

Guidance: Infection Prevention and Control Measures for Healthcare Workers in Acute Care and Long-term Care Settings

Seasonal Influenza



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Guidance: Infection Prevention and Control Measures for Healthcare Workers in Acute Care^a and Long-term Care^b Settings

Seasonal Influenza

The Public Health Agency of Canada (PHAC) has developed this document to provide infection prevention and control guidance to healthcare workers (HCWs) in the management of patients^c with suspected or confirmed seasonal influenza, including 2009 H1N1 flu virus in the acute care^a and long-term care (LTC)^b settings. This document does not provide recommendations for novel influenza strains that may emerge in the future. The content of this guidance has been informed by technical advice provided by members of the Steering Committee on Infection Prevention and Control Guidelines and its Working Group on Routine Practices and Additional Precautions.

The following guidance should be read in conjunction with relevant provincial and territorial, and local legislation, regulations, and policies. This guidance is based on current, available scientific evidence and is subject to review and change as new information becomes available.

Description

Seasonal influenza, a respiratory infection caused by the influenza virus is a significant cause of morbidity and mortality, especially in individuals who are at the extremes of age, pregnant, immune compromised, or have chronic underlying disease^{1,2}. Morbidity and hospitalization rates for influenza among healthy children less than 2 years of age are similar to those among adults over 65 years of age.

As with most acute viral respiratory infections, seasonal influenza occurs annually in the winter months, and healthcare-associated outbreaks may follow or parallel outbreaks in the community, which usually last from 6 to 8 weeks. Outbreaks are often characterized by abrupt onset and rapid transmission¹. Most reported outbreaks of influenza have occurred in long-term care facilities. However, outbreaks have also been reported on pediatric, medical, and geriatric wards, and in adult and neonatal intensive care units¹.

The most important reservoirs of the influenza virus are infected persons. Infection may be introduced into a healthcare facility by patients, personnel or visitors¹. The period of communicability is generally 3-7 days from clinical onset³. Prolonged shedding may occur in immune compromised individuals⁴. Transmission is by large droplet spread and by contact³. The influenza virus can survive for several hours on environmental surfaces¹.

^a Acute care - A facility where a variety of inpatient services is provided, which may include surgery and intensive care. For the purpose of this document, acute care also includes ambulatory care settings such as hospital emergency departments, and free-standing ambulatory (day) surgery or other day procedures (e.g., endoscopy) centres³.

^b Long-term care - A facility that includes a variety of activities, types and levels of skilled nursing care for individuals requiring 24-hour surveillance, assistance, rehabilitation, restorative and/or medical care in a group setting that does not fall under the definition of acute care. These units and facilities are called by a variety of names including chronic, continuing, complex, residential, rehabilitation, or convalescence care and nursing homes³.



Recommended Infection Prevention and Control Measures

The following guidance is based primarily on recommendations in the Public Health Agency of Canada's "*Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Health Care*" guideline³ and the "*Infection Control Guideline for the Prevention of Healthcare-associated Pneumonia*"¹.

Source Control, achieved through administrative and engineering measures, is the most effective way to prevent the transmission of infectious agents in all healthcare settings. The most effective way to prevent and control seasonal influenza is through immunization of both healthcare workers and patients².

In addition to Routine Practices, patients with suspected or confirmed seasonal influenza in acute care^a and LTC^b settings should be placed on **Droplet and Contact Precautions**. A point of care risk assessment approach should be used to guide decisions regarding when to apply Droplet and Contact precautions (see Appendix A).

The following topics are addressed in more detail below and apply to both acute care and LTC settings, unless otherwise specified:

- source control,
- screening,
- surveillance,
- laboratory testing/reporting,
- immunization,
- hand hygiene,
- accommodation,
- patient flow/activities,
- personal protective equipment,
- patient care equipment,
- environmental cleaning,
- laundry/waste management,
- discontinuing Droplet and Contact Precautions,
- management of visitors and
- outbreak management.

1. Source Control

a) **Respiratory hygiene**

Respiratory hygiene should be encouraged for patients^c and accompanying individuals who have signs and symptoms of an influenza-like-illness (ILI)⁵, (see 3.b.), beginning at the point of initial encounter in any healthcare setting (e.g., inpatient, triage, reception and waiting areas in emergency departments, outpatient clinics, etc.). Respiratory hygiene includes coughing into one's sleeve and using tissues and, masks^d when coughing, sneezing, or for controlling nasal secretions.

^c 'Patients' refers to patients, residents or clients

^d Surgical or procedure masks



Healthcare facilities should provide tissues and masks^d for respiratory hygiene, as well as instructions on how and where to dispose of them, and on the importance of performing hand hygiene (see 6. Hand Hygiene) after handling this material.

Patients^c should be taught to perform hand hygiene and how to perform respiratory hygiene. Patients^c with suspected/confirmed influenza should wear a mask^d (if tolerated) when HCWs, other staff, or visitors are present. Patients^c may remove their masks^d once accommodated in their rooms^e (see 7. Accommodation).

b) Spatial separation

There should be at least a 2 metre separation between patients^c who have signs and symptoms of an ILI⁵ and those who do not.

2. Screening

a. Patients^c symptomatic with an ILI⁵ should be assessed in a timely manner and potential causes of acute respiratory infection other than influenza should be considered (e.g., tuberculosis, respiratory syncytial virus, etc.).

b. The following criteria for ILI⁵ can be used to determine the need for applying the infection prevention and control measures found in this guidance.

- Acute onset of respiratory illness with fever and cough, and with one or more of the following: sore throat, arthralgia, myalgia, or prostration which is likely due to influenza.
- In children under 5 years, gastrointestinal symptoms may also be present.
- In patients under 5 years or 65 years and older, fever may not be prominent.

3. Surveillance

Prospective surveillance for ILI⁵ should be established (see 2.b.).

4. Laboratory Testing/Reporting

- a. Provisions for influenza diagnostic testing should be in place before the onset of influenza season each year.
- b. A protocol for testing patients with ILI⁵ to confirm the presence of influenza by direct testing or viral culture should be established.
- c. Diagnostic samples (nasopharyngeal swab or aspiration) should be taken from symptomatic patients^c as soon as influenza has been recognized in the community.
- d. Rapid diagnostic tests with a high degree of sensitivity should be available to facilitate the earlier detection of influenza and thereby enable appropriate medical management, earlier initiation or discontinuation of additional precautions, and reduction in transmission^{6,7,8}. Negative results of tests with low sensitivity should not be used to make decisions regarding stopping precautions.
- e. Prompt notification to infection prevention and control professionals and attending physicians as well as regional, provincial/territorial public health authorities as required should be ensured.

^c Patient's room, cubicle or designated bedspace



5. Immunization

Immunization is the most effective way to protect against seasonal influenza. Annual influenza vaccination is recommended for HCWs who are potentially capable of transmitting influenza, including those who provide direct patient care² or provide indirect health care. Annual influenza vaccination is considered an essential component of the standard of care for the protection of patients^{c,2}.

6. Hand Hygiene

HCWs should perform hand hygiene frequently (as recommended in the PHAC "*Hand Hygiene Practices in Health Care*" guideline⁹ and the healthcare organization's policy) preferably using an alcohol based hand rub (60-90%) or soap and water if hands are visibly soiled.

Other types of waterless products may contain either no alcohol or alcohol in concentrations of less than 60%. There is no efficacy data on these products and they should not be used for hand hygiene in healthcare settings⁹.

7. Accommodation

Patients^c suspected or confirmed to have influenza should be cared for in single rooms if possible. Perform a risk assessment to determine patient placement and/or suitability for cohorting when single rooms are limited or if in a LTC setting. Patients^c who are known to have influenza should be cohorted with suitable roommates. If cohorting is not possible and a cubicle or designated bedspace is used in a shared room, privacy curtains should be drawn between beds.

Infection control signage should be placed at the room^e entrance indicating Droplet and Contact Precautions required upon entry to the room^e.

8. Patient Flow/Activities

Patients^c with ILI⁵ should be restricted to their room until symptoms have resolved. Participation in group activities should be restricted while the patient^c is symptomatic. Movement/transport of patients^c with suspected or confirmed influenza should be restricted to essential diagnostic and therapeutic tests only. Transfer within facilities should be avoided unless medically indicated.

If transport is necessary, transport services and personnel in the receiving area should be advised of the required precautions for the patient^c being transported.

Patients with influenza who leave their room^e for medical reasons (i.e., essential diagnostic and therapeutic tests) should wear a mask^d and adhere to respiratory hygiene.

9. Personal Protective Equipment (PPE)

a) PPE in addition to Routine Practices

- Facial protection (masks^d and eye protection, face shields, mask^d with visor attachment) should be worn when within 2 metres of a patient^c with suspected or confirmed influenza.
- In acute care settings, gloves should be worn when entering the room^e of a patient^c with suspected or confirmed influenza.
- In LTC settings, gloves should be worn for direct personal care with the patient^c or if direct contact with frequently touched environmental surfaces is anticipated.



- A long sleeved gown should be worn if it is anticipated that clothing or forearms will be in direct contact with the patient^c or with environmental surfaces or objects in the patient care environment.
- Remove all PPE just before leaving the patient's room^e and discard in a hands-free waste or linen receptacle within the room^e.
- Hand hygiene should be performed after removing gloves and gown, before removing facial protection, and after leaving the room^e.

Note: In a shared room/cohort setting, facial protection may be worn for the care of successive patients^c.

b) Aerosol generating medical procedures (AGMPs)^f

- AGMPs should only be performed on patients with confirmed or suspected influenza if medically necessary.
- The number of HCWs present should be limited to only those essential for patient care and support.
- Wherever possible, the HCWs present during the procedure should be limited to those who have received influenza vaccine.
- Droplet and Contact Precautions in addition to Routine Practices as outlined in 9.a) should be used when performing AGMPs^f on patients with seasonal influenza.

10. Patient Care Equipment

All patient care equipment (e.g., thermometers, blood pressure cuff, pulse oximeter, etc.) should be dedicated to the use of one patient^c. All patient care equipment should be cleaned and disinfected as per Routine Practices before reuse with another patient^c or a single use device should be used and discarded in a waste receptacle after use.

Toys, electronic games or personal effects should not be shared by patients^c.

11. Environmental Cleaning

Hospital-grade cleaning and disinfecting agents are sufficient for environmental cleaning in the context of influenza. All horizontal and frequently touched surfaces should be cleaned at least twice daily and when soiled. The healthcare organization's terminal cleaning protocol for cleaning of the patient's^c room^e following discharge, transfer or discontinuation of Droplet and Contact Precautions should be followed.

12. Laundry/Waste Management

Routine Practices are sufficient.

13. Discontinuing Droplet and Contact Precautions

Droplet and Contact Precautions for seasonal influenza should be discontinued when the patient^c is no longer symptomatic or according to the organization's policy.

^f Medical procedures that can generate aerosols as a result of artificial manipulation of a person's airway³. Procedures include: intubation and related procedures (e.g. manual ventilation, open endotracheal suctioning), cardiopulmonary resuscitation, sputum induction, nebulized therapy, surgery and autopsy, non-invasive positive pressure ventilation (CPAP, BiPap)³.



14. Management of Visitors

Individuals who have ILI⁵ symptoms should be restricted from visiting except for compassionate reasons. Visitors with ILI⁵ should be instructed in respiratory hygiene, wear a mask^d, perform hand hygiene and visit the patient^c directly and exit directly after the visit.

Visitors for patients^c with influenza should be limited to persons who have been identified by the patient or next-of-kin as necessary for the patient's emotional well-being and care. They should be instructed in hand hygiene and asked to limit their movement within the facility.

15. Outbreak Management

- a. All healthcare organizations should have a written plan for managing an influenza outbreak in their facilities.
- b. Consider deferring admissions to an affected unit/ward.
- c. Consider cohorting patients^c with confirmed influenza in a single geographic area of the unit/ward or hospital.
- d. Consider restricting social activities or education programs to the affected ward/unit.
- e. Consider influenza vaccination for all unvaccinated patients^c unless contraindications exist.
- f. Consider chemoprophylaxis to all patients^c, whether vaccinated or not, who are in the outbreak area, are not already ill with influenza, and have no contraindications.
- g. Consider chemoprophylaxis for all unvaccinated HCWs, unless contraindications exist.
- h. Consider excluding unvaccinated HCWs who are not taking chemoprophylaxis from direct patient care.
- i. Consider influenza vaccination (unless contraindications exist) for unvaccinated HCWs who receive chemoprophylaxis; these individuals may continue to work without restrictions.



References

1. Public Health Agency of Canada, Infection Control Guideline for the Prevention of Healthcare -associated Pneumonia. 2010. PHAC publication pending.
2. An advisory statement. Statement on Seasonal Trivalent Inactivated Influenza (TIV) for 2010-2011. National Advisory Committee on Immunization. CCDR August 2010 Volume 36 ACS-6.
3. Public Health Agency of Canada, Routine Practices and Additional Precautions Guideline. 2010. PHAC publication pending.
4. Weinstock DM, Gubareva LV, Zuccotti G. Prolonged shedding of multidrug-resistant influenza A virus in immunocompromised patient. *N Engl J Med* 2003;348 (9):867-8.
5. Flu Watch Definitions for the 2010-2011 Available at: <http://www.phac-aspc.gc.ca/fluwatch/10-11/def10-11-eng.php>. Accessed October 7, 2010.
6. Munoz FM, Campbell JR, Atmar RL, et al. Influenza A virus outbreak in a neonatal intensive care unit. *Pediatr Infect Dis J* 1999;18:811-5.
7. Beekmann SE, Engler HD, Collins AS, et al. Rapid identification of respiratory viruses: impact on isolation practices and transmission among immunocompromised pediatric patients. *Infect Control Hosp Epidemiol* 1996;17:581-
8. Barenfanger J, Drake C, Leon N, et al. Clinical and financial benefits of rapid detection of respiratory viruses: an outcome study. *J Clin Microbiol* 2000;38:2824-8.
9. Public Health Agency of Canada, Hand Hygiene Practices in Health Care. 2010. PHAC publication pending.



Appendix A

Point of Care Risk Assessment Tool for Seasonal Influenza

Prior to any patient interaction, all healthcare workers (HCWs) have a responsibility to always assess the infectious risk posed to themselves and to other patients, visitors, and HCWs. This risk assessment is based on professional judgment about the clinical situation and up-to-date information on how the specific healthcare organization has designed and implemented engineering and administrative controls, along with the availability and use of Personal Protective Equipment (PPE).

Point of Care Risk Assessment (PCRA) is an activity performed by the HCW **before every patient interaction**, to:

1. Evaluate the likelihood of exposure to Seasonal Influenza,
 - **from a specific interaction** (e.g., performing/ assisting with aerosol-generating medical procedures, other clinical procedures/ interaction, non-clinical interaction (i.e., admitting, teaching patient/ family), transporting patients, direct face-to-face interaction with patients, etc.),
 - **with a specific patient** (e.g., infants/ young children, patients not capable of self care/ hand hygiene, have poor-compliance with respiratory hygiene, copious respiratory secretions, frequent cough/ sneeze, early stage of influenza illness, etc.),
 - **in a specific environment** (e.g., single rooms, shared rooms/ washrooms, hallway, influenza assessment areas, emergency departments, public areas, therapeutic departments, diagnostic imaging departments, housekeeping, etc.),
 - **under available conditions** (e.g., air exchanges in a large waiting area or in an airborne infection isolation room, patient waiting areas);

AND

2. Choose the **appropriate actions/ PPE** needed to minimize the risk of patient, HCW/ other staff, visitor, contractor, etc. exposure to seasonal influenza /suspect ILI⁵ case .

PCRA is not a new concept, but one that is already performed regularly by professional HCWs many times a day for their safety and the safety of patients and others in the healthcare environment. For example, when a HCW assesses a patient and situation to determine the possibility of blood or body fluid exposure or chooses appropriate PPE to care for a patient with an infectious disease, these actions are both activities of a PCRA.

References:

1. Health Canada, December 17, 2003. Infection Control Precautions for Respiratory Infections Transmitted by Large Droplet and Contact: Infection Control Guidance if there is a SARS Outbreak Anywhere in the World, When an Individual Presents to a Health Care Institution With a Respiratory Infection (Draft)
2. New York State Nursing Association (NYSNA), Nursing Practice Alert. Emergency Department Overcrowding/Preparedness. Website accessed May 2, 2009.
http://www.nysna.org/practice/alerts/alert_1104.htm