



BC Centre for Disease Control
Provincial Health Services Authority

Communicable Disease Advisory: Avian Influenza

December 2, 2022

Dear colleague,

Highly pathogenic avian influenza (HPAI), notably of the H5N1 subtype, is currently widespread among wild and domestic birds across Canada and worldwide. Cumulatively since April 2022 and as of November 28, 2022, HPAI has been detected in 57 poultry premises in British Columbia (BC). The situation is changing rapidly as about half (27) of all affected premises to date in BC have accrued in the past two weeks alone (since mid-November). Of those, all but one has been reported in the Fraser Health region where most of the provincial commercial poultry production occurs.

HPAI is associated with severe illness in birds. While HPAI does not typically infect humans, the increase in detection among birds over the last two weeks increases the potential for exposure and transmission to humans who if infected may experience symptoms of varying severity. Exposure to novel influenza viruses is concerning because of the potential for human adaptation and associated pandemic risk. Such risk may be considered a “low probability, high impact” event. This advisory provides guidance on when to suspect possible HPAI in humans along with recommendations on reporting, testing, clinical management and patient counselling.

An epidemiological summary and risk assessment are provided for further context in [Appendix 1](#). For updates to public health guidelines, please consult the [BCCDC Interim Public Health Guidelines for H5N1 Avian Influenza](#).

Clinical assessment

While animal to human transmission is rare, the possibility of avian influenza should be considered for patients **presenting with symptoms compatible with avian influenza¹ AND who have had close contact to an infected bird or animal or other exposure of concern²**. People who are in close contact with infected poultry, such as farm workers, are at risk for avian influenza.

¹ Clinical signs/symptoms: acute respiratory or influenza-like illness with one or more of cough, sore throat, fever or feverishness, rhinorrhea, fatigue, myalgia, arthralgia, headache, or conjunctivitis. May include moderate (e.g. shortness of breath, difficulty breathing, altered mental status, seizures) or severe manifestations (e.g. pneumonia, respiratory failure, acute respiratory distress syndrome, multi-organ failure, meningo-encephalitis). Gastro-intestinal symptoms may also be present. HPAI infections can also be asymptomatic and minimally symptomatic.

² HPAI transmission can potentially occur as a result of contact with infected poultry and under- or uncooked poultry products, infected wild or pet birds, manure and litter containing high concentrations of virus, contaminated surfaces, or contact with contaminated vehicles, equipment, clothing and footwear at involved sites (e.g., infected poultry farms)



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Reporting and Notification

Suspected or known human cases of HPAI are reportable in BC. Clinicians should **report any symptomatic individuals who have a known avian influenza exposure in the 10 days prior to symptom onset** to local Medical Health Officer as soon as possible. Contact information for regional public health is available in [Appendix 2](#).

Testing

Clinicians should have a low threshold for testing for possible seasonal and avian influenza virus among individuals who report sick bird or other exposures of concern and who have onset of clinically compatible symptoms within 10 days following that exposure.

When testing is indicated, a nasopharyngeal and a throat swab OR a sputum sample (for patients with a productive cough) should be collected for influenza virus testing as close to the onset of illness as possible, preferably within five days of onset. However, clinicians should have a low threshold for testing beyond this time frame as detection of avian influenza viruses can extend up to 3 weeks post-onset.

Notify the BCCDC Medical Microbiologist on-call of the suspect case and testing request at 604-661-7033. Collect the sample in viral transport medium, document the exposure on the test requisition (e.g., “human high-risk AIV”), and send directly to your local testing lab. The BCCDC Medical Microbiologist will coordinate appropriate testing with your local laboratory.

Management and Treatment

Advise symptomatic individuals who have known avian influenza exposure to isolate at home and away from others until the test results are available. Empiric treatment with antivirals (oseltamivir and zanamivir) should be considered based on an [exposure assessment](#) and patient’s risk factors for severe influenza.

Chemoprophylaxis of asymptomatic patients with known avian influenza exposure can be considered for the purposes of protecting the individual and/or preventing further transmission. It can be started up to 7 days after the last exposure. The decision to initiate post-exposure antiviral chemoprophylaxis should be made in consultation with the Medical Health Officer based on an [exposure assessment](#).

Preventative Measures and Patient Counselling Points

There are several actions that people (particularly those handling birds and/or with small flocks) can take to protect themselves and others:

- Avoid unnecessary contact with poultry and wild birds, especially if they are sick, dead or displaying unusual behaviours.
- Avoid contact with surfaces contaminated with bird droppings or secretions.
- Ensure eggs and poultry dishes are well cooked.
- Boil any untreated water from areas where waterfowl gather (ponds, lakes, rivers) prior to consumption.



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- Get an annual flu shot. Per routine [Seasonal Influenza Vaccine Eligibility](#), people working with live poultry are recommended influenza vaccine to reduce the potential for human influenza and avian influenza virus coinfection and gene reassortment.
- Follow all general public health recommendations to prevent infection such as covering your cough, frequent hand washing with soap and water and staying home when you are sick.

Additional resources

For more information, please see:

- Public health clinical guidance: Refer to [BCCDC Interim Public Health Guidelines for H5N1 Avian Influenza Outbreak](#)
- BC reportable disease regulations: [Reporting Information Affecting Public Health Regulation](#)
- Information on human infections: Refer to the [BC Centre for Disease Control's Emerging Respiratory Virus updates](#) and [Avian Influenza](#) webpages, and the [World Health Organization's Weekly Updates](#)
- Updates on transmission in birds: Refer to the [Canadian Food Inspection Agency](#) and [Government of BC](#) websites
- Infection prevention and control recommendations for healthcare settings: Refer to [Provincial Infection Control Network of British Columbia \(PICNet\)](#).
- Prevention and detection of disease in small flocks and birds: refer to the [Government of Canada](#) and [Government of BC](#) websites
- BC Ministry of Agriculture. [Avian Influenza](#)
- WorkSafe BC: [Avian Influenza controls in the workplace](#)
- CDC: [Global Human Cases](#) of Highly Pathogenic Avian Influenza A (H5N1)
- UK Health Security Agency: [Technical Risk Assessment](#)
- WHO: [Avian Influenza – Spain](#)



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Appendix 1 : Epidemiological summary and risk assessment

Highly pathogenic avian influenza (HPAI) is currently widespread across the globe. Europe³ and North America^{4,5,6,7} have ongoing epizootics in 2021-2022, which are affecting domestic and wild birds, with spill over into other animals (Figure 1). Both North America and Europe are experiencing the largest epidemics of HPAI on record, with the H5N1 subtype now accounting for nearly all of the detections.

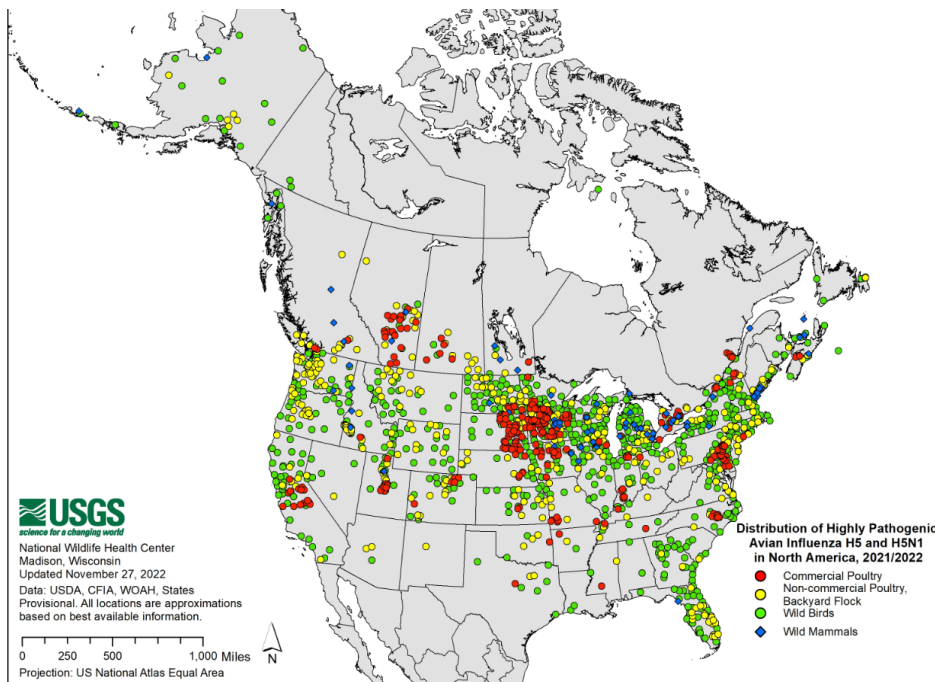


Figure 1: Distribution of Highly Pathogenic Avian Influenza H5 and H5N1 in North America, 2021/2022. Source: <https://www.usgs.gov/media/images/distribution-highly-pathogenic-avian-influenza-h5-and-h5n1-north-america-20212022>

In Canada, the HPAI epizootic began in Newfoundland when the first infected poultry premise was detected in December 2021. As of November 28, 2022, there have been 239 HPAI detections (all H5N1) on Canadian domestic poultry premises (commercial and small flock). Over 3,792,000 domestic birds have died or been culled since the beginning of the outbreak. There are now 113 premises in Canada that remain under active animal health control orders, with 126 premises now released from control orders.

³ [Avian influenza overview June – September 2022 \(wiley.com\)](https://www.wiley.com)

⁴ [Status of ongoing avian influenza response by province - Canadian Food Inspection Agency \(canada.ca\)](https://www.canada.ca)

⁵ [National Avian Influenza - Wild Positives \(arcgis.com\)](https://www.arcgis.com)

⁶ [USDA APHIS | 2022 Confirmations of Highly Pathogenic Avian Influenza in Commercial and Backyard Flocks](https://www.usda.gov)

⁷ [Distribution of Highly Pathogenic Avian Influenza H5 and H5N1 in North America, 2021/2022 | U.S. Geological Survey \(usgs.gov\)](https://www.usgs.gov)



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In British Columbia, the situation is changing rapidly. Cumulatively since April 2022 and as of November 28, 2022, HPAI has been detected in 57 poultry premises overall (Figure 2). About half of all affected premises have accrued in the past two weeks alone with 27 reported since November 15, 2022 of which 19 (70%) have been commercial operations and all but one has been reported in the Fraser Health region, where most of the provincial commercial poultry production occurs.

There are currently (Nov 28 2022) 38 premises in BC under active animal health control orders². Western Canadian provinces have the highest proportion (79.5%) of currently infected premises compared to Central (20.3%) and Eastern (0%) Canada. Among all Canadian provinces, BC has the most premises considered currently active (33.5%) with more than 428,600 domestic birds having died or been culled between the start of the epizootic in April 2022 to November 28, 2022. There are significant mental health implications for poultry producers and allied industries; especially individuals that are still in recovery from the 2021 flood in the Fraser Valley.

In wildlife, there have been 1,444 detections of HPAI (all H5N1) nationally as of November 28, 2022, with 144 detections in BC wildlife. Surveillance in wildlife is passive and therefore significantly underestimates the burden of HPAI in wildlife. Genomic surveillance of avian influenza from wild animals in Canada show several H5N1 lineages that are either entirely Eurasian or re-assortments that are a combination of European and North American lineages, which is indicative of the intermixing that occurs in bird populations at broad geographic scales. This, in turn, creates opportunities for wild birds to introduce new lineages to domestic birds.³ Waterfowl are the natural reservoir of avian influenza viruses; however there have been unprecedented HPAI detections in other animals such as raptors and shorebirds and mammals (e.g., foxes and skunks) in BC and elsewhere across North America associated with this H5N1 subtype. The implications for mammalian adaptation, including for humans, warrants ongoing monitoring.



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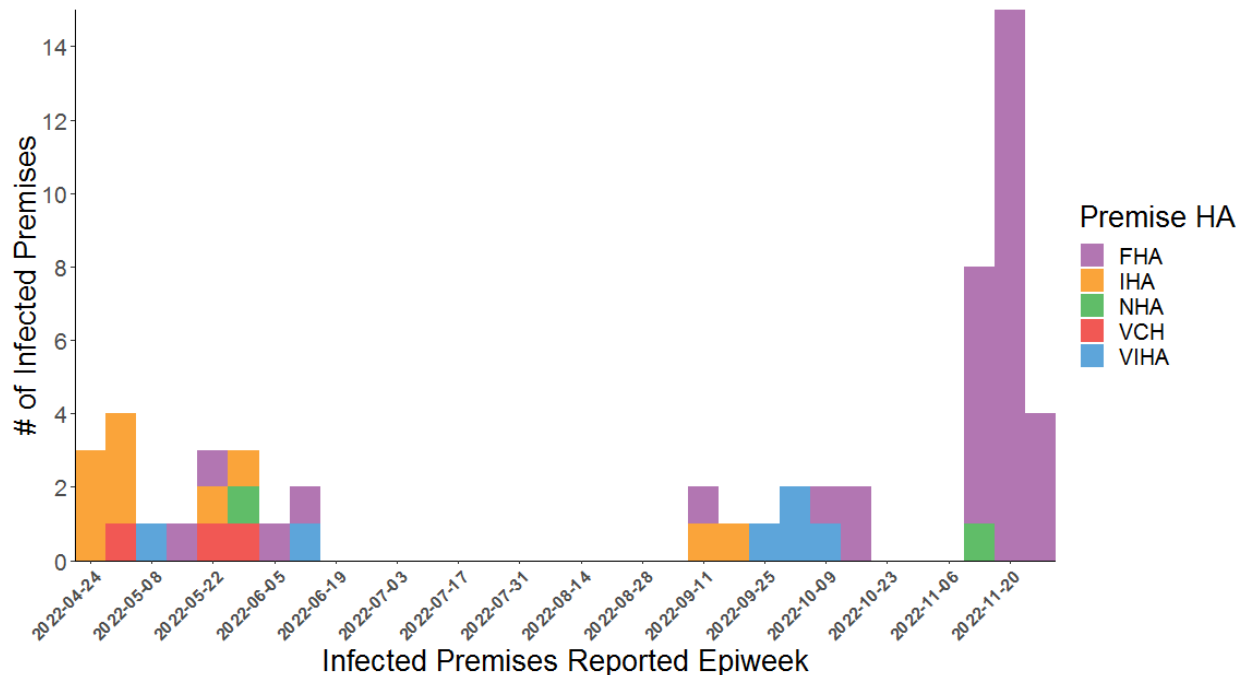


Figure 2. Number of reported infected premises in BC by Health Authority and epi-week of 2022

Risk assessment

Avian influenza A viruses typically do not infect people but can potentially occur as a result of close contact with infected poultry and under- or uncooked poultry products, infected wild or pet birds, manure and litter containing high concentrations of virus, contaminated surfaces, or contact with contaminated vehicles, equipment, clothing and footwear at involved sites (e.g., infected poultry farms). Direct contamination of the mucous membranes by infectious droplets or inhalation of aerosolized viruses are other possible transmission routes. Sustained human-to-human transmission of avian influenza viruses has not been established.

To date, a total of four human cases have been reported in Europe and North America associated with the current H5N1 HPAI epi-zootic, including one each in the United Kingdom (December 2021) and the United States (April 2022) and two in Spain (September and October 2022). All had close contact with infected birds and all had mild or asymptomatic infection.

Exposure to novel influenza viruses is concerning because of the potential for human adaptation and associated pandemic risk. Such risk may be considered a “low probability, high impact” event. Prudence requires that exposures to potentially infected animals be minimized, that the risk of acquiring infection be mitigated, and that monitoring be undertaken to ensure timely identification and isolation of human cases and the collection of critical information to inform real-time risk assessment.



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Appendix 2: Regional Public Health Contact Information (for health professionals only)

- Fraser Health:
 - Business hours: 604-507-5471
 - After hours: 604-527-4806
- Interior Health
 - Business hours: 1-866-778-7736
 - After hours: 1-866-457-5648
- Island Health:
 - South Island: 1-866-665-6626
 - Central Island: 1-866-770-7798
 - North Island: 1-877-887-8835
- Northern Health:
 - Business hours: 250-645-3794
 - After business hours: 250-565-2000, press 7, ask for the MHO on call
- Vancouver Coastal Health:
 - Business hours: 604-675-3900
 - After business hours: 604-527-4893