PROVINCIAL LABORATORY MEDICINE SERVICES
Provincial Health Services Authority
BCCDC Public Health Lab

BC Centre for Disease Control
Provincial Health Services Authority

MEMORANDUM

Date: 9/19/2025

Re: Testing Recommendations for Highly Pathogenic Avian Influenza (H5N1)

Background

Highly pathogenic avian influenza (H5N1) has been circulating in British Columbia every fall since 2022 amongst wild bird species and domestic poultry. Those who have exposure to domestic and wild birds are at a higher risk of becoming infected with H5N1. To date, no sustained human-to-human transmission of H5N1 has been observed. Please visit the BCCDC Avian Influenza webpage for more information on avian influenza and additional resources for poultry owners and workers, workers with potential wild animal encounters, and the general public.

The BCCDC Public Health Laboratory (PHL) requests that the following steps be taken when an individual with suspected H5N1 infection (i.e. compatible signs/symptoms and exposure history) is identified by a laboratory:

1. Confirm that the Medical Health Officer for the local health authority has been notified of the suspected case.
2. Contact the BCCDC PHL Medical Microbiologist On-Call by email (BCCDC_MicroOncall@bccdc.ca) or phone (604-661-7033) prior to sending specimen(s) for testing.
3. Avoid discarding any respiratory, conjunctival, or blood (serum/plasma) laboratory specimens until H5N1 testing has been completed and reported.

General Testing Guidelines

Specimen collection should align with the clinical presentation of the person under investigation. Diagnostic sensitivity is optimized by collecting multiple specimens within 5 days of symptom onset; however, longer intervals do not preclude testing as continued viral shedding may occur.

For patients with **mild** respiratory signs and symptoms:

- Submit a provider collected nasopharyngeal (NP) swab PLUS either: (1) a throat swab OR (2) a combined throat and mid-turbinate nasal swab.
- In those who decline provider collected samples, self-collected throat/nose swabs can be submitted for testing at the BCCDC Public Health Laboratory only.

For patients with **severe** respiratory signs and symptoms:

- In addition to the samples listed above for mild disease, patients should have a lower respiratory tract specimen collected (i.e. bronchoalveolar lavage, endotracheal aspirate, and/or induced sputum).
- If sample(s) are influenza A positive, **subtyping or forwarding to BCCDC PHL for subtyping should be performed within 24 hours of the positive test result.** Please notify the Medical

Microbiologist On-Call (604-661-7033) when forwarding samples in this situation to ensure expedited testing.

For patients with **conjunctivitis**, with or without respiratory symptoms:

- Submit a provider collected conjunctival swab PLUS a NP swab.

If the sample tests positive for influenza A, local laboratories should ensure that the sample is subtyped with H1, H3, and H5 NATs. For H5, testing may be performed simultaneously or in situations where an endemic subtype has not been identified. Please note that subtyping performs best when the cycle threshold (Ct) value for influenza A is <35; please contact the BCCDC Medical Microbiologist on-call to discuss testing options if avian influenza is still suspected in the context of a low viral load.

- If H1, H3, and/or H5 subtyping is not available in the local laboratory, the sample can be forwarded to BCCDC PHL for subtyping.
- If a sample tests positive for influenza A, but negative for H1/H3 and the viral load is high or unknown, the samples should be forwarded to BCCDC PHL for H5 NAT testing. H5 positive NAT results will be reported as presumptive positive and will be confirmed by sequencing at the PHL as well as testing at the National Microbiology Laboratory.
- Samples that are influenza A positive and have an adequate viral load, but are not typeable by NAT, will be sequenced to determine the viral subtype.
- If the sample tests negative for influenza A, it will be tested for other respiratory pathogens (if not already completed by the local laboratory) to help provide an alternate diagnosis. If avian influenza testing is negative, but clinical suspicion of infection remains high, clinicians may consider collecting an additional set of specimens from the patient for testing.

Contact Testing

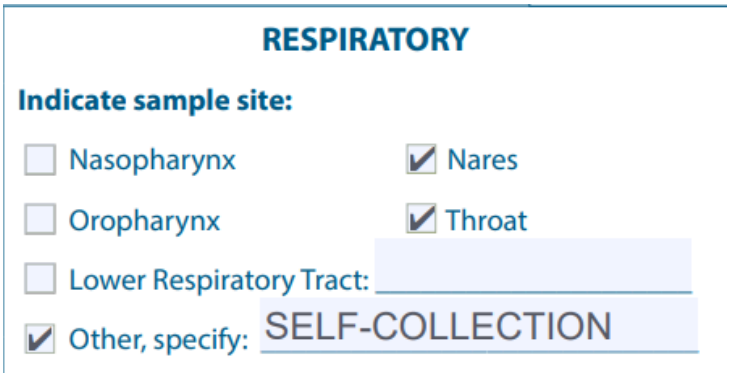
Serological testing is available but limited to public health investigative purposes; contact the Medical Microbiologist on-call for approval if indicated. Please note: a minimum of 500 µL of serum is required for testing.

Specimen Collection & Ordering

Complete up-to-date testing information, including appropriate specimen collection devices, procedures, and transportation, is available at: http://elabhandbook.info (Relevant sections: "*Avian Influenza A Testing"* and *"Influenza A Virus Typing NAT"*).

Please submit specimens accompanied by a completed BCCDC Virology Requisition form. Check the "Avian influenza" box in the Respiratory subsection and provide necessary clinical/exposure history in the "Relevant Exposure/Travel or Other History" section on the top right side of Section 2 of the Virology Requisition.

- If the sample is a self-collected throat/nose swab, ensure that throat, nares, and other, specify boxes are checked off under the Respiratory section for indicate sample type **and** write in "SELF-COLLECTION" in the Other, specify section provided.



- If submitting specifically for H5 NAT, please complete the information in the "Referral Laboratory Use Only Viral Typing By NAT/Sequencing" section.

Biosafety

Laboratory Safety:

While influenza A(H5N1) in pure culture is a Risk Group 3 pathogen and a Security Sensitive Biological Agent (SSBA), clinical samples can be safely handled in a Containment Level 2 (CL2) laboratory for non-propagative routine testing, including molecular, serological, and chemistry analyses. Complete federal biosafety standards, including a Q&A1,2 and interim infection prevention & control guidance documents for avian influenza including a Q&A3,4 are available online. Please ensure your laboratory's biosafety officer (or designate) has reviewed these documents and undertaken a local risk assessment. When handling specimens from an individual with a suspected or confirmed positive result for H5N1, we recommend handling specimens in a CL2+ environment (i.e. perform all manipulations of the specimen in a biological safety cabinet, preferably with use of an N95/respirator). If specimens require centrifugation, use sealed safety cups or rotors and unload the centrifuged samples in a BSC.

Sample Disposal:

It is recommended to autoclave H5N1 positive specimens prior to disposal and/or dispose of specimens in an approved biomedical waste management system. If long-term sample retention is required, we strongly recommend forwarding the specimens to the BCCDC PHL for storage in a CL3 laboratory.

Transportation:

Cultures of H5N1 must be transported as Category A; however, as per TDG regulations, patient specimens that contain or may contain avian influenza A(H5N1) may be transported as Category B.

Thank you,

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Resources:

1. Biosafety guidelines for avian influenza: https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/biosafety-directives-advisories-notifications/alphainfluenzavirus-influenzae-h5n1-avian- influenza-a.html

2. Biosafety directive for new and emerging influenza A viruses: https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/biosafety-directives-advisories-notifications/new-emerging- influenza-a-viruses.html

3. IPAC guidelines for avian influenza: https://www.canada.ca/en/public-health/services/diseases/avian-influenza-h5n1/health-professionals/interim-recommendations-infection-prevention-control-avian-influenza- healthcare-settings.html

4. PHAC Q&A on H5N1 biosafety and handling: https://training-formation.phac-aspc.gc.ca/mod/page/view.php?id=15866#_Toc176262079