

Influenza (Avian) Fact Sheet

1. **What is Avian Influenza (AI)?** – AI is an influenza type A virus that infects wild birds (i.e. ducks, gulls, and shorebirds) and domestic poultry (chickens, turkeys, ducks, and geese).
2. **How are AI viruses named?** - AI viruses are classified and named by referring to two groups of virus surface proteins: Hemagglutinin of which there are 16 (H1 to H16) subgroups, and Neuraminidase of which there are 9 (N1 to N9) subgroups. Since these proteins occur in combination, there are 144 possible combinations (H1N1 to H16N9).
3. **Are there Other Groupings?** - AI subtypes may also be divided into two other groups based upon their ability to cause severe disease in poultry:
 - a. Low Pathogenic Avian Influenza (LPAI) infection naturally occurs in wild birds and can be spread to domestic birds, but it normally causes no signs of infection or only minor symptoms in infected birds.
 - b. High Pathogenic Avian Influenza (HPAI) infection generally spreads more rapidly than LPAI and causes a higher avian death rate. HPAI of the H5N1 subgroup that is producing fatal disease in humans in Europe and Asia.
 - c. Both LPAI and HPAI viruses have caused human disease.
4. **How does the AI spread in birds?** - AI is spread by direct contact between birds, and through indirect contact with virus contaminated equipment and materials. The virus is by in the feces of infected birds or through secretions from the nose, mouth and eyes. Exposure to infected fecal material is the most common mode of bird-to-bird transmission. Wild ducks often introduce AI into domestic flocks raised on range or in open flight pens through environmental fecal contamination. Within a poultry house, transfer of AI between birds also can occur via airborne dust and secretions. The spread of avian influenza between poultry premises almost always follows the movement of contaminated people and equipment. Avian influenza virus also can be found on the outer surfaces of fresh egg shells. Therefore, transfer of eggs is a potential means of transmission. Airborne transmission from farm to farm is highly unlikely under usual circumstances.
5. **What are the signs of illness of birds infected with avian influenza?** - LPAI signs are typically mild. Infected birds show signs of decreased food consumption, respiratory signs (coughing and sneezing) and decreased egg production. Birds that are infected with highly pathogenic avian influenza are more severely ill and could exhibit one or more of the following clinical signs: sudden death; lack of energy and appetite; decreased egg production; soft-shelled or misshapen eggs; swelling; purple discoloration; nasal discharge; coughing, sneezing; lack of coordination and diarrhea.
6. **Is it possible for a LPAI to become highly pathogenic?** – Yes. Low pathogenic avian influenza can mutate into highly pathogenic forms.

7. **Does HPAI currently exist in the United States?** - Historically, there have been three HPAI outbreaks in poultry in this country - in 1924, 1983 and 2004. No significant human illness resulted from these outbreaks.
 - a. The 1924 H7 outbreak occurred in the East Coast live bird markets.
 - b. The 1983-84 H5N2 outbreaks resulted in the destruction of approximately 17 million chickens, turkeys and guinea fowl in the northeastern United States.
 - c. The 2004 H5N2 outbreak occurred in chickens in the southern United States.

8. **What kind of testing is used to diagnose avian influenza in birds?** - Samples are usually taken by swabbing the mucus that coats the throat of live birds, which does not harm the birds. With wild birds, a fecal sample can be taken instead.
 - a. The initial test is a polymerase chain reaction (PCR) test. A PCR test is a rapid method of identifying the virus, typically producing results within 3 hours. If a sample from an area where avian influenza has not been previously detected tests positive on a rapid test, a virus isolation confirmatory test is performed.
 - b. The virus isolation confirmatory test involves growing the sample in embryonated chicken eggs, which then provides the material to allow detailed identification of the strain of virus and whether it is highly pathogenic or low pathogenic. The virus isolation test can take 7-10 days to produce results. All H5 and H7 isolations are confirmed at the National Veterinary Services Laboratory at Ames, Iowa.

9. **What can poultry owners do to prevent an AI outbreak in their flocks?** - Poultry owners should strengthen biosecurity practices to prevent the introduction of AI into their flocks. The following are some sound biosecurity practices:
 - a. Keep an "all-in, all-out" philosophy of flock management. Avoid skimming flocks—birds left behind are exposed to work crews and equipment that could carry poultry disease viruses. Process each lot of birds separately, and clean and disinfect poultry houses between flocks.
 - b. Protect poultry flocks from coming into contact with wild or migratory birds. Keep poultry away from any source of water that could have been contaminated by wild birds.
 - c. Permit only essential workers and vehicles to enter the farm.
 - d. Provide clean clothing and disinfection facilities for employees.
 - e. Thoroughly clean and disinfect equipment and vehicles (including tires and undercarriage) entering and leaving the farm.

- f. Do not loan to, or borrow equipment or vehicles from, other farms.
 - g. Change footwear and clothing before working with your own flock after visiting another farm or live–bird market or avoid visiting another bird farm if possible.
 - h. If avian influenza is detected, your premise must be thoroughly cleaned and disinfected. Avian influenza viruses are inactivated by heat and drying and also these viruses are very sensitive to most disinfectants and detergents. The area to be disinfected must be clear of organic material, which greatly increases the resistance of avian influenza virus' resistance to disinfection.
10. **What should owners do if their birds appear to have signs of avian influenza?** - If birds exhibit clinical signs of highly pathogenic avian influenza or might have been exposed to birds with the disease, producers or bird owners should immediately notify Federal or State animal health officials. Information can be found at www.usda.gov/birdflu.
11. **Does proper food handling prevent avian influenza?** - AI is NOT transmissible by eating properly prepared poultry. Proper handling and cooking of poultry provides protection against all avian influenza viruses, as it does against many viruses and bacteria, including Salmonella and E. coli. You should:
- a. Wash hands with warm water and soap for at least 20 seconds before and after handling raw poultry and eggs;
 - b. Prevent cross-contamination by keeping raw poultry and eggs away from other foods;
 - c. After cutting raw meat, wash cutting board, knife, and countertops with hot, soapy water;
 - d. Sanitize cutting boards by using a solution of 1 tablespoon chlorine bleach in 1 gallon of water; and
 - e. Use a food thermometer to ensure poultry has reached the safe internal temperature of at least 165 °F to kill pathogens that might be present, including the avian influenza viruses.
12. **How can people become infected with avian influenza?** - Most people who have become sick or died from highly pathogenic H5N1 have had extensive, direct contact with infected poultry. Broad concerns about public health relate to the potential for the virus to mutate, or change into a form that could easily spread from person to person, a characteristic that could result in a human influenza pandemic.
13. **What are the symptoms in humans?** - The symptoms of AI in humans are: fever, cough, sore throat and muscle aches, diarrhea, pneumonia and other respiratory diseases. Some types of AI primarily cause eye infection (conjunctivitis) in humans. With regard to the H5N1 strain that has been producing human disease to date more than 50% of the diagnosed infections have been fatal. There is some evidence for person-to-person transmission, but this

has been very limited. Most disease has resulted from close contact with infected birds. No human illness has been seen in the western hemisphere due to H5N1.

14. **How will I know if I have been exposed?** - In Pennsylvania, birds in live bird markets and poultry farms are tested on a regular basis to see if they are infected with bird flu. The owners of these facilities are notified if any bird has tested positive for the virus.
15. **What should I do if I've been exposed?** - You should monitor your health for at least 10 days after your last exposure to sick birds, including checking your temperature and paying attention to any symptoms such as cough, eye discharge, chills and muscle aches, and diarrhea. Health Department staff will follow up with you, and help you get medications to prevent or treat this disease, if needed.
16. **How can I avoid getting bird flu?** - Wash your hands well after handling birds, after touching surfaces in contact with birds, and after removing gloves. Wear an outer garment on top of your clothing while working in the market, and leave that at work before you return home. Take a shower before returning home, or immediately after your work shift ends. Report any sick bird immediately to the market owner. Clothing, boots, gloves that were worn during handling of sick birds should not be brought home.
17. **Should I get a flu shot?** - The flu shot that is given during the fall of each year will prevent the common form of flu that affects people every winter. It will not prevent the bird flu if you are exposed to it. However, it is still a good idea to get the yearly flu shot so that you stay healthy.
18. **For more information about Influenza:** <http://www.cdc.gov/flu/keyfacts.htm>

This fact sheet provides general information. Please contact your physician and/or veterinarian for specific clinical information related to you or your animal.