



Avian Influenza

HPAI H5 infections have been identified in U.S. domestic and commercial poultry between December 2014 and June 2015. No human infections from these viruses have been detected in the U.S.

What is avian influenza?

Avian influenza, or “bird flu”, is an infection caused by influenza A viruses, which normally infect only birds. These influenza A viruses are found in wild birds worldwide and spread easily among birds. In many wild species of birds, especially in birds that swim or live near water including ducks, geese and gulls, infection with avian influenza generally does not cause illness, but may lead to serious disease in domesticated birds such as chickens, ducks, and turkeys.

What types of avian influenza viruses are there and which cause serious disease in birds?

Influenza A viruses are classified into subtypes based on certain proteins present on the outer layer of the virus. These proteins are hemagglutinin (H) and neuraminidase (N). There are 17 different H subtypes and 10 different N subtypes. Any combination of these two protein types is possible to form an influenza A virus subtype, for example H7N9 or H5N1. The ability of avian influenza viruses to cause serious disease (pathogenicity) tends to vary with the makeup or subtype of the virus. Subtypes that are classified as “low path” cause mild symptoms of illness in birds such as ruffled feathers and a drop in egg production. “High path” virus subtypes cause more severe disease, spread rapidly through a flock, and kill a significant number of birds. Presently, only H5 and H7 subtypes cause severe disease outbreaks in birds.

How common is avian influenza?

Avian influenza A viruses are routinely found in wild birds, and outbreaks among poultry occur worldwide from time to time. Since 1997, the United States has experienced sporadic incidents of “low path” avian influenza viruses and two incidents of “high path” avian flu virus among poultry in the United States.

How is avian influenza controlled?

When avian influenza outbreaks occur in poultry such as chickens or turkeys, animal health officials use quarantine, surveillance, and reduction in the number of birds (or culling) in the affected flock to control and stop the spread of disease.

How does avian influenza spread?

Infected birds shed the influenza virus in their saliva, nasal secretions, and feces. Birds may be infected when they come in contact with contaminated excretions or surfaces. The occurrence of human infections is rare since avian influenza viruses are adapted to birds and usually do not affect humans. Most cases of avian influenza in humans have resulted from contact with infected poultry or contaminated surfaces such as feed, water, equipment, cages, or clothing. Human exposure to infected birds is considered most likely during slaughter, removing feathers, butchering, or preparation of infected poultry for cooking.

What are the symptoms of avian influenza in humans?

The symptoms of avian influenza in humans depends on the characteristics of the infecting virus. In most cases, the symptoms will be absent or mild consisting of fever, headache and eye inflammation (conjunctivitis). Rarely, symptoms may be more severe including high fever, cough, sore throat, pneumonia, acute respiratory distress, and other severe and life-threatening complications.

How commonly do avian influenza viruses affect humans?

Although avian influenza A viruses usually do not infect humans, several instances of human infections have been reported since 1997. Most cases of avian influenza infection in humans are thought to have resulted from direct contact with infected poultry or contaminated surfaces such as feed, water, equipment, cages or clothing. These human cases of influenza have been in poultry workers and farmers who raise chickens, turkeys or ducks, as well as people who work in live bird markets.

What is the H5N1 avian influenza virus?

Influenza A (H5N1) virus—also called Highly Pathogenic Avian Influenza A H5N1 (HPAI H5N1)—is an influenza A virus subtype that occurs mainly in birds. Its first significant recognition was in 1997 in Hong Kong where it caused outbreaks in poultry and humans. Since 2003, more than 700 human cases of HPAI H5N1 have been reported from primarily 15 countries in Asia, Africa, the Pacific, and the Near East. Approximately 60% of those cases have died. The majority of cases have occurred among children and adults younger than 40 years old. Mortality has been highest among people aged 10-19 years old and young adults. Despite the high mortality, human cases of HPAI H5N1 remain rare to date, even among people exposed to infected, sick, or dead poultry. Currently HPAI H5N1 is considered endemic in poultry in six countries (Bangladesh, China, Egypt, India, Indonesia, and Vietnam).

What is the H7N9 avian influenza virus?

Influenza A (H7N9) virus—also called H7N9 virus—is an influenza A virus subtype that infects mainly birds. It was first reported in China by the World Health Organization in the spring of 2013. A high number of cases occurred during April of 2013; a drop in cases occurred during the summer; and then the number of cases began to rise again in October 2013. This suggests that avian influenza viruses, like seasonal influenza viruses, may have a seasonal pattern: they circulate at higher levels in cold weather. While some people have had mild illnesses, most cases had severe respiratory illness and approximately 30% have died. There continues to be no evidence of sustained person-to-person spread. There have been a few cases outside of China, but all have been in a traveler from an H7N9-affected area of China. The H7N9 virus has not been detected in people or birds in the U.S.

Do the HPAI H5N1 and H7N9 viruses spread easily from birds to humans?

The HPAI H5N1 and H7N9 viruses do not easily spread from birds to humans. Although there have been more than 700 cases of H5N1 and more than 570 cases of H7N9, this number is quite small when considering the population of birds affected and the many opportunities for human contact especially in areas where people raise their own chickens and ducks (backyard flocks).

What is the risk to people in Oklahoma from the current HPAI H5N1 and H7N9 outbreaks?

The current risk to people in Oklahoma from the HPAI avian influenza outbreaks in other parts of the world is extremely low. There have been no avian or human cases of HPAI H5N1 or H7N9 in the United States. It is possible that travelers returning from affected countries could be infected if they were exposed to the virus most likely through contact with poultry. While medical and public health personnel remain on the look out for HPAI cases, sporadic human cases of HPAI H5N1 and H7N9 do not pose a significant public health risk because neither virus, in its current form, spreads easily person-to-person.

What is the risk of HPAI avian influenza to Oklahoma's wild bird population or poultry industry?

HPAI H5 infections have been reported in U.S. domestic poultry (backyard and commercial flocks), captive wild birds, and wild birds. These H5 bird flu viruses were reported in 21 states between December 2014 and June 2015. To date, no infected flocks have been identified in Oklahoma. Surveillance is still ongoing and the situation is being closely monitored. It is possible that H5 outbreaks in birds may recur in the fall or winter. At this time, no human infections with these viruses have been detected in the U.S.

Is there a vaccine to protect people from the H5N1 or H7N9 avian influenza virus?

The Food and Drug Administration has approved a vaccine that effectively prevents infection with the H5N1 virus in humans, but it is not commercially available. The U.S. government maintains a stockpile of H5N1 vaccine to distribute if needed. Currently there is no vaccine to protect against H7N9 virus, but CDC and others are working to develop one. The traditional yearly "flu shot" does not protect against any avian influenza viruses.

What is the Oklahoma State Department of Health doing to prepare for a possible outbreak of HPAI or other pandemic influenza threats?

The Oklahoma State Department of Health has developed a pandemic influenza management plan to address the public health response that would be needed during an influenza pandemic. This plan is reviewed and revised regularly.