any disease risks in areas you plan to visit. See Avian Flu Travel Information, produced by the Centers for Disease Control and Prevention (CDC), and Current Travel Warnings (not limited to avian influenza) by the US. Department of State.
- Be sure you are up to date with all your vaccinations and see your doctor or health-care provider, ideally 4-6 weeks before travel, to get any additional vaccinations, medications, or information you may need. CDC's health recommendations for international travel to various parts of the world can be found at: www.cdc.gov/travel/destinat.htm.
- Assemble a travel health kit containing basic first aid and medical supplies. Be sure to include a thermometer and alcohol-based hand rub for hand hygiene. See the CDC's page: Traveler's Health Kit.
- Identify in-country health-care resources in advance of your trip.
- Check your health insurance plan or get additional insurance that covers medical evacuation in case you become sick. Information about medical evacuation services is provided on the U.S. Department of State web page titled , at: Medical Information for Americans Traveling Abroad.

Once at your destination:

- To minimize the possibility of infection, observe precautions to safeguard your health. Specifically, travelers should avoid all contact with poultry (e.g., chickens, ducks, geese, pigeons, quail) or any wild birds, and avoid settings where H5N1-infected poultry may be present, such as commercial or backyard poultry farms and live poultry markets. Do not eat uncooked or undercooked poultry or poultry products, including dishes made with uncooked poultry blood.

- As with other infectious illnesses, one of the most important preventive practices is careful and frequent handwashing. Cleaning your hands often, using soap and water (or alcohol-based hand gel with 60% alcohol when soap is not available), removes potentially infectious materials from your skin and helps prevent disease transmission.
- CDC does not recommend the routine use of masks or other personal protective equipment while in public areas. Do cover your nose and mouth, though, when sneezing or coughing, and encourage others to do the same.

When preparing food:

- Separate raw meat from cooked or ready-to-eat foods. Do not use the same chopping board or the same knife for preparing raw meat and cooked or ready-to-eat foods.
- Do not place cooked meat back on the same plate or surface it was on before it was cooked.
- All foods from poultry, including eggs and poultry blood, should be cooked thoroughly. Egg yolks and whites should be cooked until firm. Because influenza viruses are destroyed by heat, the cooking temperature for poultry meat should reach 165°F (70°C).
- Do not use raw or soft-boiled eggs in foods that will not be cooked.
- Before and after handling raw poultry or eggs, wash your hands with soap and water for at least 20 seconds. Also
clean all surfaces and utensils thoroughly with soap and water.

What should you do if you become sick when traveling abroad in an avian influenza-affected area?
- If you become sick with symptoms such as a fever accompanied by a cough, sore throat, or difficulty breathing, or if you develop any illness that requires prompt medical attention, a U.S. consular officer can assist you in locating medical services and informing your family or friends. See the U.S. Department of State.

  - Wear a mask if you are sick.
  - Before you visit the doctor or clinic, inform your health-care provider of any possible exposures to avian influenza.
  - Do not travel if you are sick except to seek local medical care.
  - See Seeking Health Care Abroad in Health Information for International Travel for more information about what to do if you become ill while abroad.

Are there any precautions that should be taken after returning home?
- Closely monitor your health for 10 days.
- If you become ill with a fever plus a cough, sore throat or have trouble breathing during this 10-day period, consult a health-care provider. Before you visit a health-care setting, tell the provider the following: 1) your symptoms, 2) where you traveled, and 3) if you have had direct contact with poultry or close contact with a severely ill person. This way, he or she can be aware that you have traveled to an area reporting H5N1.
- Do not travel while ill, unless you are seeking local medical care. Limiting contact with others as much as possible can help prevent the spread of an infectious illness.

What are other good sources of information on avian influenza?
- The CDC’s Avian Influenza (Bird Flu) website.
- The U.S. Government's website http://www.pandemicflu.gov/
- The World Health Organization's section on Avian influenza.