

Safeguarding American Agriculture: Written Testimony

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What diseases are spread by wild birds to domestic/commercial poultry flocks?

Diseases that have been detected in wild birds with possible implications for commercial poultry flocks include Avian Influenza, West Nile Virus, Newcastle Disease, Eastern Equine Encephalitis and Avian Pox Virus; Avian Influenza and Newcastle Disease receive the most attention. While it is possible for domestic or commercial poultry flocks to become infected with viral diseases like avian influenza or Newcastle Disease from direct contact with wild birds, it is more likely these viruses are spread indirectly to poultry via contaminated feed, clothing, and equipment. Producers are encouraged to prevent wild birds and other wildlife from coming into direct contact with their poultry flocks, and to avoid transporting wild bird fecal material and secretions to poultry via boots, equipment and feed. These management practices are part of biosecurity programs that will be discussed later.

Avian Influenza

Avian Influenza (AI) is a viral infection that occurs naturally in wild birds, especially waterfowl, gulls, and shorebirds without any signs of illness. The viral infection is caused by type A influenza viruses that may give rise to 144 possible virus subtypes. Influenza viruses vary widely in their ability to cause disease and spread among birds. Many strains of influenza viruses can infect commercial poultry, but generally the viruses can be classified into two categories. Low Pathogenicity Avian Influenza (LPAI) viruses typically cause little or no clinical signs in poultry. With LPAI, the clinical signs in poultry are variable; they may appear depressed, have ruffled feathers and may be off-feed. Signs of illness may also only be expressed as reduced egg production or mild respiratory symptoms. Highly Pathogenic Avian Influenza (HPAI) can cause severe clinical signs and/or high mortality in poultry. With HPAI, clinical signs may include quietness, extreme depression and sudden drop in egg production. A few deaths may occur over several days, followed by rapid spread and a mortality rate able to approach 100% within 48 hours. H5N2 HPAI was the strain of avian influenza present in 2014-15 during the largest foreign animal disease event in U.S. history.

Newcastle Disease

Newcastle Disease (ND) is a viral infection of domestic poultry and other bird species. It is a worldwide problem that presents primarily as an acute respiratory disease, but depression, nervous manifestations, or diarrhea may be the predominant clinical form. Severity depends on the strain of the infecting virus and host susceptibility. Occurrence of the virulent form of the disease is reportable to state and federal animal health officials and may result in trade restrictions. Clinical manifestations vary from high morbidity and mortality to asymptomatic infections. Severity of

infection depends on virus virulence, as well as the age, immune status, and susceptibility of the host species. Chickens are the most susceptible and waterfowl the least susceptible of domestic poultry.

Virulent ND (vND) strains are endemic in poultry in most of Asia, Africa, and some countries of North and South America. Other countries, including the U.S. and Canada, are free of those strains in poultry and maintain their status by enforcing strict import restrictions and eradicating the disease by destroying infected poultry. In the U.S., vND is considered a Foreign Animal Disease (FAD). Occasionally, introductions of vND occur in backyard or commercial poultry flocks, such as the current situation in California in 2018-19. Smuggled poultry and psittacine species or resident cormorants or pigeons are a potential source of Newcastle Disease infections in poultry. Movement of infected domestic birds and movement of people and contaminated equipment or litter are the main methods of virus spread between poultry flocks. Besides cormorants and possibly pigeons, wild birds have not been indicated as a major threat for introduction of ND in the United States.

Vaccines for ND are available for chickens, turkeys, and pigeons, so vaccinated birds must be exposed to a larger dose of vND virus to be infected. Unfortunately, ND vaccines do not prevent all infections. In many areas of the world, vaccines are used to prevent losses from sickness and death, meaning vaccinated birds are still susceptible to vND but at a lower death rate than unvaccinated birds. Minnesota has never had a case of vND in poultry. However, a less serious form of the disease has been identified in wild waterfowl (cormorants) in the state in past years. Waterfowl have the ability to spread disease to poultry through fecal droppings and secretions of the nose, mouth and eye. As a result, poultry producers have taken additional steps to keep their birds healthy by increasing biosecurity and implementing vaccination programs. Among other measures, one of the most effective ways to protect poultry is by making sure they are separated from wild birds.

Some ND viruses can produce a transitory conjunctivitis in people, but the condition has been limited primarily to laboratory workers and vaccination teams exposed to large quantities of virus. Poultry and egg products are safe to consume.

What type of surveillance is conducted for each of these diseases in commercial poultry and wild birds, and how do agencies collaborate? How does the poultry industry, and state and federal agencies respond?

Surveillance for diseases in wildlife is usually passive, meaning state and federal wildlife agencies respond to reports of mortality events involving either dead or sick birds. For dead bird events more attention is paid to multiple birds (>5) dead at the same time and location. When wild bird mortality events occur, diagnostic testing may be pursued depending on the species involved, time of year, circumstances of the event and clinical signs observed. For the health of Minnesota poultry and wildlife, it is important that relevant government agencies maintain close communications on potential disease events. The Minnesota Department of Natural Resources (MN-DNR) staff hold positions on the Board of Animal Health's Emergency Disease Management Committee, and regularly attend quarterly Board of Animal Health meetings to collaborate on current disease events. USDA-Wildlife Services will also be involved with meetings on disease issues. Outside of those routine meetings, both agencies are at the top of emergency notifications to one another if and when diseases are detected. Because disease knows no barriers, a harmonized preparedness and response effort is Minnesota's best strategy to protect our wild and commercial populations. For example, when the MN-DNR are tracking disease in cormorants, updates on sampling and diagnostic test results are shared with animal health officials.

No active surveillance programs exist for ND in the U.S.; however, the commercial poultry industry closely monitors the effectiveness of their vaccination programs and investigates potential field exposures through diagnostic testing.

There are two surveillance programs for avian influenza with USDA oversight: the Live Bird Marketing System (LBMS) and the National Poultry Improvement Plan (NPIP)

A Live Bird Market is any facility (including botanica, poultry store, or custom slaughter) that sells live poultry for onsite slaughter or for offsite ritual use. LPAI viruses have repeatedly been isolated from the LBMS in the U.S. In order to track an introduction into the LBMS a cooperative State-Federal-Industry surveillance program was created. Details are contained in the USDA "Prevention and Control of H5 and H7 Avian Influenza in the Live Bird Marketing System – Uniform Standards for a State-Federal-Industry Cooperative Program" publication.

The National Poultry Improvement Plan (NPIP) is how much of the surveillance for avian influenza in commercial and backyard poultry is conducted. Surveillance is a cooperative, collaborative effort between the poultry industry, State Animal Health Officials (SAHO) and the federal government. The NPIP is an agency within the USDA, Animal and Plant Health Inspection Service (APHIS), Veterinary Services (VS). The NPIP is the federal government's poultry disease control program administered in cooperation with state animal health officials and poultry producers. The General Conference Committee (GCC) of the NPIP is the Official Federal Advisory Committee to the Secretary of Agriculture on matters pertaining to poultry health and includes individuals representing the U.S. poultry industry and state agencies.

The push for a national avian influenza surveillance program began in 2002 when H7N2 Low Pathogenic Avian Influenza (LPAI) was identified in North Carolina, Virginia, and West Virginia; costing producers hundreds of millions of dollars. At that time, a surveillance program was not in place to detect the potential spread of Avian Influenza (AI). In response, an LPAI program was created within the NPIP to provide an incentive for regular AI surveillance and to protect poultry producers through indemnification and compensation should H5/H7 LPAI be found. Avian Influenza remains a concern for poultry producers in the U.S. The NPIP is the only federal program responsible for H5/H7 LPAI surveillance, response, and containment activities.

Flocks identified with HPAI are fully indemnified and compensated by USDA-APHIS-VS; however, indemnity and compensation funding for H5/H7 LPAI flocks by USDA-APHIS-VS is often not certain. Disruption of this funding for H5/H7 LPAI response can result in loss of confidence and trust by the poultry industry and could potentially create a harmful impact on future responses to H5/H7 LPAI. This loss of confidence and trust discourages poultry producers (commercial, independent growers, and small flocks) from fully complying with NPIP testing programs and cooperating with state and federal regulatory authorities, potentially risking the poultry industry's significant international trade. Without dedicated funding for LPAI indemnity and compensation, there is no incentive for producers to participate in the highly successful voluntary NPIP programs.

Surveillance for influenza in poultry in the U.S. occurs on a number of different levels. All flock owners are expected to monitor their flocks for development of clinical signs suggestive of any reportable disease. In Minnesota, as in most states, influenza in poultry is a disease that is reportable to the State Animal Health Official (SAHO) or State Veterinarian. This is the first level of awareness and surveillance. When contacted, the SAHO, in conjunction with the attending poultry veterinarian or other responsible party, determines the next steps to arrive at an official flock status and response activities. Active surveillance activities for influenza are outlined in the NPIP Provisions and requires that commercial poultry flocks are tested on a routine surveillance schedule to ensure that no poultry, eggs

or egg products from infected birds enter the food chain. All testing for influenza must occur at an authorized laboratory that is approved by the state and the NPIP. Many of these laboratories are members of the National Animal Health Laboratory Network (NAHLN), which is a nationally coordinated network and partnership of Federal, State, and university-associated animal health laboratories. They provide the diagnostic services to detect high-consequence livestock pathogens.

How does biosecurity work to keep diseases out of poultry flocks?

Biosecurity is a critical component of poultry health programs designed to prevent disease transmission into or out of a poultry flock. Biosecurity programs can not only reduce the possibility of a disease introduction but can also help prevent disease transmission and spread once an introduction is identified. According to the USDA Report on the 2014–2015 Outbreak of Highly Pathogenic Avian Influenza (HPAI) in the United States, biosecurity can play an important role in stopping the spread of avian influenza in domestic poultry. The report states, “In December 2014, highly pathogenic avian influenza (HPAI) was detected in the United States for the first time in 10 years. In total, during the 2014–2015 outbreak, there were 211 detections on commercial operations and 21 detections on backyard premises (including those premises designated as a Dangerous Contact Premises). Approximately 7.4 million turkeys and 43 million egg-layers/pullet chickens, as well as a limited number of mixed poultry flocks, were affected by HPAI and died from the disease or were depopulated as part of the response. This outbreak was the largest HPAI outbreak ever recorded in the United States and arguably the most significant animal health event in U.S. history.”

The USDA report continues, “One of the greatest concerns and a probable contributing factor to the spread of HPAI was the lack of effective farm biosecurity measures. Stringent biosecurity, especially during a large-scale response, remained one of the most challenging aspects of the response effort.”

As a result of the 2014–2015 outbreak, many new biosecurity materials were developed for the poultry industry to support implementation of revised biosecurity recommendations. Expectations for preventing or reducing future introductions require increased biosecurity measures from those used prior to the outbreak in most operations. To standardize biosecurity practices and expectations, USDA APHIS published a rule: “Conditions for Payment of Highly Pathogenic Avian Influenza Indemnity Claims.” This rule clarifies an existing policy for the payment of indemnity of eggs and provides a formula for the split of indemnity between poultry/egg owners and parties with which the owners enter into contracts to raise or care for the eggs or poultry. It also requires large owners and contractors to certify that at the time of detection of HPAI in their facilities, they had in place and were following a biosecurity plan that would prevent the spread of avian influenza.

All sectors of the poultry industry recognized the need to incorporate basic biosecurity principles, and thus the National Poultry Improvement Plan (NPIP) adopted minimum management practices that all producers should be able to follow. Biosecurity measures adopted at the 2016 NPIP Biennial Conference are intended to be the basic management practices needed to prevent the introduction and spread of infectious diseases. The 14 Biosecurity Principles require poultry producers and companies to have a written biosecurity plan and a person designated as the biosecurity coordinator. Auditing of the biosecurity principles is based on flock size as outlined in 9 CFR 53.10. Audits shall be conducted at least once every two years or a sufficient number of times during that period by the Official State Agency to ensure the participant is compliant. Each audit shall evaluate the biosecurity plan’s training materials, documentation of implementation of the NPIP Biosecurity Principles and the biosecurity coordinator’s annual review for completeness and compliance with the NPIP Biosecurity Principles.

Conclusion

- The U.S. poultry industry, in cooperation with state and federal agencies, has been pro-active with its efforts to prevent another foreign animal disease (FAD) event. These activities include on-going surveillance efforts in all poultry sectors, response planning, and implementation of biosecurity programs to prevent another FAD, such as HPAI or vND. Congress should be aware that current funding has helped support these pro-active steps.
- Congressional funding to support avian disease surveillance programs, response activities and implementation of farm-level biosecurity programs at the state level is crucial to provide on-going program support.
- Maintaining appropriate staffing within the United States Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services (USDA-APHIS-VS) is essential. Currently two leadership positions within the National Poultry Improvement Plan are vacant.
- Adequate USDA resources and personnel are critical to move quickly and immediately to support SAHO efforts when a FAD such as HPAI or vND is identified.
- Funding is needed to support the USDA-APHIS VS effort to provide a stable indemnity and compensation program for H5/H7 LPAI flocks. Congressional appropriation of new, no-year, mandatory fiscal appropriations dedicated for LPAI indemnity and compensation to ensure continued participation in NPIP H5/H7LPAI programs is fundamental to the entire program.