

# Pandemic Influenza (Pan Flu) and Bird Flu Facts

## BASIC TERMS USED TO DESCRIBE INFLUENZA

**Avian Influenza or Bird Flu** refers to a large group of different influenza viruses that primarily affect birds. On rare occasions, these bird viruses can infect other species, including pigs, humans, and other mammals. The vast majority of avian influenza viruses do not infect humans. An influenza pandemic happens when a new sub-type emerges that has not previously circulated in humans.

**Pandemic Flu** is flu that causes a global outbreak, or pandemic, of serious illness that spreads easily from person to person. For this reason, avian H5N1 is a strain with pandemic potential, since it might ultimately adapt into a strain that is contagious among humans. Once this adaptation occurs, it will no longer be a bird virus – it will be a human influenza virus. Influenza pandemics are caused by new influenza viruses that have adapted to humans.

**Seasonal flu** occurs every year during the winter months. In the U.S. flu season begins in December and ends in March. Like other influenza viruses it causes a contagious respiratory illness that most people recover from within one to two weeks. However, an estimated 36,000 individuals die each year in the US from Seasonal flu infection, with another 200,000 being hospitalized from complications.

## Q & A AVIAN INFLUENZA

### Q What is avian influenza (bird flu)?

**A** Avian influenza 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, avian influenza is very contagious among birds and can make some domesticated birds, including chickens, ducks, and turkeys, very sick and kill them.

### Q How does avian influenza spread among birds?

**A** Infected birds shed influenza virus in their saliva, nasal secretions, and feces. Susceptible birds become infected when they have contact with contaminated excretions or with surfaces that are contaminated with excretions or secretions. Domesticated birds may become infected with avian influenza virus through direct contact with infected waterfowl or

other infected poultry or through contact with surfaces (such as dirt or cages) or materials (such as water or feed) that have been contaminated with the virus.

### Q How do people become infected with avian influenza viruses?

**A** Most cases of avian influenza infection in humans have resulted from direct or close contact with infected poultry (e.g., domesticated chicken, ducks, and turkeys) or surfaces contaminated with secretions and excretions from infected birds. The spread of avian influenza viruses from an ill person to another person has been reported very rarely, and transmission has not been observed to continue beyond one person. During an outbreak of avian influenza among poultry, there is a possible risk to people who have direct or close contact with infected birds or with surfaces that have been contaminated with secretions and excretions from infected birds.

**Q What are the symptoms of avian influenza in humans?**

**A** Symptoms of avian influenza in humans have ranged from typical human influenza-like symptoms (fever, cough, sore throat, and muscle aches) to eye infections, pneumonia, severe respiratory diseases (such as acute respiratory distress syndrome), and other severe and life-threatening complications. The symptoms of avian influenza may depend on which specific virus subtype and strain caused the infection.

**Q How is avian influenza detected in humans?**

**A** A laboratory test is needed to confirm avian influenza in humans.

**Q What are the implications of avian influenza to human health?**

**A** Two main risks for human health from avian influenza are:

1. the risk of direct infection when the virus passes from the infected bird to humans, sometimes resulting in severe disease
2. the risk that the virus – if given enough opportunities – will change into a form that is highly infectious for humans and spreads easily from person to person. How is avian influenza in humans treated? Studies done in laboratories suggest that the prescription medicines approved for human influenza viruses should work in treating avian influenza infection in humans. However, influenza viruses can become resistant to these drugs, so these medications may not always work. Additional studies are needed to determine the effectiveness of these medicines.

**Q Does the current seasonal influenza vaccine protect me from avian influenza?**

**A** No. Influenza vaccine for the 2007-08 season does not provide protection against avian influenza.

**Q Should I wear a surgical mask to prevent exposure to avian influenza?**

**A** Currently, wearing a mask is not recommended for routine use (e.g., in public) for preventing influenza exposure. In the United States, disposable surgical and procedure masks have been widely used in health-care settings to prevent exposure to respiratory infections, but the masks have not been used commonly in community settings, such as schools, businesses, and public gatherings.

**Q Can I get avian influenza from eating or preparing poultry or eggs?**

**A** You cannot get avian influenza from properly handled and cooked poultry and eggs. There currently is no scientific evidence that people have been infected with bird flu by eating safely handled and properly cooked poultry or eggs. Most cases of avian influenza infection in humans have resulted from direct or close contact with infected poultry or surfaces contaminated with secretions and excretions from infected birds. Even if poultry and eggs were to be contaminated with the virus, proper cooking would kill it. In fact, recent studies have shown that the cooking methods that are already recommended by the U.S. Department of Agriculture (USDA) and the Food and Drug Administration (FDA) for poultry and eggs to prevent other infections will destroy influenza viruses as well. So to stay safe, the advice is the same for protecting against any infection from poultry:

- Wash your hands with soap and warm water for at least 20 seconds before and after handling raw poultry and eggs.

- Clean cutting boards and other utensils with soap and hot water to keep raw poultry from contaminating other foods.
- Use a food thermometer to make sure you cook poultry to a temperature of at least 165 degrees Fahrenheit. Consumers may wish to cook poultry to a higher temperature for personal preference.
- Cook eggs until whites and yolks are firm.

The U.S. government carefully controls domestic and imported food products, and in 2004 issued a ban on importation of poultry from countries affected by avian influenza viruses, including the H5N1 strain. This ban still is in place. For more information, see Embargo of Birds from Specified Countries at <http://www.cdc.gov/flu/avian/outbreaks/embargo.htm>

**Q We have a small flock of chickens. Is it safe to keep them?**

**A** Yes. In the United States there is no need at present to remove a flock of chickens because of concerns regarding avian influenza. The U.S. Department of Agriculture monitors potential infection of poultry and poultry products by avian influenza viruses and other infectious disease agents.

**Q What precautions can be taken to reduce the risk for infection from wild birds in the United States?**

**A** As a general rule, the public should observe wildlife, including wild birds, from a distance. This protects you from possible exposure to pathogens and minimizes disturbance to the animal. Avoid touching wildlife. If there is contact with wildlife do not rub eyes, eat, drink, or smoke before washing hands with soap and water. Do not pick up diseased or dead wildlife. Contact your state, tribal, or federal natural resource agency if a sick or dead animal is found.

**Q What are advisable actions to protect against contracting the flu?**

**A** As in the past, the most helpful means for preventing the spread of flu have been following good respiratory etiquette (cover your sneeze, please!), hand-washing and use of hand-sterilization liquid. It can also be beneficial to avoid unnecessary travel, crowded places, public transportation, crowded restaurants, etc. If and when bird flu arrives, Johns Hopkins will follow the federal Centers for Disease Control and Prevention (CDC) guidelines for curbing its spread.

**Q Will Johns Hopkins have the necessary medical supplies during a pandemic?**

**A** Johns Hopkins is working on obtaining adequate supplies of medications, masks, hand sanitizer, gowns, and other materials that will be needed in the event of a pandemic.

**Information Adapted from the Center for Disease Control and Prevention (CDC)**

<http://www.cdc.gov/flu/avian>

**For additional information, please visit:**

<http://www.pandemicflu.gov>

## AVIAN INFLUENZA INFECTION IN ANIMALS

### The Role of Migratory Birds

During 2005, a significant source of international spread of avian influenza A (H5N1) in birds became apparent for the first time. Scientists are increasingly convinced that at least some migratory waterfowl are now carrying the H5N1 virus in its highly pathogenic form, sometimes over long distances, and introducing the virus to poultry flocks in areas that lie along their migratory routes. Scientific studies comparing viruses from different outbreaks in birds have found that viruses from the most recently affected countries, all of which lie along migratory routes, are almost identical to viruses recovered from dead migratory birds at Qinghai Lake. Viruses from Turkey's first two human cases, which were fatal, were also virtually identical to viruses from Qinghai Lake.

### Q What animals can be infected with avian influenza A (H5N1) virus?

**A** In addition to humans and birds, we know that pigs, tigers, leopards, ferrets, and domestic cats can be infected with avian influenza viruses. In addition, in early March 2006, Germany reported H5N1 infection in a stone marten (a weasel-like mammal). The avian influenza A (H5N1) virus that emerged in Asia in 2003 is evolving and it's possible that other mammals may be susceptible to infection as well. CDC is working closely with domestic and international partners to continually monitor this situation and will provide additional information to the public as it becomes available.

### Q Can domestic cats be infected with avian influenza viruses?

**A** While domestic cats are not usually susceptible to influenza type A infection, it is known that they can become infected and die (both experimentally and naturally) with avian influenza A (H5N1) and, in a laboratory/

research setting can spread the virus to other cats. It is not known whether domestic cats can spread the virus to other domestic cats under natural conditions.

### Q How do cats become infected with avian influenza A (H5N1) viruses?

**A** All of the cases of influenza A (H5N1) infection in domestic cats reported to date have been associated with H5N1 outbreaks among domestic poultry or wild birds and are thought to have occurred by the cat eating raw infected birds.

### Q How commonly have cats been infected with avian influenza A (H5N1) viruses?

**A** During the avian influenza A (H5N1) outbreak that occurred from 2003 to 2004 in Asia, there were several unofficial reports of fatal infections in domestic cats. Studies carried out in the Netherlands and published in 2004 showed that housecats could be infected with avian influenza A (H5N1) and could spread the virus to other housecats. In these experiments, the cats became sick after direct inoculation of virus isolated from a fatal human case, and following the feeding of infected raw chicken. In February 2006, Germany reported that a domestic cat had died from influenza A (H5N1) infection. That cat lived in the northern island of Ruegen, where more than 100 wild birds are believed to have died of the disease. The cat probably got sick by eating an infected bird.

**Q What about infection in large cats like tigers?**

**A** Large cats kept in captivity have been diagnosed with avian influenza A (H5N1) as well. In December 2003, two tigers and two leopards that were fed fresh chicken carcasses from a local slaughterhouse died at a zoo in Thailand. An investigation identified avian influenza A (H5N1) in tissue samples. In February and March 2004, the virus was detected in a clouded leopard and white tiger, respectively, both of which died in a zoo near Bangkok. In October 2004, 147 of 441 captive tigers in a zoo in Thailand died or were euthanized as a result of infection after being fed fresh chicken carcasses. The cats are thought to have gotten sick from eating infected raw meat. Results of a subsequent investigation suggested that at least some tiger-to-tiger transmission occurred in that facility.

**Q Can cats spread H5N1 to people?**

**A** There is no evidence to date that cats can spread H5N1 to humans. No cases of avian influenza A (H5N1) in humans have been linked to exposure to sick cats, and no outbreaks among populations of cats have been reported. Because the virus sheds via feces and respiratory secretions from infected cats, there is a theoretical risk of cat to human transmission.

**Q What is the current risk that a cat in the United States will become infected with influenza A (H5N1)?**

**A** As long as there is no influenza A (H5N1) in the United States, there is no risk of a U.S. cat becoming infected with this disease. The virus circulating in Asia, Europe and Africa has not yet entered the United States. CDC is working closely with domestic and international partners to continually monitor this situation and will provide additional information to the public as it becomes available.

**Q If avian influenza A (H5N1) is identified in the United States, how can I protect my cat?**

**A** As long as there is no H5N1 influenza in the United States, at this time there is no risk of a U.S. cat becoming infected with this disease. In Europe, however, where H5N1 has been reported in wild birds, poultry, several cats, and a stone marten (a member of the weasel family), the European Center for Disease Prevention and Control has issued preliminary recommendations for cat owners living in H5N1-affected areas. Pet cats should be kept indoors. If cats bring a sick or dead bird inside the house, put on plastic gloves and dispense of the bird in plastic bags for collection by local veterinary animal handlers. Keep stray cats outside the house and avoid contact with them. If cats show breathing problems or nasal discharge, a veterinarian should be contacted. Do not touch any sick-looking or dead animals. Wash hands with soap and water regularly and especially after handling animals and cleaning their litter boxes or coming in contact with feces or saliva. The Food and Agriculture Organization has produced guidance for areas where H5N1 has been diagnosed or is suspected in poultry or wild birds. They will continue to update these recommendations as new areas are affected.

**Q Can dogs be infected with avian influenza A (H5N1)?**

**A** While dogs are not usually susceptible to avian influenza viruses, the avian influenza A (H5N1) virus that emerged in Asia in 2003 has been documented to infect other carnivore species (e.g. cats, tigers, leopards, stone martens). This has raised concern that this strain of avian influenza A (H5N1) virus may be capable of infecting dogs. An unpublished study carried out in 2005 by the National Institute of Animal Health in Bangkok indicated that dogs could be infected with the

virus, but no associated disease was detected. This limited information is not enough to determine definitively whether dogs are susceptible to the virus. Countries in Europe have advised owners of dogs living near H5N1 affected areas to keep their dogs on a leash when walking them and under observation if outside. CDC is coordinating with USDA, veterinary associations, and other partners domestically and internationally on this issue and will provide additional information to the public as it becomes available.

**Q How would dogs be infected with avian influenza A (H5N1)?**

**A** There is not enough information available about avian influenza A (H5N1) infection in dogs to know how infection would occur. Affected domestic cats in Europe appear to have become infected by feeding upon raw infected poultry or wild birds. If dogs are susceptible to avian influenza A (H5N1), infection may be by the same route.

**Q What is the current risk that a dog in the United States will become infected with avian influenza A (H5N1)?**

**A** As long as there is no influenza A (H5N1) in the United States, there is no risk of a U.S. dog becoming infected with this disease. The virus circulating in Asia, Europe and Africa has not yet entered the United States. CDC is working closely with domestic and international partners to continually monitor this situation and will provide additional information to the public as it becomes available.

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