Avian Influenza

What is avian influenza?

Influenza, commonly called “the flu”, is a contagious disease caused by viruses that infect the respiratory tract including nose, throat, and lungs. Many varieties of influenza viruses exist. Some viruses infect only humans, others only birds, pigs or dogs. Some can infect more than one mammal (called “cross species”). In birds, this disease is called avian influenza or the “bird flu”.

Avian influenza has been around for over 100 years. It was first reported as “fowl plague” in 1878 when it caused a lot of deaths in chickens in Italy.

Avian flu can affect the respiratory, gastro-intestinal, reproductive or nervous system (or combinations of these) in many kinds of birds. The earliest signs of infection in chickens are a loss of appetite and a decrease in egg production. Symptoms of avian flu can range widely from mild illness to a highly infectious disease that can kill an entire flock of chickens within hours. Some wild birds and waterfowl (like ducks and geese) can carry the virus without showing signs of infection. Pigeons appear resistant to the infection. However, domestic chickens are very susceptible to influenza infections which can easily spread to other chickens and quickly turn into epidemics (in poultry).

NOTE: For information about the common flu in humans, please see the OSH Answers Influenza.

How is avian flu spread between birds?

Avian influenza is mainly spread by direct contact between infected birds and healthy birds. It can also be transmitted when birds come in contact with equipment or materials (including water and feed) that have been contaminated with feces or secretions from the nose or mouth of infected birds.

People can also spread the disease indirectly from farm to farm by their carrying the virus on their clothing, boots or vehicle wheels.

Wild birds normally can carry the virus without getting ill themselves. However, there have been a few rare situations where wild flocks became ill or where migratory birds infected local poultry flocks along their flight routes. Scientists are currently studying how and why this change is happening.

Are all avian influenza viruses equally dangerous?

No. Avian influenza viruses can be classified as low pathogenic avian influenza viruses (LPAI) and high pathogenic avian influenza viruses (HPAI). “Low pathogenic”

means that the virus causes a mild disease like ruffled feathers and decreased egg production. High pathogenic viruses are extremely contagious and can cause up to 100% of an infected flock to die.

What causes avian influenza?

Type A influenza viruses (Influenzavirus A) cause avian influenza.

Is there more than one kind of influenza virus?

Yes. The influenza virus belongs to the family of orthomyxoviruses which has influenza types A, B, C and D.

Only influenza type A viruses cause flu in birds. Influenza type A viruses have been found in wild and domestic birds from around the world. The majority of viruses have been found in waterfowl (e.g., ducks, geese, gulls, and terns) and domestic birds (e.g., chickens, turkeys, ducks, geese, pheasants and quail). There are many distinct varieties or strains of avian influenza type A viruses but most strains in ducks and other birds do not cause any disease symptoms.

Influenza type A viruses can also infect people, pigs, hogs, dogs, horses, seals, whales, and mink.

Influenza types B viruses are usually only found in humans. Influenza type B viruses can cause human epidemics, but they have not caused pandemics.

Influenza type C viruses cause mild symptoms in humans and do not cause epidemics or pandemics. Type C viruses have also been found in pigs and dogs.

Influenza type D viruses affect cattle and are not known to cause illness in people.

What is meant by the H5N1 or H7N9 virus?

Influenza type A viruses are classified into subtypes and each subtype is further divided into strains.

The H and N letters refer to the different kinds of proteins found on the outside surface of the influenza virus. The various subtypes of type A influenza virus depend on the kinds of proteins that stick out from the surface of the virus – the haemagglutinin or HA protein and the neuraminidase or the NA protein. The body's immune system can make antibodies that can recognize these specific virus proteins (antigens) and therefore fight that specific influenza virus.

Researchers have found 18 kinds of HA proteins and 11 NA proteins in many combinations in bird flu viruses. These combinations are reported as strains of the influenza virus H(number) N(number). For example: H7N1, H9N2, H5N1, H7N9, etc.

Can people get avian influenza?

Avian influenza viruses do not usually infect people. Most cases of infection in people are believed to be the result of direct contact with infected poultry or contaminated surfaces. Two lineages – H5N1 and H7N9 – have been responsible for most human illnesses worldwide to date.

Among all the avian influenza viruses that have caused illness in people, the subtype H5N1 has been associated with very serious illnesses and death. As reported by the Center for Disease Control and Prevention (CDC), although human infections with this virus are rare, approximately 60% of people who did become infected have died.

The H7N9 virus has been detected in birds and people in China since 2013. Regulators reported a single case of H7N9 avian influenza in a person who had recently returned from a trip in 2013. For the H7N9 virus, the CDC reports some mild illnesses in

humans, with most patients having had severe respiratory illness. About one-third of cases resulted in death. Again, only limited evidence shows person-to-person spread in rare cases.

How does avian flu spread to humans?

While rare, avian influenza in humans is mainly caused by contact with:

- infected chickens or other birds,
- manure and litter having high concentrations of avian virus,
- contaminated surfaces,
- contaminated vehicles, equipment, clothing and footwear at farms where there are infected birds, and
- infected birds when being defeathered and prepared for sale.

The virus does not spread easily from birds to humans, or from human to human. However, there have been very rare cases when the avian virus has spread from one ill person to another, but the transmission has not been observed to go beyond one person.

What precautions can poultry workers take?

People working with poultry suspected of being infected with avian influenza, or in contact with such poultry, should wear protective clothing. This clothing includes face masks, goggles, gloves, and boots.

In cases where you are in contact with infected birds, personal hygiene steps include washing hands, showering, and washing all of your clothing. Clean and disinfect your footwear.

What are the symptoms of avian flu in people?

The symptoms are similar to those of ‘regular’ human influenza and can include fever, cough, aching muscles, sore throat, eye infections and serious respiratory infections including pneumonia.

There is usually no vaccine against new strains of influenza. Some studies indicate that certain drugs that fight human influenza may help prevent serious illness among people infected with the avian influenza virus.

Can people get avian influenza from eating poultry infected with influenza?

No. Avian influenza is not spread by cooked food. While the World Health Organization recommends proper cooking as a good general practice, it is even more important in countries that have a current outbreak of avian influenza. For example, the virus will be killed by heat so foods should be cooked to a temperature of 70°C to make sure they are safe to eat (no pink parts). Eggs should also be thoroughly cooked (no runny yokes).

Food preparation techniques are also important. Be sure that juices from raw poultry or poultry products do not touch or mix with other foods that will be eaten raw. Always wash your hands thoroughly and wash surfaces after touching poultry products. Cleaning with soap and water is appropriate.

Can the avian influenza turn into a human flu pandemic?

Traditionally, an influenza pandemic occurs when a new influenza A virus appears. Whether the next pandemic is actually caused by the current avian influenza A viruses is not certain.

What steps can I take to avoid getting the flu?

The most important step you can take to reduce the chance of infection is to wash your hands regularly – always wash regularly with soap and warm water.