

– CPHLN –

Prioritization and Appropriate Testing for Laboratory Investigation of Novel Influenza Infection in Humans

This Question and Answer sheet has been developed to provide some background information regarding appropriate testing of suspected human cases of novel influenza (such as human H5N1). The information is intended as a quick summary only, for more detailed information please consult the laboratory annex of the Canadian Pandemic Influenza Plan, available at: http://www.phac-aspc.gc.ca/cpip-pclcpi/ann-c_e.html

IMPORTANT NOTE: Human infection with avian influenza A/H5N1 is still a very rare event. The disease remains primarily a zoonotic infection, with exposure to diseased animals documented for almost all cases. As such, and given the greater likelihood of seasonal influenza infections in Canada, these guidelines for human H5N1 testing should only be applied to patients who have a history of travel or contact with a traveller to areas affected by outbreaks of novel strains of influenza affected areas (<http://www.phac-aspc.gc.ca/h5n1/index.html>) AND a significant exposure history (http://www.phac-aspc.gc.ca/eri-ire/pdf/04-Human-H5N1-Travel-Exposure-Screening-Guideline_e.pdf). **To establish your patient's risk if infection with novel influenza strains (such as H5N1) based on travel and exposure history and for guidance on further actions, contact your local medical officer of health immediately.**

Q. What sample do I collect?

- A.** Collect multiple different types of specimens from the suspect patient including nasopharyngeal swabs or washings, throat swabs, conjunctival swabs, nasal washing.
- Although the NPS is the ideal specimen for human influenza, recent data suggests that the recovery of the current H5N1 viruses infecting humans in Asia is better from throat specimens than nasal specimens. Because the optimal specimen type and collection timing are unknown for human avian influenza infections (and for as-yet undetected novel strains, particularly as they continue to evolve), physicians are encouraged to collect different types of respiratory specimens including NP swabs, NP aspirates, nasal washings, throat swabs and sputa on multiple different days. In addition because there have been instances when H5N1 virus has been isolated in the stool of infected patients, stool collection should be considered in patients who have significant gastrointestinal symptoms.

Q. Can I use the rapid antigen based point-of-care (POC) kits that we use for the usual human influenza?

- A.** No.
- The use of commercially available rapid POC tests for the diagnosis of a new subtype (novel influenza virus, including H5N1 viruses) is not recommended due to the lack of data on the clinical accuracy of such rapid tests. These tests may be able to rapidly identify and differentiate influenza A and B infection, however they currently do not differentiate different HA subtypes and cannot differentiate human from avian influenza virus. Any positive results on direct antigen or rapid POC tests obtained on patients suspicious for avian influenza must be confirmed by culture and/or RT-PCR. Complete details of the WHO recommendations relating to the use of rapid testing for influenza diagnosis including a review of the currently available kits can be found at: http://www.who.int/csr/disease/avian_influenza/guidelines/rapid_testing/en/index.html

Novel Influenza in Humans

Early Detection Recommendations: Laboratory Investigation

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Q. What tests can be used?

A. At present avian influenza capable of infecting humans is considered a high-risk pathogen and culture of the virus is restricted to laboratories that have CL 3 bio-containment. However, most public health laboratories and many large clinical laboratories have developed molecular methods such as reverse transcriptase PCR (RT-PCR) to detect and subtype novel influenza viruses. The turn around time for testing is 1-2 days, depending on the method used. To determine what testing is available in your area you should contact your regional or Provincial Public Health Laboratory.

REMEMBER: Communication is of the utmost importance. **If you suspect a human case of H5N1 please contact your local medical officer of health immediately.** They will help you with the decisions regarding how to diagnose and manage suspected patients and will notify the appropriate people.