

November 2009

Testing for Pandemic Influenza A H1N1 (2009) (pH1N1) - Update

To health care providers:

The Ontario Agency for Health Protection and Promotion (OAHPP) Public Health Laboratories (PHL) would like to update you on recent changes in testing for pH1N1 during this second wave of the 2009 pandemic.

The PHL has changed the current testing algorithm. These changes are in keeping with the Ontario Health Plan for an Influenza Pandemic, available at:

http://www.health.gov.on.ca/english/providers/program/emu/pan_flu/pan_flu_plan.html

1) Influenza A subtyping

The pre-test probability for an influenza A positive sample being pH1N1 is currently 99%, rendering subtyping of all influenza A positive specimens no longer necessary. As a result, the PHL will perform subtype testing for the following categories:

- All intensive care;
- Outbreak (e.g., long-term care homes) specimens;
- Twenty percent (20%) of all other influenza A positive specimens.
- Testing laboratories (including hospitals) should forward 20% of influenza A positive specimens, regardless of method of detection (e.g. rapid antigen detection, PCR) to PHL for subtyping.

As the pandemic evolves, the proportion of Influenza A positive specimens subtyped may be reduced further. Testing strategy will be reassessed if there is a re-emergence of seasonal subtypes.

Critical care or outbreak setting must be clearly written on the laboratory requisition.

2) Post mortem/autopsy specimens

To ensure that these specimens are prioritized, and that appropriate specimens are collected for testing, please call:

- a. On weekdays 8:30 am -5pm: Dr Samir Patel at 416-846-5895
- b. After hours please call the duty officer line at 416-605-3113

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3) Priority for Intensive Care Patient Testing

PHL aims to prioritize testing for ICU patients. If a specimen has been collected on a patient prior to admission to ICU, testing may be rejected by PHL. Intensive care facilities may therefore choose to recollect a respiratory sample at the time of ICU admission or they may contact the local PHL to inform them of this change in order to enable appropriate prioritization.

You are also encouraged to contact your PHL if a result is not received within 72 hours of specimen submission from a critical patient.

4) Influenza B Polymerase Chain Reaction (PCR) testing

Given the virtual absence of influenza B at this time, influenza B PCR will be done on the following:

- All intensive care;
- outbreak specimens;
- Twenty percent (20%) of other specimens submitted for influenza PCR.

Testing strategy will be reassessed if there is a re-emergence of influenza B

5) Viral cultures

Currently, only 5% of viral cultures are positive for viruses other than influenza. Performing viral culture on ambulatory patients without risk factors for severe influenza is not necessary for clinical purposes. PHL will continue to reject requests for influenza testing in this group of patients.

Only 20% of submissions for viral culture for other pathogens will be processed to provide surveillance information about viruses circulating in the community.

PHL will also culture 20% of samples that are Influenza A PCR negative for surveillance purposes only.

6) Outbreak testing from schools

Current information suggests that all school outbreaks are due to pH1N1. Local public health units are advised to submit samples for laboratory testing only when there has been no documented pH1N1 circulation in the health unit jurisdiction.

7) Antiviral susceptibility testing for influenza

Clinicians caring for immunocompromised or severely ill patients with influenza A (H1N1) virus infection should be aware of the potential for development of antiviral drug resistance during therapy.

Antiviral resistance occurs when specific mutations appear in the viral genome. Antiviral susceptibility for influenza A (H1N1) mutations can be detected with nucleic acid sequencing or neuraminidase inhibition assay (phenotypic, culture-based testing) on a restricted basis for patients in the following categories:

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- Influenza developing after or during oseltamivir or zanamivir prophylaxis
- Severely-ill patients (ICU) and fatalities.
- Persistent viral shedding, defined as a repeat PCR test positive after 7 days or more of treatment. This may be undertaken for:
 - Immunocompromised patients
 - Patients non-responding to antiviral therapy

However, *routine* PCR follow up testing is **not** indicated.

Requests for susceptibility testing must be clearly written on the PHL test requisition.

Resistance surveillance will be done on randomly selected positive samples from different geographical areas of the province and for institutional outbreaks.

Other updates on laboratory testing:

The PHL will **NOT** accept the following for routine testing of pH1N1:

1. Refer to the Ministry of Health and Long-Term Care Guidance for the Management of Influenza - Like Illness in Ambulatory Care Settings During Pandemic (H1N1) 2009 – Summary at http://www.health.gov.on.ca/en/ccom/flu/h1n1/pro/docs/ambulatory_guidance.pdf
2. Serum, clotted blood or whole blood for serology. Serology testing for pH1N1 is neither sensitive nor specific enough for clinical diagnostic use.
3. Stool testing for pH1N1 is not routinely offered at the PHL as it has not been validated as a routine test for this purpose.
4. Note that PHL has updated the specimen requisition form to allow easier triage, prioritization and tracking of samples for pH1N1 testing. It is available at: <http://www.oahpp.ca/labrequisition/> and should be used when submitting samples to PHL.

For more information about pH1N1, please contact:

- OAHPP Laboratory Helpline **1-800-640-7221**
- After hours duty officer **416-605-3113**
- For the OAHPP Specimen Collection Guide and previous Lababstracts refer to <http://www.oahpp.ca/publichealthlaboratories.php>