
SUBJECT: Highly Pathogenic Avian Influenza (HPAI) H5N1
Date: April 12, 2023
Pages: 3
To: Health Care Providers, Hospitals
From: Dr. Nicola Mercer, Medical Officer of Health

- There is a global outbreak of highly pathogenic avian influenza (HPAI), subtype H5N1, that is causing large scale mortality in wild birds in Canada.
- In April 2023, Ontario had the first case of HPAI H5N1 in a domestic dog after ingesting an infected wild bird.
- The risk to the general public and pets is considered to be low.

There is a global outbreak of highly pathogenic avian influenza (HPAI), subtype H5N1, which is unparalleled in duration and size.¹ HPAI H5N1 was first identified in Canada in December 2021 and since then has been identified in every province and territory.^{2,3} With the spring migration of birds in Canada, there is an expected increase of cases of HPAI in wild birds typically recognized by significant numbers of dead or ill wild birds.

Non-avian cases of H5N1 have been reported in wild canids but are not common.⁴ The Canadian Food Inspection Agency (CFIA) National Centre for Foreign Animal Disease confirmed on April 1 that a domestic dog tested positive for avian influenza (H5N1) after chewing on a carcass of a dead wild goose.⁴ The dog developed clinical symptoms and subsequently died on April 3.⁴ This is the first case of avian influenza ever reported in a domestic dog in Canada.⁴ Samples from this dog will be genetically sequenced to review whether there have been any changes in the virus to allow it to move from birds to mammals. However, the general risk to pets is considered very low but pet owners should not allow their pets to consume dead wild birds.

While there have been cases of avian influenza transmitted to humans this has been traced to close or prolonged contact with live infected poultry or fomites contaminated with bird secretions or excretions without protective equipment. The risk to the general public is very low but the handling of sick or infected live or dead birds or potentially infected animals should be avoided. To date there have been no confirmed cases of HPAI H5N1 in humans in Canada.⁵

About H5N1 Avian Influenza

Avian influenza is caused by influenza viruses that primarily infect domestic poultry and wild birds such as geese, ducks, and shore birds. The H5N1 strain is considered highly pathogenic as it is known to cause severe illness and death in birds.¹ In Ontario, over 2022 and 2023, there have been 46 commercial poultry farms affected by H5N1.² HPAI viruses are endemic among wild bird and poultry populations in European and Asian countries.⁶

The HPAI H5N1 is distinct from the viruses that cause seasonal influenza. This strain is not easily transmitted from birds to humans with only limited non-sustained human to human transmission as humans are currently considered dead-end hosts.

Since it is possible that the HPAI H5N1 virus may mutate or combine with genetic material from human influenza viruses the World Health Organization along with many other national public health organizations have been following this issue very closely.

What Health Care Providers Need to Know

Your patients who have occupational exposure to live birds, especially poultry farms, are at risk of encountering avian influenza should the farm become infected. Most commercial poultry farms have strict infection control procedures and testing of ill birds. Smaller poultry farms or backyard chickens are also at risk but responsible individuals may not be using protective equipment. Should a local farm test positive for HPAI H5N1, all exposure individuals will be advised to self-monitor for signs and symptoms for 10 days from last exposure. The Ministry is advising individuals who work with birds and who become ill after handling birds to see their health care provider. These individuals do not have confirmed exposure to H5N1 but based on your clinical exam testing may be warranted.

Symptoms

Based on the studies of patients with the HPAI H5N1 virus signs can range from very mild to severe. The most common signs include: ⁷

- Fever
- Cough
- Sore throat
- Runny or stuffy nose
- Muscle and/or body aches
- Headaches
- Fatigue or tiredness
- Conjunctivitis (red eyes)
- Shortness of breath or difficulty breathing

Less commonly, diarrhea, nausea, vomiting or seizures can occur. Diarrhea is more common with avian influenza than with influenza due to human viruses.

Testing for Avian Influenza

The individual must have exposure to an infected bird, animal or premise and be symptomatic to be tested. Testing is not recommended for exposed individuals who do not develop symptoms.

Recommended specimen for patients being tested for avian influenza:

1. Nasopharyngeal (NP) swab

2. For hospitalized patients a bronchoalveolar lavage (BAL) or lung biopsy if available along with a viral throat swab in viral transport media should also be collected.

Use a General Test Requisition and request:

- Avian influenza
- COVID-19
- multiplex respiratory virus PCR (MRVP)

If you suspect avian influenza, contact the WDG public health unit, 1-800-265-7293 ext. 4752, and PHO Laboratory Customer Service Centre at 1-877-604-4567 prior to submitting specimens.

References:

1. Environment and Climate Change Canada. Key messages/ Q&A Avian Influenza in wild birds. April 2023.
2. Canada Food Inspection Agency. HPAI in Canada. Status of ongoing avian influenza response by province. Accessed: April 10, 2023. Available from: <https://inspection.canada.ca/animal-health/terrestrial-animals/diseases/reportable/avian-influenza/hpai-in-canada/status-of-ongoing-avian-influenza-response/eng/1640207916497/1640207916934>
3. Canadian Food Inspection Agency. Highly pathogenic Avian Influenza – wild birds dashboard. Accessed: April 10, 2023. Available from: <https://cfia-ncr.maps.arcgis.com/apps/dashboards/89c779e98cdf492c899df23e1c38fdbbc>
4. Canadian Food Inspection Agency. Domestic dog tests positive for avian influenza in Canada. April 4, 2023. Accessed: April 10, 2023. Available at: <https://www.canada.ca/en/food-inspection-agency/news/2023/04/domestic-dog-tests-positive-for-avian-influenza-in-canada.html>
5. Ontario. Ministry of Health. Highly pathogenic H5N1 Avian Influenza frequently asked questions. Accessed April 10, 2023. Available at: <https://www.health.gov.on.ca/en/pro/programs/emb/avian/faq.aspx>
6. Verhagen JH, Fouchier RAM, Lewis N. Highly pathogenic Avian Influenza viruses at the Wild-Domestic Bird Interface in Europe: Future directions for research and surveillance. Viruses. 2021;13(2):212. DOI: [10.3390/v13020212](https://doi.org/10.3390/v13020212).
7. Human health issues related to Avian Influenza in Canada, September 27, 2006. Accessed: April 6, 2023. Available at: https://www.phac-aspc.gc.ca/publicat/daio-enia/pdf/nat-ai-guide-2006_e.pdf

For more information, please contact:

Name/Title: Lilliana Marinko, Manager Infectious Diseases
Email: lilliana.marinko@wdgpublichealth.ca
Website: www.wdgpublichealth.ca