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## INDIANA STATE BOARD OF ANIMAL HEALTH

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### Questions and Answers: Avian Influenza

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#### **Q. What is avian influenza?**

A. Avian influenza (AI) is a disease found among poultry. AI viruses can infect chickens, turkeys, pheasants, quail, ducks, geese and guinea fowl as well as a wide variety of other birds, including migratory waterfowl. Each year, there is a flu season for birds just as there is for humans and, as with people, some forms of the flu are worse than others.

AI viruses can be classified into low pathogenicity and highly pathogenic forms based on the severity of the illness they cause in poultry. Most AI strains are classified as low pathogenicity avian influenza (LPAI) and cause few clinical signs in infected birds. In contrast, high pathogenicity avian influenza (HPAI) causes a severe and extremely contagious illness and death among infected birds.

#### **Q. Besides HPAI and LPAI, is avian influenza divided into other groupings?**

A. Yes, there are 144 different characterizations of the virus based on two groups of proteins found on the surface of the virus. One group is the hemagglutinin proteins (H), of which there are 16 different types (H1-H16); the other group is the neuraminidase proteins (N), of which there are 9 different types (N1-N9). The virus detected in several Asian and European countries is an H5N1 type of highly pathogenic (HPAI) virus.

#### **Q. How is the disease spread?**

A. AI is primarily spread by direct contact between healthy birds and infected birds, and through indirect contact with contaminated equipment and materials. The virus is excreted through the feces of infected birds and through secretions from the nose, mouth and eyes.

Contact with infected fecal material is the most common of bird-to-bird transmission. Wild ducks often introduce low pathogenicity into domestic flocks raised on range or in open flight pens through fecal contamination. Within a poultry house, transfer of the HPAI virus between birds can also occur via airborne secretions. The spread of avian influenza between poultry premises almost always follows the movement of contaminated people and equipment. AI also can be found on the outer surfaces of egg shells. Transfer of eggs is a potential means of AI transmission. Airborne transmission of virus from farm to farm is highly unlikely under usual circumstances.

HPAI can be spread from birds to people as a result of extensive direct contact with infected birds. Broad concerns about public health relate to the potential for the virus to mutate, or change into a form that could spread from person to person. The U.S. Department of Health and Human Services is aggressively working to ensure public health is protected. More information about the joint efforts of the federal government is available at [www.pandemicflu.gov](http://www.pandemicflu.gov).

#### **Q. What symptoms do birds with AI demonstrate?**

A. LPAI symptoms are typically mild. Decreased food consumption, respiratory signs (coughing and sneezing) and a decrease in egg production might demonstrate the presence of the disease. Birds that are affected with HPAI have a greater level of sickness 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.

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**Q. What should producers do if their birds appear to have signs of AI?**

A. If birds exhibit clinical signs of HPAI or might have been exposed to birds with the disease, producers or bird owners should immediately notify Federal or State animal health officials.

**Q. Is it possible for an LPAI strain to become highly pathogenic?**

A. Some low pathogenic subtypes have the capacity to mutate into more virulent strains. While LPAI is considered lower risk, low pathogenic strains of the virus - the H5 and H7 strains - can mutate to highly pathogenic forms.

**Q. Is AI a reportable disease?**

A. HPAI is considered a reportable disease by the World Organization for Animal Health (OIE). OIE has developed animal health standards that classify all H5 and H7 viruses as reportable diseases.

**Q. Does AI threaten human health?**

A. LPAI poses no known serious threat to human health, however some strains of HPAI viruses can be infectious to people. Since December 2003, a growing number of Asian countries have reported outbreaks of HPAI in chickens and ducks. Humans also have been affected, most of who had direct contact with infected birds. The rapid spread of HPAI in 2004 and 2005 is historically unprecedented and of growing concern for human health as well as for animal health.

**Q. Does HPAI currently exist in the United States? Has it ever occurred in this country?**

A. Incidents of LPAI are commonly detected in domestic poultry flocks. LPAI does not pose a serious threat to human health.

There is no evidence that HPAI currently exists 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.

The 1924 H7 HPAI outbreak was detected in and contained to East Coast live bird markets.

The 1983-84 H5N2 HPAI bird outbreak resulted in the destruction of approximately 17 million chickens, turkeys, and guinea fowl in the northeastern United States to contain and eradicate the disease.

In 2004, USDA confirmed an H5N2 HPAI outbreak in chickens in the southern United States. The disease was quickly eradicated thanks to close coordination and cooperation between USDA, state, local, and industry leaders. Because of the quick response, the disease was limited to one flock.

**Q. What kind of test is used to diagnose avian influenza in birds?**

A: 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. These samples go into sealed tubes and are taken to USDA-approved laboratories. 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. This 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 HPAI (high pathogenicity) or LPAI (low pathogenicity). This test can take 3-5 days to produce results. All H5 and H7 isolations are confirmed at the National Veterinary Services Laboratory at Ames, Iowa.

**Q. What is USDA doing to prevent the introduction of HPAI into the United States?**

A: USDA recognizes that HPAI poses a significant threat to animal health and has the potential to threaten human health. Accordingly, USDA has safeguards in place to protect against the introduction of HPAI into the United States. USDA maintains trade restrictions on the importation of poultry and poultry products from countries currently affected by H5N1 HPAI.

USDA also works closely with international organizations like the World Organization for Animal Health (OIE), the

United Nations' Food and Agriculture Organization (FAO), and World Health Organization (WHO) to assist HPAI-affected countries and other neighboring Asian-Pacific countries with disease prevention, management, and eradication activities. By helping these countries prepare for, manage, or eradicate HPAI (H5N1) outbreaks, USDA can reduce the risk of the disease spreading from overseas to the United States.

USDA recognizes that prevention is only one part of a comprehensive strategy and therefore continues to work closely with its Federal, State, and Tribal partners and industry stakeholders to have effective and coordinated emergency response plans at the ready should an outbreak of HPAI occur in the United States.

**Q. What is USDA doing to monitor the U.S. for AI among birds?**

A: The USDA works with federal, state, and industry leaders to monitor and respond to outbreaks of LPAI. APHIS has provided funding and support personnel to states when LPAI has been detected. When HPAI is detected, APHIS personnel are primary responders, due to its infectivity and high mortality rate among poultry. Close attention is also given to two subtypes of LPAI, the H5 and H7 strains, because of the potential for them to mutate into HPAI. The AI strain infecting both birds and humans in Asia is the HPAI H5N1. There is presently no evidence of HPAI H5N1 existing in the U.S. - neither in animals nor humans.

In addition to international import restrictions, APHIS and State veterinarians are specially trained to diagnose foreign animal diseases regularly conduct field investigations of suspicious disease conditions. This surveillance is assisted by university personnel, State animal health officials, USDA-accredited veterinarians, and members of the industry who report suspicious cases. APHIS and State animal health officials work cooperatively with the poultry industry to conduct surveillance at breeding flocks, slaughter plants, live-bird markets, livestock auctions, and poultry dealers.

**Q. What can poultry producers do to prevent an AI outbreak on their farms?**

A. Poultry producers should strengthen biosecurity practices to prevent the introduction of AI into their flocks. The following are some sound biosecurity practices:

- 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.
- 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.
- Permit only essential workers and vehicles to enter the farm.
- Provide clean clothing and disinfection facilities for employees.
- Thoroughly clean and disinfect equipment and vehicles (including tires and undercarriage) entering and leaving the farm.
- Do not loan to, or borrow equipment or vehicles from, other farms.
- 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.
- Do not bring birds from slaughter channels, especially those from live-bird markets, back to the farm.

If AI is detected, farms must be thoroughly cleaned and disinfected. AI is inactivated by heat and drying and it is also 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.

**Q. Does proper food handling prevent avian influenza?**

A. The USDA Food Safety and Inspection Service (FSIS) is working to educate the public about safe food handling practices in response to numerous questions from the public about the human risk associated with avian influenza. There is no evidence that LPAI can be transmitted to people by eating poultry. If HPAI were detected in the U.S., the chance of infected poultry entering the food chain would be extremely low.

Proper handling and cooking of poultry provides protection against this virus, as it does against many viruses and bacteria, including Salmonella and E.coli. Safe food handling and preparation is important at all times. USDA continually reminds consumers to practice safe food handling and preparation every day:

- Wash hands before and after handling food;
- Prevent cross-contamination by keeping raw meat, poultry, fish, and their juices away from other foods;

- After cutting raw meats, wash hands, cutting board, knife, and counter tops with hot, soapy water;
- Sanitize cutting boards by using a solution of 1 teaspoon chlorine bleach in 1 quart of water; and
- Use a food thermometer to ensure food has reached the safe internal temperature--in all parts of the bird. Cook poultry to at least 170° F to kill foodborne germs that might be present, including the AI virus.

Poultry products imported to the U.S. must meet all safety standards applied to foods produced in the U.S. No poultry from countries with confirmed cases of H5N1 HPAI can be imported into the United States.

**Q. Who do I contact if I notice unexplained illness or death in my poultry**

A. Poultry owners who see signs should call 1-866-536-7593.

**Q. How do I get more information about avian influenza?**

A. Go to [www.usda.gov/birdflu](http://www.usda.gov/birdflu)

USDA Meat and Poultry Hotline: 1-888-MPHotline (1-888-674-6854) - TTY: 1-800 256-7072

Or

Visit the Indiana State Board of Animal Health at: [www.boah.in.gov](http://www.boah.in.gov)