



Preparing for the Introduction of Highly Pathogenic Avian Influenza

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Overview

The highly pathogenic avian influenza (HPAI) outbreak that started in the United States in December 2014 in commercial poultry, backyard poultry, and wild birds is unprecedented in this country. As of August 7, 2015, about 49.6 million birds have been affected on 232 premises (211 commercial and 21 backyard) in 21 states. Minnesota and Iowa have been the hardest-hit states. Current estimated economic losses are significant – \$300 million in Minnesota and \$600 million in Iowa alone. As of August 7, 2015, 121 farms have been cleaned and disinfected and 83 have been approved for restocking.

Pennsylvania must be ready in the event that HPAI is detected in the Commonwealth. An avian influenza outbreak can best be controlled if recognized early through surveillance and diagnosed quickly with immediate quarantine and depopulation of the first known infected flock. Pennsylvania took these actions in 2001, limiting the cost of that outbreak to about \$350,000, a fraction of the \$60 million cost of the previous outbreak in 1983- 84.

Penn Vet's poultry veterinarians and staff have been leaders in surveillance programs and control efforts during previous avian influenza outbreaks in the Commonwealth. Current efforts by Penn Vet personnel for HPAI are extensive and far-reaching.

Preparation

A Pennsylvania Avian Influenza Task Force was commissioned in April 2015 by the Secretary of Agriculture, Russell Redding, to prepare for the potential introduction of HPAI into Pennsylvania. Subcommittees were developed to address issues such as surveillance, disposal, cleaning and disinfection, communication, tracking and monitoring of diseased flocks and flocks under surveillance, and logistics.

Penn Vet personnel have focused on various aspects of the HPAI preparation efforts for the Commonwealth, including cleaning and disinfection, tracking and monitoring, wild bird control, outreach to small flock owners and veterinarians, and education of the public through media coverage.

Cleaning and disinfection: Penn Vet personnel continue to be leaders in the development of the best protocols for cleaning and disinfection of poultry facilities for avian influenza. We currently are updating protocols for cleaning and disinfection of poultry facilities based on previous experiences with avian influenza in the state, field work with PA producers and cleaning and disinfection companies, and lessons learned from the HPAI outbreak in other states.

Tracking and monitoring: Penn Vet assists in the tracking of infected flocks and the monitoring of flocks in the zones surrounding infected flocks.



Wild bird repellent: There are several ways infectious diseases such as HPAI are transmitted to poultry, including through other birds such as wild waterfowl, people, vehicles, or equipment/tools/supplies. Penn Vet is working in conjunction with Arkion[®] Life Sciences, a Delaware manufacturer and patent holder since 1998 of two bird repellants approved for use on Pennsylvania poultry operations. The company will be conducting a project at New Bolton Center and various poultry farms in the Commonwealth.

Outreach and Education

The Pennsylvania poultry industry has a mixed population that includes layers (~25 million), broilers (~149 million), and turkeys (~7 million) on an annual basis. In addition, other birds commonly found in Pennsylvania flocks include game birds, ducks, exhibition birds, pet birds, and backyard and pastured poultry. The small flock or backyard poultry population has increased dramatically over the last several years, but the location and number of premises is largely unknown. In addition, in many cases, small flock owners do not have information on avian influenza and how to protect their flocks. Penn Vet has several outreach initiatives for small flock owners and veterinarians who may see poultry in their practices.

Veterinarians: Monica Smetts, a third-year Penn Vet student, has called 846 veterinary offices throughout the Commonwealth. Of those practices, both for small and large animals, 139 treat poultry. The following informational handouts have been sent to those practices for their reference and for their poultry clients:

- Pennsylvania on Alert for Avian Influenza - Penn Vet
- Small Poultry Flock Management, Biosecurity, and Common Diseases - Penn Vet
- Biosecurity: Protecting Your Poultry - USDA
- Premises ID letter - Dr. Craig Shultz, Pennsylvania State Veterinarian
- Pennsylvania Premises Data Information Sheet - PDA

Feed stores: The aforementioned handouts also have been sent to and hand-delivered to local feed stores that supply feed to small flock owners. This program will be expanded to feed stores throughout the Commonwealth.

Demographics of small flocks: Monica Smetts also has been searching the Pennsylvania Animal Diagnostic Laboratory System (PADLS) database, USALIMS, for small flock owners who have sent birds or samples to PADLS for diagnostic testing. To date, about 520 flocks have been identified. This information will be added to the state database for monitoring and tracking during an avian influenza outbreak.

Penn Vet website: The Penn Vet website has been updated to include disease information on avian influenza and other diseases for many audiences, including small flock owners:

<http://www.vet.upenn.edu/avian-influenza>



Lectures and webinars: Additional outreach includes Penn Vet lectures on avian influenza at a local feed store, and national webinars with Backyard Poultry Magazine. Recently, a webinar on avian influenza was given in conjunction with the Pennsylvania Veterinary Medical Association.

Media coverage: To date, Penn Vet has been featured in more than 25 media stories about avian influenza, reaching an audience of over 138 million, at a media value of nearly \$1 million. National coverage includes Bloomberg Business News, National Public Radio, USA Today, and MSN News.

Surveillance

Penn Vet's Laboratory of Avian Medicine and Pathology provides diagnostics and surveillance for avian influenza. Surveillance includes serologic testing, virus isolation, molecular testing, necropsy examination, and field investigation of clinically affected flocks.

Since the 1983-84 HPAI outbreak, Pennsylvania has had an extensive surveillance program for avian influenza. Each year, the Pennsylvania Animal Diagnostic Laboratory System (PADLS) tests about 250,000 samples. These include blood or swabs and samples from sick or dead birds submitted for necropsy examination. As part of PADLS, Penn Vet laboratory personnel test about 70,000 samples each year for AI.

Summary

The current HPAI outbreak is economically devastating to the U.S. poultry industry and the economies of the affected states. We must continue to prepare, remain vigilant in our surveillance activities, and be ready to act when the virus is detected in the Commonwealth.

Penn Vet is dedicated to working with the poultry industry, USDA, and PDA on the Pennsylvania Avian Influenza Task Force, preparing for avian influenza, especially on outreach/education/service efforts for small flock owners, veterinarians, and the citizens of the Commonwealth of Pennsylvania.