

# Communicable Disease Advisory: Avian influenza A(H5N1)

Date: June 6, 2024

## Key Messages:

- Infected dairy cows and their raw milk are newly recognized potential sources of avian influenza A(H5N1) exposure to people, although there have been no detections of H5N1 in dairy cows or retail milk in BC and Canada to date.
- As we are outside of our typical respiratory illness season, clinicians should maintain an index of suspicion for avian influenza testing in people presenting with conjunctivitis and/or influenza-like illness symptoms AND bird/animal exposures, particularly those who are occupationally exposed.
- A conjunctival swab should be taken in addition to nasopharyngeal and throat swabs for persons presenting with conjunctivitis and a compatible exposure history.

Dear colleague,

Avian influenza A(H5N1) has been circulating widely among wild and domestic birds across Canada and globally since late 2021, with spillover infections in an increasing number of mammalian species. Currently, H5N1 is causing outbreaks among dairy cows across several states in the US, with 81 herds affected in 9 states as of June 4, 2024 (1). H5N1 has been detected at high viral loads in mammary tissue and milk of infected cows (2). No live virus has been isolated from pasteurized milk in studies to date (3).

At least 390 people have been monitored and 44 tested following exposures to the dairy farm outbreaks in the US (4). Three cases have been identified among exposed dairy farm workers, two of who presented with conjunctivitis only and recovered. The third case presented with influenza-like illness symptoms in addition to conjunctivitis. Of note, the second case was confirmed via a conjunctival specimen, whereas nasal swabs were negative. Lack of full personal protective equipment (PPE) was noted in two of the cases; these details are unknown for the other case (5,6).

Influenza viruses are highly changeable, and the potential for genetic reassortment between avian and human-adapted influenza viruses presents pandemic risks. The widespread infections among cows, a

mammalian species previously not known to be at risk of H5N1 infection, as well as evidence of transmissions between mammals underscores the importance of minimizing exposures among people (and other mammalian species) and the need to promptly detect any human infections.

**Currently, BC is outside of its typical respiratory illness season; people presenting with influenza-like illness symptoms should also be assessed for exposure to sick or dead birds or other animals, or environments heavily contaminated by them.** Further, health professionals should be aware of potential sources of exposure to avian influenza viruses and groups at higher risk of exposure, i.e., those who interact with poultry, wild birds or other susceptible animals.

In response to the H5N1 outbreaks among dairy cows in the US, Canada has implemented additional requirements for importing lactating dairy cows from the US (7). In BC, the Canadian Food Inspection Agency together with the Ministry of Agriculture and Food (MAF) are the lead agencies for responding to H5N1 in livestock. MAF and BCCDC are coordinating preparedness activities related to public health and the dairy industry. There have been no H5N1 detections among dairy cows or sampled retail milk to date in BC or Canada (8).

## Clinical assessment

Consider the diagnosis of avian influenza in persons presenting with conjunctivitis and/or influenza-like illness symptoms occurring within 10 days of close contact with a sick or dead bird or animal or other exposure of concern. People who are in close contact with infected poultry or other animals, such as farm workers, are at higher risk for avian influenza.

Potential exposures of concern include:

- Touching, handling, culling, slaughtering, defeathering or being in the same closed airspace as infected birds or other animals;
- Consuming under- or uncooked poultry or egg products or unpasteurized (raw) milk or other unpasteurized dairy products from infected animals;
- Contact with water or surfaces contaminated with feces, secretions (including raw milk) or parts (e.g., carcasses, organs) from infected birds or other animals;
- Laboratory exposure to the virus;
- Visiting a live poultry market with confirmed bird infections or associated with a case of human infection; and
- Close contact with a probable or confirmed human case.

## Testing

For ALL suspect cases and test requests for avian influenza, consult the BCCDC Public Health Laboratory Medical Microbiologist at 604-661-7033.

Collect both a nasopharyngeal swab and throat swab for optimal diagnostic yield. Also collect a conjunctival swab for persons presenting with conjunctivitis; as demonstrated by one of the dairy worker cases in the US, cases presenting with conjunctivitis may be missed with other specimens. More guidance on testing is available on the [eLab Handbook](#).

## Reporting to public health

**Clinicians must notify their local Medical Health Officer of suspect cases and test requests to facilitate timely public health follow-up.** Prompt communication across the health system supports the ongoing global risk assessment and preparedness against novel influenza viruses. [Appendix 1](#) is a list of local public health contact information.

## Infection prevention and control

Have the patient wear a medical mask and implement droplet and contact precautions. Where possible, place the patient in a single/private room with door closed. Conduct a point-of-care risk assessment to determine the need for additional PPE. See [PICNet guidance](#) for more details. Persons being assessed for avian influenza infection should be advised to isolate at home away from household members and not go to work or school until the diagnosis is ruled out.

## Management and treatment

Oseltamivir or zanamivir can reduce the duration and severity of illness if administered within 48 hours of illness onset. Empiric treatment with antivirals (oseltamivir and zanamivir) should be considered based on an exposure assessment and patient's risk factors for severe influenza. At clinical discretion, treatment may also be considered after 48 hours.

Consider chemoprophylaxis of asymptomatic patients with known avian influenza exposure, in consultation with the Medical Health Officer based on exposure assessment. It can be started up to 7 days after the last exposure.

## Prevention and patient counselling points

There are several actions that people (particularly those handling birds and animals) can take to protect themselves and others:

- Avoid unnecessary contact with poultry and wild birds and animals, especially if they are sick, dead, or displaying unusual behaviours.
- Avoid unprotected contact with surfaces contaminated with bird droppings or secretions, or raw milk.
- Follow workplace health guidance related to avian influenza prevention.
- Ensure eggs and poultry dishes are well cooked.
- Avoid consuming unpasteurized milk or unpasteurized milk products.
- Boil any untreated water from areas where waterfowl gather (ponds, lakes, rivers) prior to consumption.
- Get the annual seasonal influenza vaccine. This helps reduce the potential for human and avian influenza viruses to exchange genetic material.
- Cover your cough, wash your hands frequently with soap and water, and stay home when sick.

## Additional resources

- BC Centre for Disease Control's [Interim Public Health Guidelines for H5N1 Avian Influenza Outbreak](#)
- BC Ministry of Agriculture and Food's [BC wildlife Highly Pathogenic Avian Influenza \(HPAI\) dashboard](#)
- Canadian Food Inspection Agency's [Highly Pathogenic Avian Influenza \(HPAI\) Dashboard in Domestic Birds](#)
- Food and Agriculture Organization of the United Nations' [Global Avian Influenza Viruses with Zoonotic Potential situation update](#)
- Public Health Agency of Canada's webpage on [Avian influenza A\(H5N1\): Prevention and risks](#)
- Public Health Agency of Canada's [Guidance on human health issues related to avian influenza in Canada \(HHA1\)](#)
- Public Health Agency of Canada's [Human Emerging Respiratory Pathogens Bulletin](#)

## References

1. Centers for Disease Control and Prevention. Current H5N1 Bird Flu Situation in Dairy Cows [Internet]. Centers for Disease Control and Prevention; 2024 June. Available from: <https://www.cdc.gov/flu/avianflu/mammals.htm>.
2. Burrough ER, Magstadt DR, Petersen B, Timmermans SJ, Gauger PC, Zhang J, Siepker C, Mainenti M, Li G, Thompson AC, Gorden PJ. Highly Pathogenic Avian Influenza A (H5N1) Clade 2.3. 4.4 b Virus Infection in Domestic Dairy Cattle and Cats, United States, 2024. *Emerging infectious diseases*. 2024 Apr 29;30(7). Available from: <https://doi.org/10.3201/eid3007.240508>.
3. U.S. Food and Drug Administration. Updates on Highly Pathogenic Avian Influenza (HPAI) [Internet]. U.S. Food and Drug Administration; 2024 May. Available from: <https://www.fda.gov/food/alerts-advisories-safety-information/updates-highly-pathogenic-avian-influenza-hpai>.
4. Centers for Disease Control and Prevention. How CDC is monitoring influenza data to better understand the current avian influenza A (H5N1) situation in people [Internet]. Centers for Disease Control and Prevention; 2024 May. Available from: <https://www.cdc.gov/flu/avianflu/h5-monitoring.html>.
5. Uyeki TM, Milton S, Abdul Hamid C, Reinoso Webb C, Presley SM, Shetty V, Rollo SN, Martinez DL, Rai S, Gonzales ER, Kniss KL. Highly pathogenic avian influenza A (H5N1) virus infection in a dairy farm worker. *New England Journal of Medicine*. 2024 May 3. Available from: <https://doi.org/10.1056/NEJMc2405371>.
6. Centers for Disease Control and Prevention. CDC Confirms Second Human H5 Bird Flu Case in Michigan; Third Case Tied to Dairy Outbreak [Internet]. Centers for Disease Control and Prevention; 2024 May. Available from: <https://www.cdc.gov/media/releases/2024/p0530-h5-human-case-michigan.html>.
7. Canadian Food Inspection Agency. Notice to industry: Highly pathogenic avian influenza (HPAI or H5N1) in dairy cattle in the USA - Addendum to export certificate [Internet]. Ottawa: Canadian Food Inspection Agency; 2024 May. Available from: <https://inspection.canada.ca/en/animal-health/terrestrial-animals/diseases/reportable/avian-influenza/latest-bird-flu-situation/notice-industry-2024-04-30>.
8. Canadian Food Inspection Agency. Highly pathogenic avian influenza (HPAI) in livestock [Internet]. Ottawa: Canadian Food Inspection Agency; 2024 May. Available from: <https://inspection.canada.ca/en/animal-health/terrestrial-animals/diseases/reportable/avian-influenza/latest-bird-flu-situation/hpai-livestock>.

## Appendix 1

### 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