Manitoba
Health, Seniors and Long-Term Care

Interim Public Health Guidelines for H5N1 Avian Influenza

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SUMMARY OF UPDATES

November 2023

The updated Public Health Agency of Canada Guidance on human health issues related to avian influenza in Canada (HHAI) resulted in changes from the previous version of these guidelines (2022). Sections on chemoprophylaxis recommendations have been revised to align with current practice recommendations and now reflect the current goals and expectations for case and contact management.

Amendments that may result in a change in practice:
https://www.gov.mb.ca/health/publichealth/environmentalhealth/docs/avian_contact_letter.pdf

SITUATION

The purpose of this document is to provide public health officials with guidance on the management of human exposures to avian influenza in birds or animals or suspected human cases of avian influenza, specific to the currently circulating avian influenza H5N1 strain.

The guidance is based on the national document – Guidance on human health issues related to avian influenza in Canada (HHAI) at https://www.canada.ca/en/public-health/services/publications/diseases-conditions/guidance-human-health-issues-avian-influenza.html, and updated to reflect guidance on the current circulating strains. This guidance will be modified and updated as the situation or the virus evolves.

BACKGROUND

Avian influenza is an infectious disease of birds caused by type A strains of influenza virus, and is transmissible between all species of birds. The diagnosis of avian influenza must be made on the basis of laboratory confirmation.

Avian influenza A viruses are designated as highly pathogenic avian influenza (HPAI) or low pathogenicity avian influenza (LPAI) based on molecular characteristics of the virus and the ability of the virus to cause disease and mortality in birds. However, the severity of the illness in birds (i.e. whether the avian influenza virus is considered LPAI or HPAI) does not predict severity in humans. Both HPAI and LPAI strains have the potential to cause serious illness in humans. The risk to humans varies by strain type, and thus the outbreak response will vary depending on the circulating strain.

IMPACT OF AVIAN INFLUENZA ON HUMAN HEALTH

Significant risks to human health from avian influenza include:

- Human infection with the avian influenza virus: Although avian (bird) influenza (flu) A viruses usually do not infect people, rare cases of human infection occur with these viruses. Illness in humans range in severity from no symptoms or mild illness to severe disease resulting in death. Human infections with avian influenza rarely spread to other people.
- Emergence of a new strain of type A influenza: Concurrent infection with avian influenza and human influenza in a human host may provide an opportunity for genetic mutation or viral reassortment. This may result in the emergence of a new strain of influenza with the risk for a new global pandemic.

HUMAN CASE DEFINITIONS

Suspect case

An individual with onset of two or more of the following: Conjunctivitis and/or influenza-like illness symptoms (see section 3.5) with onset 24 hrs to 7 days after initial exposure not otherwise attributed to other known etiology.

Confirmed Case

An individual that meets the criteria of a suspect case and has a lab confirmed influenza A (avian influenza strain) infection. Conjunctival, nasal, nasopharyngeal or serologic specimens must be confirmed by at least of the following tests:

1) Virus isolation in cell culture

2) RT-PCR (confirmed by another RT-PCR test on a second specimen sample)

3) Evidence of sero-conversion from acute and convalescent

Primary case

An individual with direct contact with an infected animal, poultry product or contaminated items.

Secondary case

An individual with direct contact to a human avian influenza confirmed/suspect/atypical case.

Asymptomatic (atypical infection) case

An individual exposed to avian influenza, with the absence of clinical symptoms or whose symptoms do not meet avian influenza infection criteria where a lab confirmed influenza A infection has been documented.

Provincial/Territorial public health authorities should report confirmed and probable human cases of H5N1 nationally within 24 hours of their own notification as per the Emerging respiratory pathogens and Severe Acute Respiratory Infection (SARI) case report form: https://www.canada.ca/en/public-health/services/emerging-respiratory-pathogens/coronavirus/emerging-respiratory-pathogens-severe-acute-respiratory-infection-sari-case-report-form.html.

TRANSMISSION TO THE HUMAN POPULATION

Potential sources include:

- Infected poultry;
- Under- or uncooked products from infected birds;
- Infected wild or pet birds;
- Other infected animals (e.g. Pigs);
- Manure and litter containing high concentrations of virus;
- Contaminated surfaces;
- Contaminated vehicles, equipment, clothing and footwear at involved sites (e.g., infected poultry farms);
- Contaminated air space (e.g. A barn when movement of birds or manure may have resulted in aerosolization of the virus), OR

- Individuals known to be infected with an avian influenza virus.

Avian influenza viruses are usually not spread from an infected person to close contacts, and when it has happened, it has only spread to a few people. However, because of the possibility that the virus could change and gain the ability to spread easily between people, monitoring for human infection and person-to-person spread is extremely important for public health.

INCUBATION PERIOD

Available data suggest that the estimated incubation period for human infection with avian influenza A(H5N1) and A(H7N9) viruses is generally 2 to 5 days, but has been reported to be 7-10 days.

In poultry, it can be a few hours to a few days in individual birds, and up to 2 weeks in the overall flock.

A 21-day incubation period, which takes into account the transmission dynamics of the virus, is used for bird populations in the context of disease control.

COMMUNICABILITY

Limited human-to-human transmission has been reported for avian influenza viruses. Transmission probably occurred during close unprotected contact with a severely ill patient.

SIGNS AND SYMPTOMS

Symptoms of avian influenza in humans may range from no symptoms or mild illness to severe.

Influenza-like illness, signs and symptoms include:

- Fever;
- Cough;
- Rhinorrhea;
- Sore throat;
- Myalgia/arthralgia;
- Headache;
- Conjunctivitis symptoms including redness to sclera, eyelid/conjunctival inflammation, excessive tearing, pruritis, eye pain/burning, discharge, photosensitivity;
- GI symptoms including abdominal pain, nausea, diarrhea, vomiting;
- Respiratory complications- including shortness of breath, chest pain, symptoms of pneumonia, and respiratory distress.

RESPONSE TO AVIAN INFLUENZA IN BIRDS

Public health notification: In Canada, HPAI (all strains) and LPAI (H5 and H7 strains) are considered Notifiable Avian Influenza, and must be reported to CFIA under the Health of Animals Act.

The Office of the Chief Medical Officer of Health will be notified by the Office of the Chief Veterinarian, Animal Health and Welfare Branch of Manitoba Agriculture when avian influenza infection is confirmed in avian/animal source within the province of Manitoba.

In responding to avian influenza outbreaks, Public Health will work closely with the Department of Agriculture, the Canadian Food Inspection Agency (CFIA), and the poultry industry to coordinate an inter-agency response to an avian influenza outbreak. Depending on the strain of avian influenza involved, animal health response activities may differ from outbreak to outbreak.

The CFIA is the lead agency for the animal health response for domestic flocks infected with H5 or H7 LPAI or HPAI. The CFIA responds to avian influenza outbreaks by establishing quarantines, ordering the humane destruction of all infected and exposed poultry, conducting trace-out activities, overseeing the cleaning and disinfection of premises, and verifying that affected farms remain free of avian influenza according to international standards.

Upon notification of an avian influenza outbreak with human health implications, public health officials should implement appropriate public health measures, which may require a response on evenings and weekends. Primary prevention (including infection control and antiviral prophylaxis), case and contact management, risk assessment and public education should be a top priority.

The current circulating H5N1 bird flu viruses were first identified in Europe during the fall of 2020 and spread across Europe and into Africa, the Middle East and Asia, becoming the predominant subtype globally by fall of 2021. Current H5N1 bird flu viruses detected during late 2021 and 2022 are different from earlier H5N1 bird flu viruses, and lack changes seen in the past that have been associated with viruses spreading easily among poultry, infecting people more easily, and causing severe illness in people. Cases of human infection generally occur following close contact with sick or dead domestic poultry at locations where on-farm biosecurity measures are non-existent or less stringent (e.g., in a live bird market or backyard flocks). In general, AI infections in humans are rare events and the likelihood of human infection with AI virus is low; however, individuals should remain cautious and adhere to recommended public health measures. Further information is available at:

- https://inspection.canada.ca/animal-health/terrestrial-animals/diseases/reportable/avian-influenza/eng/1323990856863/1323991018946
- https://www.cdc.gov/flu/avianflu/avian-in-birds.htm

MANAGEMENT OF EXPOSURE TO AN AVIAN SOURCE (CONTACT TO AN ANIMAL/AVIAN SOURCE)

Definition of contact to an animal/avian source

An asymptomatic individual that has been exposed to avian influenza through direct contact with a known/suspected animal/avian case or an environment/objects known to be associated with a suspect/known avian influenza outbreak.

Human Exposure (Contact) Management

Public health should obtain a list of all human exposures and individuals entering an infected commercial poultry premises in the 21-day period prior to the onset of clinical signs in the birds.

Public health Follow-up

- Provide instructions to self-monitor for the development of symptoms for 10 days after the last exposure to a known or suspected source of avian influenza virus, and report any symptom development immediately to public health.
- Public health may decide on active daily monitoring depending on:
    - The epidemiology of the outbreak (e.g., if the avian virus is highly pathogenic or is currently or previously known to cause severe illness in humans);
    - If there was a significant delay in the implementation of control measures;
    - Familiarity with the strain causing the outbreak, and
    - Level of confidence that public health recommendations are being followed.
- As an alternative to active daily monitoring, contacts may be instructed to self-monitor for symptoms, and may include a follow-up call from public health at the end of the monitoring period.
- For the current H5N1 outbreak, with low risk of transmission, contacts can be instructed to self-monitor for symptoms with clear guidance on who to contact if symptoms develop.
- Offer testing if Influenza-like Illness (ILI) symptoms develop in the 10 days following exposure. Any exposed person who has any new illness symptoms, particularly fever or feeling feverish or any respiratory symptoms should be referred for prompt medical evaluation, antiviral treatment, and testing for avian influenza A virus infection. If HPAI infection is suspected, antiviral treatment (i.e. oseltamivir) should be provided without delay; waiting for lab confirmation is not recommended (see below section on antivirals). If laboratory testing is negative for influenza virus, treatment can be stopped.
- Antivirals should be readily available for the treatment of suspected and confirmed cases. Antiviral drugs such as Oseltamivir or Zamanavir can reduce the duration of illness and improve the prospect of survival if administered within 48 hours of illness onset.
- For the current H5N1 outbreak, with low risk of transmission, all persons exposed to infected birds or virus-contaminated environments, should be monitored for illness for 10 days after their last exposure.
- Post-exposure antiviral prophylaxis may be considered based on risk assessment for the purposes of protecting the individual and/or preventing further transmission.
- Place in isolation suspected cases and manage them according to recommended procedures for infection control;
- Offer immunization with the current human influenza vaccine if they have not received it;
    - If human influenza is circulating in the community at the same time as avian influenza, human influenza immunization is recommended for all contacts to an animal or human case.
- Provide advice on minimizing further exposure. Those involved in the care, culling or cleaning up of infected birds or their environments should wear personal protective equipment
- Provide advice on restriction of movement of contacts -this includes recommendations not to visit other farms, to avoid serving as a vehicle for the spread of contaminated materials.

- More strict quarantine measures would be considered if the outbreak involved a virus that was causing severe illness in humans or there was evidence that it could be spread efficiently from person to person.

Management of Symptomatic Exposed Individuals

- Those who develop symptoms should isolate immediately and have testing done as soon as possible with appropriate IPC precautions for both influenza and COVID-19.
- The sample should be flagged for CPL as a sample from someone with known avian influenza exposure – document the exposure on the test requisition.
- The person should be advised on appropriate isolation protocols, to stay away from others for seven days or until symptoms resolve, whichever is longer. If household contacts develop symptoms before test results are available, they should also isolate and public health should be notified.
- All health care providers should report any symptomatic people who have known avian influenza exposure in the 10 days prior to symptom onset by completing a clinical notification form. https://www.gov.mb.ca/health/publichealth/cdc/protocol/mhsu_0013.pdf
- The person should be assessed by a health care provider to determine the need for Oseltamivir treatment. If the exposed person becomes symptomatic and HPAI infection is suspected, Oseltamivir should be provided without delay. Waiting for lab confirmation is not recommended.
- If the test is negative for influenza, isolate until symptoms resolve if COVID-19 negative. If COVID-19 positive, follow COVID-19 isolation recommendations.
- If the test is positive for influenza, sub-typing will need to be done. The person should be advised of a preliminary positive influenza result, but further analysis is required to determine the sub-type of influenza. Since seasonal influenza virus may also be circulating, sub-typing is necessary before avian influenza can be confirmed. Isolation protocols should be reinforced.
- Active daily follow up of the case should be done following symptom onset.
- If this is a confirmed case of avian influenza, additional follow up will be required to identify exposures, risk factors, and follow-up of contacts.

Exposure Assessment and Antiviral Prophylaxis

Chemoprophylaxis with influenza antiviral medications can be considered for exposed persons for the purposes of protecting the individual and/or preventing further transmission. It can be started up to 7 days after the last exposure. Decisions to initiate post-exposure antiviral chemoprophylaxis should be based on clinical judgment, with consideration given to the type of exposure (e.g. without use of respiratory and eye protection), type and duration of exposure, time since exposure, known infection status of the birds the person was exposed to, and to whether the exposed person is at higher risk for complications from influenza.

Note: The World Health Organization (WHO) has stratified exposure risk into three categories; low, medium and high. Assess the risk of infection based on the level of exposure a contact has had to the avian influenza virus and determine when antiviral prophylaxis and influenza immunizations should be offered. Further information is available in the national document –

Guidance on human health issues related to avian influenza in Canada (HHAI) https://www.canada.ca/en/public-health/services/publications/diseases-conditions/guidance-human-health-issues-avian-influenza.html.

If post-exposure antiviral chemoprophylaxis is initiated, treatment dosing for the neuraminidase inhibitors i.e. oseltamivir or zanamivir (twice daily dosing) has been recommended instead of the typical antiviral chemoprophylaxis regimen (once daily). Prophylaxis should be provided for 7 days for time-limited exposures and up to 10 days for ongoing exposures.

Pre-exposure prophylaxis (PrEP) is not a routinely recommended approach as infection control practices, such as PPE and biosecurity are effective measures in prevention. However PrEP may be considered on a case by case basis when the subtype is known to cause severe human illness in consideration with any specific risk factors. PrEP dosing is the same as treatment dosing, twice daily of oseltamivir, but required duration needs to be individually considered.

TESTING

Nucleic acid and amplification testing (NAAT) in the primary method used to confirm infection with Influenza A. Infection may also be confirmed by isolation of influenza virus by cell culture and/or by identification of viral antigens. When testing is indicated, specimens should be collected as close to the onset of illness as possible, preferably within five days of onset. The Cadham Provincial Laboratory (CPL) respiratory virus specimen collection procedure is available at https://www.gov.mb.ca/health/publichealth/cpl/docs/nasopharyngeal_collection.pdf.

Lab requisitions should specify exposure to avian influenza. Anyone who works with poultry or animals, has influenza-like symptoms and is seeking testing or treatment should be reminded to always identify themselves as an agricultural worker to medical officials to assist with identification of influenza variants.

INFECTION CONTROL

When the circulating avian influenza strain is known to cause risk to human health (such as highly pathogenic H5N1), individuals within the affected area should take precautions to minimize risk of infection.

- Avoid direct contact with wild and domestic birds, manure or other surfaces that may be contaminated with avian influenza virus.
- Farm personnel and residents not directly involved in culling activities should avoid exposure to infected birds, manure or surfaces that may be contaminated with avian influenza virus.
- Personnel involved in culling activities and/or environmental clean up who may be exposed to infected birds, manure or surfaces that may be contaminated with avian influenza virus should wear appropriate PPE.
- If the case requires admission to hospital, droplet and contact precautions are recommended.

Personal protective equipment (PPE)

PPE, when used consistently and appropriately, reduces an individual's risk of infection with avian influenza. PPE is recommended for people that may be exposed to both avian/animal and human cases of avian influenza.

PPE in a Farm Setting

Farm personnel that participate outbreak control efforts, including culling activities or environmental clean up, must follow PPE recommendations to minimize risk of infection.

Recommended personal protective equipment:

- Fit-tested N95 respirator
- Protective eye wear
- Reusable gloves
- Protective clothing (re-usable if washed immediately after use, or disposable)

PPE in a Health care setting

Human to human transmission of the avian influenza virus occurs through indirect contact with contaminated objects/surfaces and through large respiratory droplets. Contact and droplet precautions are recommended for HCW's proving care to a patient with avian influenza with the use of the following PPE:

- Surgical or procedural mask
- Protective eye wear
- Gown
- Gloves

DOCUMENTATION

In Manitoba, communicable disease investigations are documented in the provincial Public Health Information Management System (PHIMS).

As the source cases for most avian influenza is non-human, contact investigations must be created for all contacts. Case investigations should be created for suspect and confirmed human cases.

Create a new contact investigation for each exposed individual:

- **Disease Summary**
  - Disease: select Influenza
  - Authority: select Provincial
  - Classification: select Contact: Person under investigation
  - Microorganism: select Influenza A
  - Subtype and Strain: select Influenza type A, avian, H5N1 strain

- **Interventions**

  The following interventions should be completed if applicable for each contact:
  - Education and counselling
  - Testing and Treatment

  - Isolation
  - Immunization
  - Status assessment (active daily monitoring may be necessary in contacts who develop symptoms). Asymptomatic contacts should be advised to self-monitor for symptoms.

- **Signs and Symptoms**
  Document all symptoms, including start and end dates (if applicable).

- **Treatment & Immunizations**
  Document any treatment or immunization provided.

- **Outbreak Information**
  Create an outbreak in the outbreak module for each location identified with H5N1. Contact investigations can be linked to the outbreak.

PUBLIC EDUCATION

While the risk of avian influenza in the human population is low, individuals can take action to protect themselves and others:

- Avoid unnecessary contact with poultry and wild birds. Sick and dead birds pose the greatest risk for avian flu transmission.
- 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.
- Get a flu shot. Human influenza remains a more significant risk for serious adverse outcomes. An annual influenza vaccination reduces these risks while also reducing the risk of mutation of the avian influenza virus.
- Follow all general public health recommendations to prevent illness and infection include covering your cough, frequent hand washing with soap and water and staying home when you are sick.