

Surveillance - Appendix 3

Role of NJDHSS in Animal Surveillance for Novel Influenza

Overview

Avian influenza (AI), or “bird flu”, is a contagious disease of animals caused by viruses that normally infect only birds and less commonly other mammals such as pigs. Some birds, notably waterfowl, are believed to be the reservoirs of AI and can shed the virus in their feces without clinical signs of disease. Similar to the human population, each year there is a flu season affecting different birds in varying ways. AI viruses are highly species-specific but on rare occasions have crossed the species barrier to infect humans.

In domestic poultry, infection with avian influenza viruses causes two main forms of disease, distinguished by low and high extremes of virulence. The “low pathogenic” form commonly causes only mild symptoms (ruffled feathers, a drop in egg production) and may easily go undetected. The highly pathogenic form is far more dramatic causing a high mortality rate (almost 100%) in a short period of time (often less 48 hours).

The widespread persistence of high pathogenic AI in poultry populations poses two main risks for human health. The first is the risk of direct infection when the virus passes from animals to humans. While this is a rare event, disease can occur from both high and low pathogenic AI viruses. Similar to disease in animals, human infection with a low pathogenic AI virus tends to be mild. However, human infection with a high pathogenic AI virus can result in a severe infection with high fatality rate. Because of this, human infection with a high pathogenic AI virus is a concern. Of the few AI viruses that have crossed the species barrier to infect humans, high pathogenic H5N1 has caused the largest number of cases of severe disease and death in humans. Unlike normal seasonal influenza, where infection causes only mild respiratory symptoms in most people, the disease caused by H5N1 follows an unusually aggressive clinical course, with rapid deterioration and high fatality. Of these cases, there have been only a few instances of possible secondary human transmission. The second risk is that the virus will mutate into a form that is highly infectious to humans and will spread easily from person to person. Such a change could mark the start of a global pandemic.

Because of the potential threat to human health posed by outbreaks of high pathogenic AI in animals, it is important to monitor bird populations for AI in New Jersey. Surveillance for AI is a collaborative effort of local, state and federal agencies. The New Jersey Department of Agriculture (NJDA) is responsible for AI surveillance among agricultural birds (i.e., chicken, turkeys). US Department of Agriculture’s (USDA) Animal and Plant Health Inspection Service (APHIS) Wildlife Services (WS) and NJ Department of Environmental Protection (NJDEP) are responsible for AI surveillance among wildlife birds (i.e., geese, ducks). NJDHSS is responsible for AI surveillance among non-agricultural, non-wildlife birds (i.e., pet birds). Of these agencies, NJDA, WS and NJDEP play the largest role in AI surveillance. Additional information on the surveillance that is conducted by each of these agencies can be found at the websites listed in the resource section of this appendix.

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While NJDHSS plays a small role in AI surveillance, the primary role of NJDHSS is to monitor humans who may have been in contact with animals suspected of being infected with an AI virus. In order to fulfill this role, NJDHSS works closely with the other agencies involved in AI surveillance to ensure appropriate agencies are notified in a timely manner of reports regarding suspicious animals. Timely notification and investigation of suspicious animal reports will subsequently lead to timely notification to NJDHSS of any humans who may be exposed to these animals.

Objective

- To ensure responsible agencies are notified in a timely manner of suspected animal cases potentially infected with avian influenza to appropriate agencies.

Description of Methods

While the primary role of NJDHSS is not to respond to suspicious animal die offs or outbreaks of avian influenza, occasionally the public and local health agencies will contact NJDHSS to report such events. When NJDHSS receives calls from the public or local health agencies, the information is collected and forwarded to NJDEP, USDA WS, and NJDAG via email. These agencies make the determination as to whether these events need to be investigated further. Appendix 3 - Attachment A contains guidance developed by NJDHSS for local health agencies to follow with regard to animal reporting. This document will be updated and shared with stakeholders as the disease progresses in animals and recommendations change.

Resources

1. USDA's website for avian influenza:
http://www.usda.gov/wps/portal/!ut/p/s.7.0.A/7.0.1OB?navid=AVIAN_INFLUENZA
2. USDA APHIS' website for avian influenza:
http://www.aphis.usda.gov/newsroom/hot_issues/avian_influenza/avian_influenza.shtml
3. NJDAG's website for avian influenza:
http://www.nj.gov/agriculture/divisions/ah/diseases/avian_influenza.html
4. NJDEP's Division of Fish and Wildlife website: <http://www.nj.gov/dep/fgw/>
5. Interim Guidance for States Conducting Avian Mortality Surveillance for West Nile Virus (WNV) and/or Highly Pathogenic H5N1 Avian Influenza Virus. CDC, August 2006. Available at:
http://www.cdc.gov/ncidod/dvbid/westnile/resources/Interimguidance_WNV_HPAI_bird_surveillance_082206.pdf
6. Protocol for Handling Reports of Bird Mortality in NJ. NJDHSS, August 2007. Available at: http://nj.gov/health/flu/documents/db_avianinfluenza.pdf

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Avian Influenza Surveillance Memo

New Jersey Department of Health and Senior Services Protocol for Handling Reports of Bird Mortality in New Jersey

August 2007

Surveillance of dead birds, particularly crows, for west Nile virus (WNV) has proven useful for the early detection of WNV in New Jersey. Surveillance of dead birds has also proven useful for the early detection of highly pathogenic H5N1 avian influenza A in Europe. Given the potential for H5N1 to infect wild birds in North America in the future, the following guidance is offered to support avian mortality surveillance activities.

What is avian influenza?

Avian influenza (AI), or bird flu, is a virus that infects wild birds (e.g., ducks, gulls, shorebirds) and domestic poultry (e.g., chickens, turkeys, ducks, geese). There are strains of influenza virus which infect birds just as there are for humans, and as with people, some strains cause more severe illness than others.

AI strains are divided into two groups based upon the severity of disease they cause in poultry: low pathogenic avian influenza (LPAI) and highly pathogenic avian influenza (HPAI).

LPAI naturally occurs in wild birds and can spread to domestic birds. In most cases it causes no signs of infection or only minor symptoms in birds. These strains of the virus pose little threat to human health. LPAI H5 and H7 strains have the potential to mutate into HPAI and are therefore closely monitored.

HPAI is often fatal in chickens and turkeys. HPAI spreads more rapidly than LPAI and has a higher death rate in birds. These strains can pose a threat to human health, but the severity of illness in humans can vary widely. HPAI H5N1 is the type of avian influenza which is currently spreading rapidly in some parts of the world.

Avian influenza 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 in the feces of infected birds, as well as in secretions from the nose, mouth and eyes. Contact with infected fecal material is the most common cause of bird-to-bird transmission.

The HPAI H5N1 virus is not easily transmissible to humans. Most human cases have become infected as a result of extensive direct contact with infected birds, consumption of uncooked poultry products or contact with surfaces and materials contaminated with the virus. Public health concerns involve the potential for the virus to mutate, or change into a form that could spread from person to person.

What is the current status of avian influenza in the U.S. and New Jersey?

Avian influenza HPAI H5N1 has not been found in wild or domestic birds in the United States, at the current time. Nationally, avian influenza surveillance strategies have focused on the monitoring of domestic poultry and wild birds. In poultry, surveillance is conducted in three key areas: bird markets, commercial flocks, and backyard flocks. In wild birds, the focus is on migratory waterfowl, such as ducks and geese. The transmission of HPAI H5N1 to birds in the United States could occur when birds from Asia migrate to Alaska along the Asia-Pacific Flyway or through smuggling of birds or poultry products from areas where HPAI H5N1 has been detected.

Because of the potential threat to human health posed by outbreaks of HPAI in animals, it is important to monitor bird population for AI in New Jersey. Surveillance for AI is a collaborative effort of local, state and federal agencies. The New Jersey Department of Agriculture (NJDA) Division of Animal Health and United States Department of Agriculture (USDA) Animal and Plant Inspection Service (APHIS) Veterinary Services are performing AI surveillance in live bird markets, poultry auctions, and poultry flocks. The Department of Environmental Protection's Division of Fish and Wildlife (DFW) and USDA APHIS Wildlife Services (WS) perform surveillance and monitor mortality in wild bird populations of interest. These agencies are available to investigate suspicious wild bird mortality events, and are working together collaboratively to ensure early detection of H5N1 in New Jersey.

What is the role of NJDHSS and local health agencies?

The primary role of the New Jersey Department of Health and Senior Services (NJDHSS) and local health agencies with regard to AI surveillance is to monitor humans who may have been in contact with animals suspected of being infected with an AI virus. In order to fulfill this role, NJDHSS works closely with the other agencies involved in AI surveillance to ensure that the appropriate agencies are notified of reports in a timely manner regarding bird mortality events and suspicious animals. Timely notification and investigation of these reports will subsequently lead to timely notification to NJDHSS of any humans who may be exposed to these animals. NJDHSS also addresses situations of pet birds, cats and other domestic companion animals that may be infected with AI.

How should local health agencies handle reports of dead birds?

Because the public is well aware of the protocol for reporting dead birds as a surveillance tool for WNV, residents also call the NJDHSS and local health agencies to call to report dead birds for AI surveillance.

When local health agencies receive these calls, the following basic information should be recorded and evaluated: the date and location of event, species involved (or description of the birds), number of birds, condition of the birds (decomposed, freshly dead, etc.) and circumstances involved. The caller should be thanked for taking the time to make the report and in assisting us with surveillance efforts.

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All reports of sick or dead poultry should be forwarded to the NJDA at 609-292-3965 for investigation. The following situations should be reported to the NJDHSS, Infectious and Zoonotic Disease Program (IZDP), contact information below:

- all reports of mortality in waterfowl or shorebirds
- reports of mortality clusters of 5 or more dead birds at one location

Callers reporting four or less dead non-waterfowl/shorebirds at a single location should be told that this type of event is usually the result of normal bird mortality and not indicative of a disease outbreak. It should be noted that there are many natural causes of bird mortality including predation, trauma from flying into buildings, windows or motor vehicles and consuming insects contaminated with insecticides. Reassure the caller that you will record the information and notify the proper authorities if additional calls or an unusually high number of reports are received.

The NJDHSS will forward all reports of dead waterfowl/shorebirds and clusters of dead birds (5 or more) to the involved organizations (i.e., NJDEP, NJDA, and USDA) for investigation. If examination of the birds is indicated, only freshly dead birds should be collected and kept at refrigerated temperatures until they can be delivered to the laboratory for testing or examination.

What are the recommendations for handling birds?

As a general rule, the public should observe wildlife, including wild birds, from a distance. This protects them from possible exposure to pathogens and minimizes disturbance of the animals.

Thoroughly washing hands with soap and water (or with alcohol-based hand products if hands are not visibly soiled) is a very effective method for inactivating influenza viruses, including HPAI. These viruses are also inactivated with many common disinfectants such as detergents, 10% household bleach, alcohol or other commercial disinfectants. The virus is more difficult to inactivate in organic material such as feces or soil.

These guidelines are intended for persons handling individual dead birds. The risk of infection with WNV from such contact is extremely small. The risk of infection with H5N1 from handling dead birds is difficult to quantify and is likely to vary with each situation. Risk is related to the nature of the work environment, the number of birds to be collected, and the potential for aerosolization of bird feces, body fluids, or other tissues. The most important factor that will influence the degree of infection risk from handling wild birds is whether H5N1 has been reported in the area. **Note: At this time, HPAI H5N1 has not been found in wild or domestic birds in the United States.**

When collecting dead birds, the risk of infection from WNV, H5N1, or any other pathogen may be reduced by avoiding contamination of mucous membranes, eyes, and skin by material from the birds. This can be accomplished by eliminating any direct contact with dead birds via use of the following safety precautions:

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- When picking up any dead bird, wear disposable impermeable gloves and place it directly into a plastic bag. Gloves should be changed if torn or otherwise damaged. If gloves are not available, use an inverted double-plastic bag technique for picking up carcasses, or use a shovel to scoop the carcass into a plastic bag.
- In situations in which the bird carcass is in a wet environment or in other situations in which splashing or aerosolization of viral particles is likely to occur during disposal, safety goggles or glasses and a surgical mask may be worn to protect mucous membranes against splashed droplets or particles.
- Bird carcasses for disposal should be double bagged and placed in a trash receptacle that is secured from access by children and animals. If the carcass will be submitted for testing or examination, store it a cool location until pickup by or delivery to authorities. Carcasses should not be held in a household refrigerator or picnic cooler containing food.
- After handling any dead bird, avoid touching the face with gloved or unwashed hands.
- Any protective equipment that was used (e.g. gloves, safety glasses, mask) should be discarded or disinfected when done, and hands should then be washed with soap and water (or use an alcohol-based hand gel when soap and water are not available).

Persons involved in higher risk activities (e.g., collecting large numbers of dead birds or working in confined indoor spaces, particularly in an area where H5N1 has been confirmed) should take additional precautions. Contact the NJDHSS for additional recommendations.

More information on WNV bird reporting is available at:
<http://www.state.nj.us/health/cd/westnile/enceph.htm>

Contact Information for the NJDHSS, IZDP

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Ms. Lisa McHugh, Influenza Surveillance Coordinator
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During working hours (weekdays, 8:00 a.m. - 5:00 p.m.): 609-588-3121 or 7500
Nights, Weekends, and Holidays (emergencies only): 609-392-2020