

**The widely publicized Asian H5N1 “bird flu” is not present anywhere in North America. There have been no records of positive tests in wild or domestic birds, or cases of human illness 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 are quite contagious among birds. In many wild species of birds, especially waterfowl (ducks, geese, gulls), infection with avian influenza does not result in illness, but infection in domesticated birds such as chickens, ducks, and turkeys may lead to serious disease and mortality.

## **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 16 different H subtypes and 9 different N subtypes. Any combination of these two protein types is possible to form a virus subtype, for example H9N3, H7N7, 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 are associated with severe disease outbreaks in birds.

## **How common is avian influenza?**

Avian influenza outbreaks among poultry occur worldwide from time to time. Since 1997, more than 16 outbreaks of H5 and H7 influenza have occurred among poultry in the United States.

## **How is avian influenza controlled?**

When avian influenza outbreaks occur in poultry, quarantine and depopulation (or culling) and surveillance around affected flocks by animal health officials are used to control and stop the spread of disease.

## **How does avian influenza spread?**

Infected birds shed the influenza virus in their respiratory discharges and droppings. Birds may be infected when they come into 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 infect 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. Exposure to humans 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 depend 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 in people who work in live bird markets.

## **What is the H5N1 avian influenza virus that has been found in Asia and Europe?**

Influenza A (H5N1) virus – also called “H5N1 virus” – is an influenza A virus subtype that occurs mainly in birds. Its first significant recognition was in 1997 in Hong Kong where it was determined to be the cause of poultry disease outbreaks and 18 associated human cases of severe respiratory illness. Over one million birds were destroyed to control the disease spread.

During late 2003 and early 2004, outbreaks of influenza H5N1 occurred among poultry in eight countries in Asia (Cambodia, China, Indonesia, Japan, Laos, South Korea, Thailand, and Vietnam). 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 outbreaks of influenza H5N1 among poultry were reported by several countries in Asia (Cambodia, China [Tibet], Indonesia, Kazakhstan, Malaysia, Mongolia, Russia [Siberia], Thailand, and Vietnam). It is believed that these outbreaks are ongoing. Most recently, influenza H5N1 has spread to the Near East, Europe, and Africa. Human infections of influenza A (H5N1) have been reported in at least ten countries.

**Does the H5N1 avian influenza virus spread easily from birds to humans?**

The H5N1 avian influenza virus does not easily spread from birds to humans. In 1997, the first case of spread from a bird to a human was seen during an outbreak of H5N1 avian influenza in poultry. There have been a little over 120 human cases in the current outbreak. However, 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). So far, spread of H5N1 avian influenza from person-to-person has only been identified in a few small family clusters and did not extend beyond one person.

**What is the risk to people in Oklahoma from the H5N1 avian influenza outbreak in Asia and Europe?**

The current risk to Oklahomans from the H5N1 avian influenza outbreak in Asia is extremely low. The strain of H5N1 virus found in Asia and Europe has not been found in the United States. There have been no avian or human cases of H5N1 influenza 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. Since February 2004, medical and public health personnel have been watching closely to find any such cases; however, sporadic human cases of H5N1 do not pose a significant public health risk because the H5N1 virus in its current form does not spread easily person-to-person.

**What is the risk of H5N1 avian influenza to Oklahoma's wild bird population or poultry industry?**

Fortunately, there is little overlap between the north-south migratory routes of birds in the eastern hemisphere with those of birds in the western hemisphere. A small potential exists for introduction of the virus in wild birds in Alaska and northern Canada. The U.S. Fish & Wildlife Service has an ongoing surveillance program to test wild birds for H5N1 virus. Our modern poultry production facilities use biosecurity measures that protect flocks from introduction of several bird diseases, including avian influenza H5N1. State animal health officials and industry representatives are working together to strengthen disease detection efforts to ensure a rapid response if needed.

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

There currently is no commercially available vaccine to protect humans against the H5N1 virus. However, vaccine development efforts are taking place. The traditional yearly "flu shot" provides protection against the circulating human influenza viruses that people are most likely to encounter during the flu season. This vaccination does not protect against any avian influenza viruses.

**What is the Oklahoma State Department of Health doing to prepare for a possible outbreak of H5N1 avian influenza or other pandemic influenza threat?**

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 will be reviewed and revised regularly. For more information on the Oklahoma Pandemic Influenza Management Plan, see <http://www.health.state.ok.us/program/cdd/flu/Oklahoma%20PIM%20Plan%20Final%20WEB%20DRAFT.pdf>

