

AT A GLANCE

Highly Pathogenic Avian Influenza: Infection Prevention and Control Guidance for Veterinary Clinics

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Background

Avian influenza refers to subtypes of the influenza A virus that primarily cause infections in avian species, including wild and domestic birds, with some strains occasionally affecting people, wild and domestic mammals.^{1,2} Avian influenza viruses are classified as low pathogenic or highly pathogenic, depending on the severity of illness caused in infected poultry.^{2,3} In poultry, low pathogenic avian influenza (LPAI) viruses typically cause subclinical infection or mild respiratory signs, while highly pathogenic avian influenza (HPAI) viruses cause more severe disease, including organ failure, and death.^{1,2} Wild waterfowl such as ducks, geese and swans, and shorebirds may have a range of clinical presentations, including being subclinical carriers of avian influenza viruses.¹

Backyard poultry, pet birds with outdoor access, and mammals (including livestock, cats and dogs) that come into contact with infected wild or domestic birds or their environment are at increased risk of developing HPAI infections.⁴ HPAI can be transmitted through direct or indirect contact with the feces or respiratory secretions of sick or dead wildlife.⁴ Cats, dogs and other mammals may also be exposed to the virus through hunting, scavenging or consuming infected poultry or wild birds.⁴ Animals fed a raw diet (e.g., raw or undercooked poultry or other meat, raw (unpasteurized) milk or cream) may also be at increased risk of exposure to the virus.⁵ HPAI (H5N1) has been detected in a domestic dog and several feral cats in Ontario,⁶ as well as in various wild mammal species, including foxes, raccoons and skunks.^{4,7} Although rare, transmission to humans is possible with high risk exposure (e.g. direct handling of/exposure to infected animals or their environment without appropriate personal protective equipment).⁴

This document provides information on HPAI for veterinarians and veterinary technicians working in companion animal or mobile veterinary clinics.

Clinical Signs of HPAI

Veterinary clinics should establish a screening process to identify animals that are exhibiting signs of illness compatible with HPAI, and that may have had direct or indirect exposure to birds or wildlife infected with HPAI. Following exposure to the virus, clinical signs of illness in birds typically develop within 2-14 days.² Clinical signs of HPAI infection may vary between species. Some birds and mammals may be infected without showing any signs of illness. There is limited information about the clinical course of infection in mammals.

Clinical signs of HPAI in birds (including wild birds, pet birds and backyard or commercial poultry) include:^{2,8}

- Decrease in food and/or water consumption
- Decrease in egg production
- Depression or quietness
- Diarrhea
- Breathing difficulties
- Swollen or congested wattles/combs
- Swelling of the skin under the eyes
- High mortality rate or sudden death

Clinical signs of HPAI in mammalian pets (e.g., dogs and cats) include:⁴

- Decrease in appetite
- Fever
- Lethargy
- Conjunctivitis
- Breathing difficulties
- Neurological signs (tremors, seizures)
- Sudden unexplained death

Infection Prevention and Control Recommendations

- Screen animals for clinical signs of illness compatible with HPAI, and obtain information on potential exposure to sick or deceased birds or wildlife prior to the appointment (e.g., discuss with the pet owner when booking the appointment).
- Schedule appointments for animals at increased risk of HPAI infection at the end of the day.
- If possible, examine animals with clinical signs of HPAI outside. If the animal must be brought into the clinic, take the animal directly into the examination room or isolation room upon arrival, avoiding contact with other people and animals in the building.
- Where possible, increase ventilation within the examination room by opening exterior windows, or use an air filtration device.
- Provide personal protective equipment (PPE) for all staff who may handle the animal.⁸ Recommended PPE includes a fit-tested, seal-checked N95 respirator, eye protection (e.g., unvented or indirectly vented safety goggles), gloves, hair/head covering and gown.⁸ Staff should be trained on proper donning and doffing of PPE.
- Advise pet owners experiencing signs/symptoms of influenza infection⁹ not to accompany their pet to the appointment. Recommend that asymptomatic pet owners wear a medical mask for source control while accompanying their pet.
- Perform hand hygiene before donning gloves, after removing gloves and after any contact with the animal or objects in its environment. Hand hygiene should be performed using an alcohol-based hand rub (70-90% alcohol) or, if hands are visibly soiled, using soap and water.
- Clean and disinfect the examination room and reusable medical equipment (e.g. rectal thermometer, stethoscope) after the animal leaves using a disinfectant with efficacy against influenza A.¹⁰ Follow the manufacturer's instructions for use, including concentration and contact time.
- If hospitalization is required, the animal should be isolated from all other animals (not just isolated from other animals of the same species).

- If mobile veterinary services are provided, change PPE for each client/site visit. Visit premises with domestic poultry before examining any patient with compatible signs of HPAI infection, or on a different day.

Diagnosis of Infection

Avian influenza should be suspected in animals that present with compatible signs of illness, particularly in areas where known HPAI detections have occurred,¹¹ where the animal is fed a diet that includes raw meat or unpasteurized milk, or where animals have had a high-risk exposure to potentially infected poultry, wild birds or wild mammals. Laboratory testing should be performed to confirm the presence of avian influenza virus. Active infection is typically diagnosed via isolation and identification of avian influenza virus from a tracheal or cloacal swab or fecal specimen (poultry), or through PCR testing from an oropharyngeal swab, nasal, cloacal or rectal swab (poultry, cats, dogs; as applicable).^{12,13}

Reporting of Bird or Animal Cases to Public Health

If a bird or other animal is confirmed to be infected with avian influenza or another novel influenza strain, the local Medical Officer of Health must be notified immediately.¹⁴ Laboratories in Ontario are obligated to report any such findings to both the local Medical Officer of Health and the Ontario Ministry of Agriculture, Food and Agribusiness.¹⁴

Disease Prevention

Pet owners should be educated regarding measures that can be taken to minimize the risk of their pet(s) being exposed to avian influenza. Biosecurity and other preventative measures to minimize the risk of exposure include:

- Avoid feeding cats and dogs raw or undercooked meat, including from poultry, wild or game birds.⁵
- Avoid feeding cats and dogs raw (unpasteurized) milk or cream.⁵
- Prevent cats and dogs from coming into contact with or scavenging potentially infected birds or their carcasses.⁴ This may include keeping cats indoors and ensuring dogs are kept on a leash during walks.⁴
- Keep backyard poultry and their feed or water away from wild birds.¹⁵ Clean up spilled feed and litter to avoid attracting wild birds, and store feed in sealed, waterproof containers.¹⁵
- Regularly clean backyard poultry enclosures, and feed and water containers.¹⁵
- Minimize contact between backyard poultry and other people or pets.¹⁵
- Notify a veterinarian if birds or other animals are suspected to be sick with avian influenza.¹⁰

Summary

Veterinarians should be aware of the potential for exposure of backyard poultry, as well as pets such as dogs and cats, to HPAI in Ontario and should be aware of the potential clinical signs associated with this disease, in the event that an animal presents with a compatible illness. Additionally, pet owners should be aware of actions that can be taken to minimize the risk of themselves or their pets being exposed to the virus.

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