

## A Threat to U.S. Poultry

Worldwide, avian influenza (AI)—the bird flu—is a virus that infects wild birds (such as ducks, gulls, and shorebirds) and domestic poultry (such as chickens, turkeys, ducks, and geese). AI viruses are divided into two groups based upon the ability of the virus to produce disease in poultry: low-pathogenic avian influenza (LPAI) and highly pathogenic avian influenza (HPAI).

LPAI, or “low-path” avian influenza, naturally occurs in wild birds and can spread to domestic birds. In most cases, it causes no signs of infection or only minor signs of illness in birds. However, some LPAI virus strains (H5 and H7) are capable of mutating into HPAI viruses and are therefore closely monitored.

HPAI, or “high-path” avian influenza, is often fatal in chickens and turkeys. HPAI spreads rapidly and has a high death rate in birds.

The U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) works to keep HPAI from becoming established in the U.S. poultry population. It is essential for the U.S. poultry industry and bird owners to be aware of this disease and protect their birds.

### Clinical Signs

Birds affected with HPAI might show one or more of the following signs:

- Sudden death without clinical signs
- Lack of energy and appetite
- Decreased egg production
- Soft-shelled or misshapen eggs
- Swelling of the head, eyelids, comb, wattles, and hocks
- Purple discoloration of the wattles, combs, and legs
- Nasal discharge
- Coughing, sneezing
- Incoordination
- Diarrhea



Birds affected by HPAI could show swelling of the head and face.



Hemorrhaging of the skin and legs is just one of the signs birds might exhibit when infected with the virus that causes HPAI.



HPAI can devastate a healthy broiler flock, leaving high rates of mortality and economic losses.



Purple discoloration of the comb could be an indicator of HPAI.

### Economic Impact of an HPAI Outbreak

The United States is the world's largest producer and exporter of poultry meat and the second-largest egg producer. The total U.S. poultry production is valued at \$29 billion yearly. A major outbreak of HPAI would be costly to the poultry industry, consumers, and taxpayers. It also would lead trading partners to ban U.S. poultry and products.



Here, healthy turkeys are compared with turkeys exhibiting signs of diarrhea and depression due to HPAI.

USDA has experience responding to and eradicating HPAI. HPAI has been detected and eradicated three times in U.S. poultry: in 1924, 1983, and 2004. For example, the 1983–84 HPAI H5N2 outbreak resulted in the depopulation of approximately 17 million chickens, turkeys, and guinea fowl in Pennsylvania and Virginia to contain and eradicate the disease. Managing this outbreak cost nearly \$65 million and also caused retail egg prices to increase by more than 30 percent.

### Introduction and Spread of HPAI Virus

Exposure of poultry to migratory waterfowl, imports of poultry and poultry products, movement of poultry equipment, and people can be a source for potentially introducing HPAI into U.S. poultry and/or privately owned flocks of birds. Once introduced, HPAI can be spread from bird to bird through direct contact. HPAI viruses also can be spread by manure, equipment, vehicles, egg flats, crates, and people whose clothing or shoes have come into contact with the virus. Contaminated manure can contain high levels of virus and could be a significant source of infection for other birds. Proper biosecurity—precautions taken to minimize the risk of introducing an infectious disease into an animal population—is critical to protecting the U.S. poultry population.

### Biosecurity Measures on the Farm

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

- Keep an "all-in, all-out" philosophy of flock management.
- Protect poultry flocks from coming into contact with wild or migratory birds and their feces.
- 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 equipment or vehicles to, or borrow them from, other farms.
- Avoid visiting other poultry farms. If you do visit another farm or live-bird market, do not work with your flock until you have changed into clean footwear and clothing.
- Do not bring birds from slaughter channels, especially live-bird markets, back to the farm.

### Biosecurity Measures for Backyard-Flock Owners

APHIS recommends that owners of backyard flocks follow these six tips to prevent poultry disease:

- Keep your distance: restrict access to your property and your birds, keep new birds separate from the rest of their flocks for 30 days;
- Keep it clean: clean and disinfect your clothes, shoes, equipment, and hands;
- Don't haul disease home: if you have been near other birds or bird owners, clean and disinfect poultry cages and equipment before going home;
- Don't risk disease from your neighbor: do not borrow lawn and garden equipment, tools, or poultry supplies from other bird owners;
- Know the warning signs: sudden increase in bird deaths, sneezing, coughing, nasal discharge, watery or green diarrhea, lack of energy, poor appetite, drop in egg production, swelling around the eyes, neck, and head, and purple discoloration of wattles, combs, and legs; and
- Report sick birds: call your local or State veterinarian, or USDA–APHIS Veterinary Services toll-free at 1–866–536–7593.





Allowing a backyard flock to commingle with wild waterfowl poses the risk of introducing HPAI into U.S. poultry.



If HPAI were detected in U.S. poultry, measures such as quarantine, control, and cleanup would be implemented to prevent opportunities for the virus to spread.

### Biosecurity Measures at Live-Bird Markets

To prevent a possible outbreak of HPAI, poultry producers and distributors in the live-bird marketing system must use biosecurity precautions. Retail live-bird markets operate in many major cities. AI viruses can be introduced into any part of the system (farms, distributors, markets) through infected birds or contaminated crates and trucks. Once the virus is established in the system, the movement of birds, crates, or trucks can spread the virus.

To prevent the possible spread of disease, the following protective measures should be taken:

- Use plastic instead of wooden crates for easier cleaning.
- Keep scales and floors clean of manure, feathers, and other debris.

- Clean and disinfect all equipment, crates, and vehicles before the next pickup of birds.
- Keep incoming poultry separate from unsold birds, especially if birds are from different lots.
- Clean and disinfect the marketplace after every day of sale.
- Do not return unsold birds to the farm.

For more specific information about biosecurity and cleaning and disinfection practices, contact any Extension agent, State animal health official, or local APHIS Veterinary Services office.

### Disease Surveillance Activities

To protect the U.S. poultry population, USDA quarantines and tests live birds imported into the United States to ensure that they do not have any foreign animal diseases, such as HPAI. All imported live birds (except from Canada, which must have appropriate permits) must spend 30 days at a USDA quarantine facility where they are tested for the AI virus before entering the country. Non-U.S.-origin pet birds (except from Canada which must have appropriate permits) also are tested and quarantined at a USDA facility.

USDA maintains trade restrictions on the importation of poultry and poultry products originating from countries and/or regions where HPAI has been detected in commercial or traditionally raised poultry. Additionally, USDA has increased its monitoring for illegally smuggled poultry and poultry products through an anti-smuggling program in coordination with the U.S. Department of Homeland Security—Customs and Border Protection.

In addition to these import restrictions, APHIS and State veterinarians 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 industry who report suspicious cases. APHIS and State animal health officials work cooperatively with the poultry industry to conduct surveillance.

Surveillance is done on breeding flocks, commercial production flocks, and backyard flocks and at slaughter plants, distributors, live-bird markets, swap meets, exhibitions, livestock auctions, and diagnostic laboratories. Additionally, APHIS, the U.S. Department of the Interior, and individual States conduct wild-bird surveillance for HPAI viruses, which helps protect poultry.

### Disease Response Activities

USDA works closely with its Federal, State, and tribal partners, as well as industry stakeholders, to coordinate emergency response to livestock and poultry disease outbreaks, including AI.

USDA provides expertise, funding, and support personnel to States when LPAI (H5 or H7) is detected. When HPAI is detected, USDA and State personnel are primary responders to control and eradicate the disease from poultry.

In the event of an HPAI outbreak in the United States, APHIS veterinarians would work with States and industry to respond quickly and decisively following these five basic steps:

- Quarantine—restrict movement of poultry and poultry-moving equipment into and out of the control area;
- Eradicate—depopulate infected and exposed birds;
- Monitor region—broad area of testing;
- Disinfect—kills virus; and
- Test—confirm that the poultry farm is free of the AI virus.

USDA also maintains a bank of AI vaccine that could be used to protect healthy birds outside a control area, if necessary.

### More Information

USDA efforts to protect against and respond to bird flu: [www.usda.gov/birdflu](http://www.usda.gov/birdflu)

Report Sick Farm Birds: If your farm birds are sick or dying, call your State Veterinarian or USDA's Veterinary Services toll free at 1-866-536-7593.

Report Dead Wild Birds: Dead wild birds can be reported to State or Federal wildlife agencies. Information on how to make contact with wildlife officials in your State is available at [www.usda.gov/birdflu](http://www.usda.gov/birdflu), or call 1-866-4USDA-WS.

Biosecurity for Birds:  
<http://.healthybirds.aphis.usdagov/>

Current information on animal diseases and suspected outbreaks: [www.aphis.usda.gov](http://www.aphis.usda.gov)

U.S. Government efforts to protect human health:  
[www.avianflu.gov](http://www.avianflu.gov)

For more information about HPAI or biosecurity practices, contact:

USDA, APHIS, Veterinary Services  
National Center for Animal Health Emergency Management  
4700 River Road, Unit 41  
Riverdale, MD 20737-1231  
Telephone (301) 734-8073  
Fax (301) 734-7817

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# Highly Pathogenic Avian Influenza:

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