Influenza A(H7N9) Guidance for Health Workers and Health Sector Employers

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This information requires knowledgeable interpretation and is intended primarily for use by health workers and health sector employers in all settings.

Case Definitions

Note that the Ministry of Health and Long-Term Care's case definitions for influenza A(H7N9) differ from guidance provided by the Public Health Agency of Canada (PHAC). While PHAC has provided a severe acute respiratory infection (SARI) definition, the ministry's case definition is broader to ensure a wider range of individuals are tested.

Confirmed Case: A patient with appropriate exposure criteria† and novel influenza A(H7N9) virus infection that is confirmed by the National Microbiology Laboratory, another WHO National Influenza Centre or a certified laboratory using methods agreed upon by WHO[1]. As with other novel pathogens, all early cases in Ontario should be confirmed at a reference laboratory.

Probable Case: A patient with appropriate exposure criteria† and illness compatible with influenza, regardless of illness severity, for whom laboratory diagnostic testing is positive for influenza A but un-subtypeable (i.e., negative for H1pdm09, negative for seasonal H1 and negative for seasonal H3 by real-time reverse transcriptase polymerase chain reaction (RT-PCR)) or for whom test results do not provide a sufficient level of detail to confirm the H7N9 subtype.

Person under Investigation: A patient with illness compatible with influenza, regardless of illness severity, meeting any of the exposure criteria† and for whom laboratory confirmation is unavailable, not known or pending.

†Exposure Criteria

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[1] Confirmation of all novel influenza A(H7N9) viruses is initially being performed by the National Microbiology Laboratory (NML). Once appropriate diagnostic testing methodology has been identified by NML, confirmation may be made by public health laboratories following WHO-approved protocols for detection of novel influenza A(H7N9) virus, or by laboratories using an authorized test specific for detection of novel influenza A(H7N9) virus.

- A patient who has recently arrived from (within 10 days of illness onset) a country where human cases of novel influenza A(H7N9) virus have recently been detected[2] or where novel influenza A(H7N9) viruses are known to be circulating in animals.

OR

- A patient who has had recent close contact[3] (within 10 days of illness onset) with a confirmed or probable case of infection with novel influenza A(H7N9) virus.

Any person who has had close contact[3] with a probable or confirmed case while the probable or confirmed case was ill should be carefully monitored for the appearance of respiratory symptoms. If symptoms develop within the first ten days after contact, the individual should be considered a person under investigation and investigated accordingly.

Occupational Health & Safety and Infection Prevention & Control

The Provincial Infectious Diseases Advisory Committee's (PIDAC's) document entitled Routine Practices and Additional Precautions in All Health Care Settings provides recommendations on contact, droplet and airborne precautions. The Ministry of Health and Long-Term Care is recommending the management of all influenza A(H7N9) confirmed cases, probable cases and persons under investigation using modified airborne precautions. This includes:

- masking the patient with a surgical mask when outside of the negative pressure airborne isolation room; and
- use of gloves, gowns and fit-tested, seal-checked N95 respirators and eye protection by health workers when entering the same room as, transporting or caring for the patient

This is a higher level of precaution than is being recommended by PHAC. The Ministry of Health and Long-Term Care is recommending airborne precautions based on its application of the precautionary principle to this novel virus for which little information about transmission and clinical severity is available.

Reporting

Contact the local public health unit to report persons under investigation and probable cases.

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[2] Countries that have recently reported novel influenza A(H7N9) human cases include China.

[3] Close contact includes:

- anyone who provided care for the patient, including a health worker or family member, or who had other similarly close physical contact
- anyone who stayed at the same place (e.g., lived with, visited) as a probable or confirmed case while the case was symptomatic

Assessment, Testing and Treatment

It is recommended that health care providers assess, test and treat patients who meet the definition for confirmed and probable cases or persons under investigation as outlined below. The majority of H7N9 cases reported to date have experienced severe respiratory illness; however, there have been a number of cases with milder illness.

Assessment

Health care providers should assess patients presenting with influenza-like-illness using the case definitions (see above) and clinical judgment.

Treatment

Antiviral treatment, when indicated is most effective when started as soon as possible after influenza illness onset. Early initiation of treatment provides a better clinical response, although treatment of moderate, severe, or progressive disease started 48 hours after symptom onset may still provide benefit.

For persons hospitalized with suspected influenza, including suspected novel H7N9 virus infection, health care providers should start empiric treatment with neuraminidase inhibitor antivirals (e.g., oral oseltamivir or inhaled zanamivir) as soon as possible, without waiting for laboratory confirmation. H7N9 is intrinsically resistant to adamantanes which should not be used to treat this infection.

For high-risk persons (persons <5 years of age, ≥65 years of age, and those with certain underlying medical conditions) with suspected influenza of any severity, including suspected novel H7N9 virus infection, health care providers should start empiric treatment with antiviral neuraminidase inhibitor antivirals such as oseltamivir as soon as possible, without waiting for laboratory confirmation.

Testing

Probable cases and persons under investigation are candidates for laboratory testing for influenza using RT-PCR.

The following specimens should be collected on all patients being tested for influenza A H7N9:

- respiratory tract samples (e.g., nasopharyngeal (NP) swab plus bronchoalveolar lavage (BAL) when possible); lung tissue if obtained (e.g. biopsy, post-mortem)
- a viral throat swab (placed in viral transport media) should also be collected on all hospitalized patients (see below)
- acute (when patient first seen with acute respiratory illness) and convalescent (21 to 28 days after illness onset) serology

Specimens from such patients should only be inoculated into viral culture in a level 3 laboratory. The H7N9 virus is detected as influenza A in the current influenza A PCR assay used by the Public Health Ontario Laboratories (PHOL) and is un-subtypeable when subtyping is performed.

For avian influenza viruses for which data is available (i.e., influenza A H5N1), posterior pharyngeal (throat) swabs provide the highest yield upper respiratory tract specimens. For this reason it is recommended that a throat swab also be collected from hospitalized patients. Please note that throat swabs should be submitted in viral transport media.

PHOL performs influenza A and B PCR; PHOL may also use a multiplex respiratory viral PCR (MRVP) assay to detect other viruses on hospitalized patients (viral culture is not routinely performed).

Testing for common bacterial respiratory tract pathogens (e.g., Mycoplasma pneumoniae, Chlamydophila pneumoniae, Legionella species) and consideration of fungal testing is recommended for hospitalized patients with evidence of lower respiratory tract infection in addition to testing for influenza.

Persons under investigation with severe respiratory illness (including radiographically-confirmed pneumonia, acute respiratory distress syndrome or other severe respiratory illness) of unknown etiology may be prioritized for diagnostic testing.

Serology testing is being done by the National Microbiology Laboratory (NML) to facilitate better understanding of the epidemiology of the novel virus and is not intended to inform clinical care. These results may take significant time (i.e., months) to be reported.

Health care providers should submit samples using PHOL's general test requisition form as follows:

- include the patient's health insurance number (HIN), date of illness onset, patient setting, travel history (including city/ province visited in China when possible), animal contact, signs and symptoms and specify "ARI – recent travel to China" on the requisition
- contact PHOL Customer Service Centre at 416-235-6556/1-877-604-4567 prior to submission
- package and ship the primary clinical samples to the local PHOL following Category B/UN 3373 Transportation of Dangerous Goods instructions

PHAC and the Canadian Food Inspection Agency have released a Joint Biosafety Advisory on the influenza A(H7N9) virus to assist clinical/ diagnostic and research laboratories in implementing proper biosafety procedures when handling samples containing influenza A(H7N9) virus.

Further Information

For more information, call the Ministry of Health and Long-Term Care's Health Care Provider Hotline at 1-866-212-2272.

For additional information on worker health and safety information, please visit the Ministry of Labour Health and Community Care website.

This information does not relieve employers from their legislated obligations.