

Avian Influenza: Responding to Concerns About Influenza Type A Viruses

Avian influenza (AI), commonly known as “bird flu,” is caused by an influenza type A virus. Avian influenza viruses occur naturally in birds. Wild bird species (such as ducks, swans and geese) can carry the viruses but usually do not get sick from them. However, avian influenza in birds is very contagious and can make some domesticated birds (chickens, ducks, quail, pheasants, guinea fowl and turkeys) very sick or even cause death.

There are many different subtypes of influenza A viruses. These subtypes differ and are classified based on a combination of two groups of proteins on the surface of the influenza A virus: hemagglutinin or “H” proteins, of which there are 17 (H1-H17), and neuraminidase or “N” proteins, of which there are 10 (N1-N10). Many different combinations of “H” and “N” proteins are possible. Each combination is considered a different subtype, and can be further broken down into different strains.

AI viruses are further classified by their pathogenicity—the ability of a particular virus strain to produce disease in domestic chickens. Highly pathogenic avian influenza (HPAI) virus strains are extremely infectious, often fatal to domestic poultry, and can spread rapidly from flock to flock. Low pathogenicity avian influenza (LPAI) virus strains occur naturally in wild migratory waterfowl and shorebirds without causing illness.

The avian influenza viruses that cause concern in poultry and wild birds are HPAI viruses and any virus designated as H5 or H7, because H5 and H7 viruses have the capability to convert from LPAI to HPAI. They are considered notifiable avian influenza (NAI), and when found in a country, the World Organization of Animal Health (OIE) must be alerted.

Avian influenza viruses do not usually infect humans, but certain strains of AI have the potential to infect people and are referred to as “zoonotic.” If a highly pathogenic or zoonotic AI strain enters the

United States, it could have serious economic and health impacts on the poultry industry and public health.

The Asian strain of H7N9, first reported in China in spring 2013, has caused illness in people there. We have not found this Asian strain of H7N9 in the United States, but USDA's Animal and Plant Health Inspection Service (APHIS) is prepared to address any significant avian influenza found in our commercial poultry and wild birds. Our focus is on preventing, looking for, and responding to the detection of the virus in birds and poultry, with an emphasis on NAI viruses. We work collaboratively with other Government agencies, such as the Centers for Disease Control and Prevention who handle the human health impacts of avian influenza, and the Department of the Interior and state wildlife agencies who work with us on wild bird surveillance.

Since the Asian strain of H7N9 was detected only recently, we are still learning about the virus and how it behaves in both domestic and wild bird populations. At this time, we cannot determine the risk this virus poses to North America's birds, but from what we know about similar viruses and bird migratory patterns, the risk is presumed to be low. We are studying the virus to better understand how it behaves so that we can most effectively look for, and if needed, respond to a detection of this strain of H7N9.

Keeping AI Out of the U.S.

Our primary safeguard against the introduction of foreign strains of AI into U.S. poultry is through trade restrictions. Live birds, poultry and hatching eggs from countries affected by dangerous strains of AI cannot be imported into the U.S. Poultry products from affected countries are only allowed into the U.S. if the items are processed or cooked in a manner that will kill the virus.

Live birds imported into the U.S. are tested for AI and quarantined in a USDA facility for 30 days before entering the country. These measures, along with the agricultural inspections of cargo and passengers at ports of entry conducted by our partners at the Department of Homeland Security (DHS), effectively reduce the chances of dangerous strains of AI entering the U.S. USDA also works with DHS to help prevent illegal smuggling of poultry and poultry products.

To help protect birds raised by backyard and hobby owners from AI, USDA offers educational and outreach materials as part of the Biosecurity for Birds campaign. Biosecurity for the Birds materials are available at: http://www.aphis.usda.gov/animal_health/birdbiosecurity/about/downloads.htm

Looking for AI

USDA has a strong surveillance program in place, where we actively look for AI in commercial poultry and the Live Bird Market System. All commercial poultry flocks in the U.S. are tested for AI through industry, State and Federal efforts.

Wild birds are tested for influenza by USDA, in cooperation with the states and the Department of the Interior. The surveillance mostly targets the more dangerous HPAI strains, but we test for all types of AI. At this time, USDA conducts passive surveillance of wild birds, i.e. testing sick and dead birds suspected of being infected with AI.

LPPI viruses can move through wild bird flyways, but it is rare to see an Asian strain in North America. Our past research taught us a lot about the biology and timing of AI viruses in wild birds. As we learn more about this particular Asian H7N9 strain, we will continue to evaluate the risk of this virus arriving here and spreading in wild birds. Since avian migration occurs in late summer to early fall, we have more than sufficient time to adjust our wild bird surveillance activities, if it becomes necessary.

Addressing AI in the U.S.

If a HPAI or NAI virus is detected in U.S. poultry, USDA is prepared to respond. We have a detailed response plan in place to address the threat quickly and effectively.

If an HPAI infection is found in a commercial poultry flock, the flock is depopulated to prevent the spread of the virus. If a notifiable LPPI virus is detected in a commercial poultry flock, two strategies are available to manage the infection: 1) depopulation of the infected flock, or 2) controlled marketing. If the Asian strain of H7N9 is found in the U.S., since the virus can cause illness in people, we would use the depopulation strategy.

USDA eliminated NAI from the U.S. poultry population in the past, and will do so again for any future disease outbreaks. Following any outbreak, USDA would support the recovery of the poultry industry by working with foreign trading partners to reopen any lost export markets.

For More Information about Avian Influenza

USDA AI Website:

http://www.usda.gov/wps/portal/usda/usdahome?contentidonly=true&contentid=avian_influenza.html

Report Sick Farm Birds:

If your farm birds are sick or dying, call USDA's Veterinary Services toll free at 1-866-536-7593, or your State Veterinarian or local extension agent.

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.

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