

Annex B: Best Practices for Prevention of Transmission of Acute Respiratory Infection

In All Health Care Settings

Provincial Infectious Diseases Advisory Committee (PIDAC)

Revised: March 2013



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NOTES

This document is intended to provide best practices only. Health care settings are encouraged to work towards these best practices in an effort to improve quality of care.

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The following is an annex to Routine Practices and Additional Precautions in All Health Care Settings, 3rd Edition

This document is current to March 2013. New material in this revision is highlighted in **mauve** in the text.

Summary of Major Revisions:

<u>Page</u>	<u>Revision</u>
4	Additional information about influenza and immunization
5	Addition of contraindications to influenza immunization
6	New information about pertussis and immunization
7	New Box illustrating comparison between active and passive case finding/surveillance
8	Additional information on how to conduct surveillance in acute care and long-term care homes
9	New Table 1, summarizing application of ARI case finding/surveillance types
11	New information about recognizing individuals with influenza
12	New information on duration of Additional Precautions
13	Revisions to Table 2
14	New section on healthy workplace policies
22	Revisions to Appendix A, Initial Decision-making for Presentations of ARI
24	Revisions to Appendix C, Sample Signage for Passive Case Finding of Acute Respiratory Infection at Entrance to Health Care Facilities
25	New Appendix D, Sample Signage for Visitors to Health Care Facilities

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Additional Abbreviations for this Annex

Refer to abbreviations in '*Routine Practices and Additional Precautions in All Health Care Settings*' for additional abbreviations not found in this annex.

ARI	Acute Respiratory Infection
CAP	Community-Acquired Pneumonia
PHAC	Public Health Agency of Canada
PCR	Polymerase Chain Reaction

Glossary of Additional Terms for this Annex

Refer to glossary in '*Routine Practices and Additional Precautions in All Health Care Settings*' for additional terms not found in this annex.

Acute Respiratory Infection (ARI): Any new onset acute respiratory infection that could potentially be spread by the droplet route (either upper or lower respiratory tract), which presents with symptoms of a new or worsening cough or shortness of breath and often fever (also known as febrile respiratory illness, or FRI). It should be noted that elderly people and people who are immunocompromised may not have a febrile response to a respiratory infection.

Case Finding: A standard procedure in control of certain contagious diseases whereby diligent efforts are made to identify people who are or may be infected.

Cluster: A grouping of cases of a disease within a specific time frame and geographic location suggesting a possible association between the cases with respect to transmission.

Outbreak: For the purposes of this document, an outbreak is an increase in the number of cases above the number normally occurring in a particular health care setting over a defined period of time.

Preamble

About This Annex

This annex is added as an extension to PIDAC's *Routine Practices and Additional Precautions in All Health Care Settings*¹ and deals specifically with the surveillance, reporting and specific interventions for prevention and control of droplet-spread acute respiratory infections in health care settings across the continuum of care including, but not limited to, pre-hospital care, acute care, complex continuing care, rehabilitation facilities, long-term care, chronic care, ambulatory care, home health care, community health centres and clinics, physician offices, dental offices, offices of other health-regulated professionals, independent health facilities (IHF) and out-of-hospital premises (OHP).

The infection prevention and control management of acute respiratory infection is detailed in Section 2.B of *Routine Practices and Additional Precautions in All Health Care Settings*.¹

Introduction

The Risks and Impact of Acute Respiratory Infections (ARI) in Health Care Settings

Infectious respiratory diseases, such as colds, influenza and pneumonia, are a major cause of illness, absenteeism, lost productivity and death. Health care-associated outbreaks of influenza and other respiratory viruses result in substantial morbidity and mortality and interfere significantly with patient care and patient flow. Pertussis outbreaks have occurred in health care facilities,²⁻⁴ with adults being the primary source for infants and children who are in hospital.⁵ Health care providers have both acquired and introduced pertussis during several outbreaks.^{2-4, 6, 7}

In Canada, influenza and community-acquired pneumonia (CAP) account for 60,000 hospitalizations and up to 8,000 deaths annually, and they are the leading cause of death from infectious disease.⁸ New diagnostic methods, such as polymerase chain reaction (PCR), have shown that the viral aetiology of CAP may be underestimated⁹ and that respiratory viruses are often found in combination with bacterial agents such as *Streptococcus pneumoniae*.¹⁰

In all health care settings, there is significant risk of transmission of ARI to patients and to health care providers. This is due to:

- the large number of people (i.e., patients, family members, volunteers, visitors, workers) who come and go in these settings
- the ease with which droplet-spread respiratory illnesses can pass from one person to another¹¹
- the fact that many clients/patients/residents have other illnesses that make them more likely to experience complications from respiratory infections
- the large number of people who seek care for or develop ARI in these settings.

The risk to clients/patients/residents is higher in institutional settings, particularly in:

- long-term care homes, which are closed communities where many older, frail residents with chronic illnesses live for prolonged periods of time
- acute care hospital units where there are many high risk patients.

The risk to health care providers is highest in settings where:

- people first present with respiratory symptoms (e.g., physicians' offices, community health centres/clinics, emergency departments)
- health care providers are performing procedures that create sprays, splashes and/or aerosols (e.g., nebulized therapies, open suctioning).

General Requirements

A. Health Care Worker (HCW) Immunization

Immunization against vaccine-preventable diseases is an integral part of a health care occupational health and safety program. Immunization helps protect the health of HCWs, and also protects clients/patients/residents. Influenza immunization of health care workers has been shown to reduce the mortality and morbidity of patients under their care and to reduce HCW absenteeism during the influenza season.¹²⁻¹⁴

All health care settings should have HCW immunization policies in place consistent with the Ontario Hospital Association (OHA)/Ontario Medical Association (OMA) Joint Influenza Surveillance Protocol for Ontario Hospitals. These policies should establish annual influenza immunization as a standard of care and set out the steps to protect patients and HCWs (e.g., reminding HCWs about the importance of annual immunization, documenting each person's immunization status, excluding non-immunized HCWs who refuse antiviral prophylaxis from work during outbreaks).

- The OHA/OMA Communicable Diseases Surveillance Protocols are available at: <http://www.oha.com/Services/HealthSafety/Pages/CommunicableDiseasesSurveillanceProtocols.aspx>.
- For more information about influenza immunization requirements for HCWs, see PIDAC's *Infection Prevention and Control Programs in Ontario*, available at: <http://www.oahpp.ca/resources/pidac-knowledge/best-practice-manuals/infection-prevention-and-control-programs-in-ontario-in-all-health-care-settings-3rd-edition.html>

1. Influenza Immunization

Immunization is the first line of defence against influenza. Influenza vaccine is available free of charge to all who live, work or go to school in Ontario and, when used by a significant proportion of the population, can significantly reduce influenza incidence and prevalence.¹⁵ Influenza immunization has been shown to:

- prevent laboratory-confirmed influenza illness in approximately 70% or more of healthy individuals
- ameliorate the symptoms and duration of influenza in the elderly¹⁶
- be at least 60% effective in preventing hospitalization for pneumonia and influenza among elderly persons living in the community¹⁷
- be 50 to 60% effective in preventing hospitalization and 85% effective in preventing death in elderly persons living in long-term care homes.^{12-14, 18}

Many people at high risk of influenza-related complications¹⁴ (e.g., adults and children with underlying health conditions, people ≥ 65 years of age, children less than five years of age, those with morbid obesity, Aboriginal Peoples, residents of nursing homes and other chronic care facilities, pregnant women) receive care in Ontario health care settings. Influenza immunization of health care providers has been shown to reduce total patient mortality, influenza-like illness and serologically confirmed influenza.¹⁹ According to four randomized control trials, large-scale immunization of health care providers reduces nosocomial infections, including a decrease in mortality rates in residents of long-term care homes.^{12, 13, 18, 20} In acute care, two observational studies have found that lower health care worker immunization rates were associated with higher rates of laboratory-confirmed hospital-acquired influenza.^{21, 22}

For these reasons, it is particularly important for health care providers to be immunized. The National Advisory Committee on Immunization (NACI) recommends that high risk individuals and those who provide

care for them receive annual influenza immunization.¹⁴ Health care organizations should have a program to immunize health care providers.

Health care worker immunization rates in Ontario remain less than 50-60% (MOHLTC data), despite significant efforts to improve rates. An increasing number of organizations have demonstrated that institutional requirements for vaccination within health care agencies results in sustained increases in vaccination rates to more than 90%, with minimal attrition of staff.²³⁻²⁶ There is also evidence that stronger consequences for refusing vaccination are associated with higher health care worker vaccination rates.^{27, 28}

Annual influenza vaccination should be a condition of continued employment in, or appointment to, health care organizations.²⁹ Influenza immunization for health care providers involved in direct client/patient/resident care (including physicians, nurses, students, emergency response workers, employees of long-term care homes who have contact with residents, providers of home care, visiting nurses and volunteers) is a standard of care. “In the absence of contraindications to the vaccine, refusal to be immunized against influenza is a failure in a health care provider’s duty of care to patients”.¹⁴

Health care settings, Occupational Health Services and the professions should work together to improve HCW immunization rates. To make it as easy as possible for HCWs to comply with influenza immunization policies, health care settings should provide workplace immunization clinics.³⁰ Regular visitors to long-term care homes or to long stay patients in other settings should be encouraged to receive annual influenza immunization.

CONTRAINDICATIONS TO INFLUENZA IMMUNIZATION

Contraindications to influenza vaccine include¹⁴:

- anaphylactic reaction to a previous dose or any component of the vaccine;
- OR
- anyone known to have had Guillain-Barré Syndrome within six weeks of receiving influenza vaccine in the past.

Individuals with allergy to eggs may now be safely immunized with some types of vaccine.¹⁴ Expert consultation is advised.

HCWs with medical contraindications to influenza vaccination should be accommodated by reassignment, or other methods used to protect patients and HCWs (e.g., HCW wearing mask in client/patient/resident care areas) during influenza season.²⁹

*Pregnancy and breast feeding are **not** contraindications to influenza vaccine. Indeed, inactivated influenza vaccine is recommended during pregnancy and either active or inactivated vaccine for breast feeding, as pregnant women and newborns are at high risk for complications of influenza.*^{14, 31-33}

INFLUENZA OUTBREAKS

During seasonal influenza activity in the community, clinical infection rates range from 10% to 30% in the general population. In closed populations, such as patients/residents in hospitals and long-term care homes, attack rates in patients/residents may exceed 50%. To protect vulnerable patients/residents during an outbreak, health care providers who have confirmed influenza infection, or similar symptoms to other outbreak-associated cases (i.e., presumed influenza), or who have not been immunized and are not taking antiviral prophylaxis, should be excluded from work.¹⁹ Antiviral prophylaxis should not replace annual influenza immunization.

2. Pertussis Immunization

Pertussis is a vaccine preventable disease. In recent years (2004 - 2009) the incidence of pertussis has increased in Ontario and adults have been increasingly recognized as a main reservoir for pertussis infection, particularly for infants who are in hospital.³⁴ Outbreaks of pertussis in health care facilities have been reported in the literature,^{2-4, 6, 7} and HCWs have both acquired and introduced pertussis during several outbreaks.^{2, 3, 5-7, 35-37}

Previous immunization against pertussis or a history of natural pertussis infection does not provide lifelong immunity. There is no routine antibody testing available to determine immune status to pertussis. All HCWs working with patients may be considered at high risk of exposure to pertussis and should be considered susceptible.³⁸ One dose of tetanus/ diphtheria/ acellular pertussis (Tdap) is recommended for all adults, including health care workers.

Recommendations

- 1. Annual influenza vaccination should be a condition of continued employment in, or appointment to, health care organizations. [AI]**
- 2. Influenza immunization should be easily accessible and be promoted in the workplace. [All]**
- 3. All health care settings shall have HCW policies in place consistent with the Ontario Hospital Association/Ontario Medical Association Joint Influenza Surveillance Protocol for Ontario Hospitals.**
- 4. All adults, including health care workers, should receive one dose of tetanus/ diphtheria/ acellular pertussis (Tdap) vaccine.**

B. Surveillance and Reporting of Acute Respiratory Infections

All health care settings should adopt and maintain appropriate surveillance and infection prevention and control practices to protect against respiratory infections. These measures should be practiced as routinely as other health and safety measures in the workplace.

Surveillance and reporting of ARI will:

- prevent transmission of droplet-spread respiratory infection to other clients/patients/residents and to HCWs
- help the health care setting quickly detect and contain clusters and outbreaks of common respiratory infections
- help the health care setting detect and contain any new or virulent microorganism causing ARIs.

In 2005 the MOHLTC updated Regulation 569³⁹ of the *Health Protection and Promotion Act*,⁴⁰ which sets out clearly the type of information that hospitals and other health care institutions are required to report in relation to respiratory infection outbreaks.

- Refer to the *Health Protection and Promotion Act*, R.R.O. 1990, Regulation 569, available at: <http://www.search.e-laws.gov.on.ca/en/isysquery/bd33c95d-e915-4554-b186-5329a3eabf28/12/doc/?search=browseStatutes&context=#hit1>.

In the event of an outbreak of an ARI, health care settings should initiate appropriate control measures and shall contact their local public health unit (see Section B.2, *Documenting and Reporting Surveillance Results*) and follow appropriate outbreak management procedures.

- Refer to the Ministry of Health and Long-Term Care's *A Guide to the Control of Respiratory Infection Outbreaks in Long-Term Care Homes*⁴¹ for guidance in the prevention, detection and management of

outbreaks of respiratory infections. Available at:

http://www.health.gov.on.ca/english/providers/pub/pubhealth/lrc_respoutbreak/lrc_respoutbreak.html.

1. Case Finding/Surveillance for Acute Respiratory Infection

ARIs can be introduced into a health care setting by clients/patients/residents, HCWs and/or visitors. The purpose of case finding/surveillance is to identify individuals with ARI who may pose a risk to others in order to put preventive measures in place to reduce or eliminate transmission.

The steps required for case finding/surveillance may be incorporated into an algorithm to assist health care providers in directing the client/patient/resident's movements and to ensure that preventive measures are taken to protect HCWs and others.

- Refer to [Appendix A](#), 'Case Finding/Surveillance Algorithm for Acute Respiratory Infection', for case finding/surveillance algorithm.

CASE FINDING FOR ARI IN HEALTH CARE FACILITIES

There are two types of case finding/surveillance – active and passive (Box 1). Each health care setting should develop surveillance systems based on these types.

BOX 1: Types of Case Finding/Surveillance Methods

Active Case Finding/Surveillance

- Clients/patients/residents and HCWs are asked about possible respiratory symptoms on arrival at the health care setting.
- The individual asking the initial questions should maintain at least a two metre distance from the client/patient/resident or be protected by a glass or other solid, transparent barrier.
- On inpatient and residential units in health care facilities, patients/residents are checked daily for respiratory symptoms and a summary report of symptomatic individuals is kept

- Refer to [Appendix B](#), 'Sample Form for Active Case Finding of Acute Respiratory Infection on Entry to Health Care Settings', for a sample case finding/surveillance form that may be adapted to the health care setting.
- Refer to [Appendix E](#), 'Sample Daily Acute Respiratory Infection Surveillance/Reporting Tool for Inpatient and Residential Settings' for a sample summary form for active surveillance that may be adapted to health care facilities.

Passive Case Finding/Surveillance

- Signage directs the client/patient/resident or HCWs to self-assess and self-identify themselves if they have respiratory symptoms.

- Refer to [Appendix C](#), 'Sample Signage for Passive Case Finding of Acute Respiratory Infection at Entrance to Health Care Facilities', for sample signage that may be adapted to the health care setting.

Some health care settings use both active and passive approaches: signage that directs clients/patients/residents who have symptoms to take certain precautions, together with follow-up questions by the first health care provider contact in the health care setting that confirm that the client/patient/resident has read and understood the sign. This is particularly important where age, language or disability may be a barrier to a client/patient/resident reading a sign and following instructions.

The decision to conduct active or passive case finding/surveillance will depend on the physical set up of the office/clinic or department, the type of care provided and the risk of transmission (e.g., a setting where HCWs have little direct face-to-face contact with clients/patients/residents may choose to use passive case finding/surveillance). Some health care settings may choose to use a passive approach when there are no travel health notices or community influenza activity, and shift to a more active approach during times when there is more ARI activity. Health care facilities should be aware of respiratory virus activity in their local communities.

- Refer to the Ontario Respiratory Virus Bulletin for information regarding respiratory virus activity in Ontario, available at: <http://www.oahpp.ca/resources/ontario-respiratory-virus-bulletin.html>.

See [Table 1](#) for a summary of ARI case finding/surveillance types per population/health care setting.

HOW TO CONDUCT SURVEILLANCE FOR ARI IN HEALTH CARE FACILITIES

Initial Encounter

It is necessary to assess each client/patient/resident on initial encounter with the health care setting for symptoms of an ARI and to document that the assessment has been completed. It is not necessary to maintain a separate paper document. Surveillance intensity may increase at different times of the year, depending on ARI activity in the community.

Some health care settings prefer to use a written or electronic tool (refer to [Appendix B](#), ‘Sample Form for Active Case Finding of Acute Respiratory Infection on Entry to Health Care Settings’) to document their case finding/surveillance activities. Other centres establish a practice of making a note on the client/patient/resident’s chart when an ARI has been identified and precautions have been initiated.

Ongoing Daily Surveillance

Health care facilities must develop a process for ongoing assessment of admitted patients/residents according to the Routine Practices risk assessment, to identify new onset of ARI. An infection surveillance/reporting tool will simplify the identification and follow-up of patients/residents with ARI. Other case finding methods include reports from nursing staff, chart review, face-to-face rounding by ICPs on nursing units/floors, use of surveillance tools on nursing units/floors, laboratory or radiology reports, treatment review and clinical observations.

- Refer to [Appendix E](#), ‘Sample Daily Acute Respiratory Infection Surveillance/Reporting Tool for Inpatient and Residential Settings’, for a sample chart which may be used to track ARI within the health care facility.

Each new acquisition of ARI within the health care facility should prompt an investigation. When a new case of ARI is first identified in a patient/resident, a determination should be made as to whether the infection was acquired in the facility and appropriate steps should be taken to contain the infection and to look for additional cases.

Case Finding for ARI in HCWs

HCWs with symptoms of ARI should notify their manager and report to Occupational Health and Safety (OHS) or designate. Managers who experience clusters of HCWs with ARI should report this to OHS and Infection Prevention and Control (IPAC).

CASE FINDING FOR ARI IN HOME CARE

Case finding/surveillance for clients receiving home care should be ongoing. This case finding/surveillance can be done using a number of approaches. For example:

- When patients requiring Additional Precautions are discharged from hospital, the hospital should ensure that the information is communicated to the agency providing home care and ask the patient or a family member to inform the home care provider.
- The agency responsible for managing the care should contact a new client within 24 hours of the first scheduled visit, inquire about the presence of ARI and ask the client to inform home care providers if he/she develops respiratory symptoms. If the agency is unable to reach the client by phone, the health care provider should ask the questions before providing services.
- For subsequent visits, the client (or a family member) can be asked to self-assess for symptoms of ARI and notify home care providers when he/she arrives at the home, or the health care provider can start each encounter by asking about any symptoms of ARI.

The type of approach an agency uses will depend on whether the client is a new or long-term client, and on the client's (family's) capacity to self-assess. When home care clients have symptoms of an ARI, home care providers should be equipped with and use suitable preventive practices, including Droplet and Contact Precautions (see [Table 2](#)).

- See Section 2.B in PIDAC's *Routine Practices and Additional Precautions in All Health Care Settings* for details regarding Droplet and Contact Precautions, available at: <http://www.oahpp.ca/resources/pidac-knowledge/best-practice-manuals/routine-practices-and-additional-precautions.html>.

Table 1: Summary of Application of ARI Case Finding/Surveillance Types

HEALTH CARE SETTING/POPULATION	ROUTINE SURVEILLANCE (in absence of outbreak)		OUTBREAK OR INCREASED COMMUNITY INCIDENCE OF ARI	APPENDIX REFERENCE
	ACTIVE (e.g., charting, written tools)	PASSIVE (e.g., signage, self-reporting)		
Pre-hospital Care	✓		Active surveillance	B
Emergency Department	✓	✓	Passive surveillance at entry, active surveillance at triage	B, C
Acute Care - inpatient units	✓		Active surveillance	E
Long-Term Care, Complex Continuing Care, Rehabilitation Hospital	✓	✓	Active surveillance for duration of outbreak/increased incidence	E
Ambulatory Care (e.g., clinics, physician offices)		✓	Active surveillance for duration of outbreak/increased incidence	C
Home Care Visits	✓		Active surveillance	B
Health Care Workers		✓	Passive surveillance (self-reporting)	C
Visitors		✓	Passive surveillance (signage and self-reporting)	C

Recommendations

5. *Case finding/surveillance for clients/patients/residents can be done using an active, passive or combined approach. [CIII]*
6. *All health care settings should ensure they have the ability to identify cases of acute respiratory infection and to detect clusters or outbreaks of acute respiratory infection. [CIII]*
7. *All clients/patients/residents who present at a health care setting should be assessed for symptoms of acute respiratory infection using the 'Case Finding/Surveillance Algorithm for Acute Respiratory Infection'. [CIII]*
8. *Clients receiving care in their homes should be assessed for symptoms of acute respiratory infection using the 'Case Finding/Surveillance Algorithm for Acute Respiratory Infection'. [CIII]*
9. *Health care facilities should perform ongoing daily assessment of inpatients/residents for acute respiratory infection. [BII]*

2. Documenting and Reporting Surveillance Results

Reporting ARI is necessary to ensure that health care settings, HCWs and public health authorities have the information they need to prevent and control the spread of ARIs. Each health care setting should set up a reporting framework to ensure that the legislated reporting requirements are met.

REPORTING CLIENTS/PATIENTS/RESIDENTS WITH ARI

Physicians and facility administrators/superintendents must notify public health about clients/patients/residents who have, or may have, a reportable disease as well as outbreaks of ARI.³⁹ New cases of ARI in inpatients/ residents should be reported to Infection Prevention and Control by nursing/resident care units.

If a health care facility experiences a respiratory outbreak, surveillance information must be communicated internally and externally whenever a patient/resident is transferred to another health care setting.

Public health must be notified early when any of the following occur in a health care setting:

- unusual clusters of ARI
- single cases of ARI with recent travel to a country with a Public Health Agency of Canada (PHAC) travel health notice for ARI
- single cases of ARI who have had contact with a person with ARI who has recently travelled to a country with a PHAC travel health notice for ARI.

Effective communication with public health can assist in early identification of an outbreak.

- For more information about the requirements for reporting to public health, see the *Health Protection and Promotion Act*, Regulation 569, available at:
http://www.search.e-laws.gov.on.ca/en/isysquery/c5473138-a93a-48For_13-867b-9bcf4f15ec6d/1/frame/?search=browseStatutes&context=
- For more information about travel health notices from the Public Health Agency of Canada see:
http://www.phac-aspc.gc.ca/tmp-pmv/2009/h1n1_global-090914-eng.php

REPORTING HCWS WITH ARI

Close liaison between IPAC and OHS is essential to ensure post-exposure and outbreak management, including contact tracing.²⁹ HCW clusters of ARI are reported non-nominally to Infection Prevention and Control by OHS to protect the HCW's right to confidentiality.

OHS or a designate must notify public health about HCWs who have, or may have, a reportable disease as well as outbreaks of ARI in HCWs.⁴⁰ If the ARI is occupationally-acquired, this must also be reported to the Ministry of Labour and to the Workplace Safety and Insurance Board (WSIB).

- See the Health Protection and Promotion Act for legislated reporting requirements, available at: http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90h07_e.htm.
- See the Occupational Health and Safety Act for reporting requirements for occupationally-acquired ARI, available at: http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90o01_e.htm.

Recommendations

- 10. The health care setting must ensure that all HCWs who provide care for a client/patient/resident with symptoms of an acute respiratory infection are aware of the need to initiate and maintain Droplet and Contact Precautions. [BII]**
- 11. Each health care setting should have a policy authorizing any regulated health care professional to initiate the appropriate Additional Precautions at the onset of symptoms and maintain precautions until laboratory results are available to confirm or rule out the diagnosis. [BII]**
- 12. Once the need for Droplet and Contact Precautions has been established, any receiving unit/facility or diagnostic service must be informed. [CIII]**

C. Interventions for the Prevention and Control of Acute Respiratory Infection

1. Additional Precautions for Acute Respiratory Infection

Clients/patients/residents who arrive in a health care setting with symptoms of an ARI should be managed using Routine Practices, Droplet and Contact Precautions to protect health care workers, clients/patients/residents and others. It should be kept in mind that not everyone with an ARI will exhibit fever, which is dependent on host and pathogen factors.⁴²

Health care providers should maintain an increased awareness that, during influenza season, individuals presenting with acute, apparently non-infectious cardiopulmonary illnesses (e.g., congestive heart failure, exacerbations of chronic obstructive pulmonary disease or asthma) may have influenza⁴³⁻⁴⁷ and only half of patients admitted to hospital for influenza exhibit classic symptoms.⁴⁷

Specific IPAC measures for Routine Practices and Droplet and Contact Precautions include:

- Provide alcohol-based hand rub, masks and tissues at the point(s) of reception.
- Ask the client/patient/resident to perform hand hygiene (i.e., apply an alcohol-based hand rub to his/her hands).
- Advise the client/patient/resident to practice respiratory etiquette when coughing or sneezing:
 - Turn the head away from others.
 - Cover the nose and mouth with tissue.

- Discard tissues immediately after use into waste.
- Perform hand hygiene immediately after disposal of tissues.
- Have the client/patient/resident wear a mask, if tolerated, to protect other clients/patients/residents and HCWs in common waiting areas:
 - Not all clients/patients/residents will be able to tolerate masks (e.g., children, people with chronic breathing problems, those with cognitive impairment).
 - If masks are not available or not tolerated, clients/patients/residents should be encouraged to use another method to cover their mouth and nose when coughing or sneezing (e.g., tissue).
- Maintain a spatial separation of at least two metres:
 - Place client/patient/resident in a separate area away from crowded waiting areas.
 - Maintain a distance of at least two metres from other clients/patients/residents.
- Single room accommodation is preferred in acute care. If not available, see Section 2.B and Appendix C in PIDAC'S *Routine Practices and Additional Precautions in All Health Care Settings* for decision-making related to alternative accommodation.
- Visitors should not visit if they have an ARI.

Table 2 summarizes the additional infection prevention and control precautions required to manage clients/patients/residents with ARI in the health care setting. Detailed information may be found in PIDAC'S *Routine Practices and Additional Precautions for All Health Care Settings*.

- See Appendix N in *Routine Practices and Additional Precautions for All Health Care Settings* for a list of specific infections requiring Droplet and Contact Precautions, available at: <http://www.oahpp.ca/resources/pidac-knowledge/best-practice-manuals/routine-practices-and-additional-precautions.html>.

Duration of Precautions

Additional Precautions should remain in place until there is no longer a risk of transmission of the microorganism or illness. Where the periods of communicability are known, precautions may be discontinued at the appropriate time.

Continue Additional Precautions until an aetiology for the ARI is available. If an aetiology is obtained, use Additional Precautions as appropriate (refer to Appendix N, "Clinical Syndromes/Conditions with Required Level of Precautions", in PIDAC'S *Routine Practices and Additional Precautions in All Health Care Settings*, available at: <http://www.oahpp.ca/resources/pidac-knowledge/best-practice-manuals/routine-practices-and-additional-precautions.html>).

If no aetiology is determined, reassess daily and discontinue precautions when:

- patient is from a facility with a respiratory outbreak, is asymptomatic and the incubation period for the outbreak organism has passed since their last exposure
- patient has a diagnosis other than respiratory infection that accounts for symptoms (e.g., bacteremia, confirmed urosepsis)
- respiratory symptoms are improving (e.g., cough, SOB, FiO₂ requirements, wheezing, sputum production), fever has been <38°C for 48 hours.

Recommendations

13. *Clients/patients/residents presenting for care in a health care setting who have symptoms of acute respiratory infection should be asked to perform hand hygiene and wear a mask, practice respiratory etiquette and either wait in a separate area or keep at least two metres away from other clients/patients/residents and HCWs. [All]*
14. *Whenever possible, patients who have symptoms of an acute respiratory infection who are admitted to a hospital should be accommodated in a single room under Droplet and Contact Precautions. [All]*
15. *Residents of long-term care homes with an acute respiratory infection who are not in single room accommodation should be managed in their bed space using Droplet and Contact Precautions with privacy curtains drawn. [All]*

Table 2: Elements That Comprise Droplet and Contact Precautions for Acute Respiratory Infection (in addition to Routine Practices)

Element	Acute Care	Complex Continuing Care	Long-term Care	Ambulatory/ Clinic Setting	Home Health Care
Accommodation	Door may be open				Not applicable
	Single room with dedicated toilet and patient sink preferred	Patient/resident to remain in room or bed space if feasible, or wear a mask (if tolerated) if coughing or sneezing within two metres of other patients, until no longer infectious		Triage client/patient away from waiting area to a single room as soon as possible, or maintain a two-metre spatial separation	
	Cohorting of those who are laboratory-confirmed to have the same infectious agent may be acceptable	Draw privacy curtain		Patient to wear a mask for duration of visit and perform hand hygiene	
	Remain in room unless required to leave for diagnostic, therapeutic or ambulation purposes				
Signage	Yes				Not applicable
Facial Protection	Within two metres of client/patient/resident				
Gloves	For all activities in the room/bed space		For direct care (see <i>Glossary</i>)		

Element	Acute Care	Complex Continuing Care	Long-term Care	Ambulatory/ Clinic Setting	Home Health Care
Gown	For all activities where skin or clothing will come in contact with the patient or the patient's environment		For direct care (see <i>Glossary</i>)		
Equipment and items in the environment	Dedicate if possible				
	Clean and disinfect shared items				As per Routine Practices
	Chart (paper or mobile electronic) should not be taken into the room				
Environmental Cleaning	Routine cleaning. Clean frequently touched surfaces in bed space and bathroom daily and before discontinuing precautions of a client/patient/resident with a confirmed viral respiratory infection.				Routine household cleaning
	Remove and launder all curtains (privacy, shower) when visibly soiled and on discharge/transfer cleaning				
Transport	Limit transport unless required for diagnostic or therapeutic procedures				Not applicable
	Client/patient/resident to wear a mask during transport.				
	Transport staff wear gloves and gown for direct contact with the client/patient/resident during transport. Clean and disinfect equipment used for transport after use.				
Communication	Effective communication regarding precautions must be given to patient families, other departments, other facilities and transport services prior to transfer				

2. Healthy Workplace Policies

IPAC and OHS programs must work collaboratively to decrease the risk of health care-acquired infections in clients/patients/residents and health care workers.²⁹

Influenza and other respiratory viruses (e.g., RSV, human metapneumovirus, coronavirus, rhinovirus), which may cause common cold-like symptoms in healthy adults, can cause severe lower respiratory tract infection in patients with co-morbid conditions, infants/young children and the frail elderly.⁴⁸⁻⁵¹ Health care providers with ARI who work with clients/patients/residents can both initiate and prolong ARI outbreaks.

Attendance management policies should enable HCWs to remain home while ill with an ARI that can be spread in the health care setting. There should be a clear expectation in all health care settings that HCWs do not come to work when ill with an ARI.

If symptoms start while at work, HCWs should go home. Managers or supervisors who observe staff who are at work with a suspected ARI should refer them to OHS or send them home.

Recommendations

16. **Health care facilities should have established procedures for notifying Infection Prevention and Control regarding:**
 - a) **any patients/residents either admitted with, or who develop, acute respiratory infection so they can monitor the situation; and**
 - b) **any clusters of acute respiratory infection in either health care providers or patients/residents. [BII]**
17. **Health care workers who develop symptoms of an acute respiratory infection must report their condition to their Occupational Health and Safety department or delegate. [BII]**
18. **Infection Prevention and Control should alert Occupational Health Services (OHS) about any clusters of acute respiratory infections in patients/residents so OHS can monitor health care providers. OHS should alert (non-nominally) Infection Prevention and Control of any clusters of acute respiratory infection among health care providers. [BII]**
19. **Employers shall report any occupationally-acquired infection to the Joint Health and Safety Committee or delegate.**
20. **Health care setting administrators, laboratories and community/attending physicians shall report to the local Medical Officer of Health when a client/patient/resident has a new respiratory infection AND a recent travel history to a country with a Public Health Agency of Canada travel health notice for respiratory infection; OR contact with someone with an ARI and recent travel history to a country with a travel health notice for respiratory infection.**

NOTE: It is not necessary to have laboratory confirmation before reporting.
21. **Health care setting administrators, laboratories and community/attending physicians shall report to the local medical officer of health when:**
 - a) **the aetiology of an acute respiratory infection is a reportable disease; or**
 - b) **there is an outbreak or cluster of acute respiratory infection in any health care facility.**
22. **If a health care provider develops an occupationally-acquired infection, his or her employer shall report the illness to the Ministry of Labour in accordance with occupational health and safety legislation.**
23. **If a health care provider develops an occupationally-acquired infection, his or her employer shall report the illness to the Workplace Safety and Insurance Board (WSIB) within three (3) working days.**
24. **All external reporting procedures shall comply with the relevant legislation, including the Health Protection and Promotion Act, the Personal Health Information Protection Act, 2004, the Occupational Health and Safety Act, and the Workplace Safety and Insurance Act, 1997.**

D. Summary of Recommendations for Prevention and Transmission of Acute Respiratory Infection (ARI) In All Health Care Settings

This summary table is intended to assist with self-assessment internal to the health care setting for quality improvement purposes. See complete text for rationale.

	Recommendation	Compliant	Partial Compliance	Non-compliant	Action Plan	Accountability
A. STAFF IMMUNIZATION						
1.	<i>Annual influenza vaccination should be a condition of continued employment in, or appointment to, health care organizations. [AI]</i>					
2.	<i>Influenza immunization should be easily accessible and be promoted in the workplace. [AII]</i>					
3.	<i>All health care settings shall have HCW policies in place consistent with the Ontario Hospital Association/Ontario Medical Association Joint Influenza Surveillance Protocol for Ontario Hospitals.</i>					
4.	<i>All adults, including health care workers, should receive one dose of tetanus/ diphtheria/ acellular pertussis (Tdap) vaccine.</i>					
B. SURVEILLANCE AND REPORTING OF ACUTE RESPIRATORY INFECTIONS						
5.	<i>Case finding/surveillance for clients/patients/residents can be done using an active, passive or combined approach. [CIII]</i>					

	Recommendation	Compliant	Partial Compliance	Non-compliant	Action Plan	Accountability
6.	<i>All health care settings should ensure they have the ability to identify cases of acute respiratory infection and to detect clusters or outbreaks of acute respiratory infection. [CIII]</i>					
7.	<i>All clients/patients/residents who present at a health care setting should be assessed for symptoms of acute respiratory infection using the 'Case Finding/Surveillance Algorithm for Acute Respiratory Infection'. [CIII]</i>					
8.	<i>Clients receiving care in their homes should be assessed for symptoms of acute respiratory infection using the 'Case Finding/Surveillance Algorithm for Acute Respiratory Infection'. [CIII]</i>					
9.	<i>Health care facilities should perform ongoing daily assessment of inpatients/residents for acute respiratory infection. [BII]</i>					
10.	<i>The health care setting must ensure that all HCWs who have contact with a client/patient/resident with symptoms of an acute respiratory infection are aware of the need to initiate and maintain Droplet and Contact Precautions. [BII]</i>					
11.	<i>Each health care setting should have a policy authorizing any regulated health care professional to initiate the appropriate Additional Precautions at the onset of symptoms and maintain precautions until laboratory results are available to confirm or rule out the diagnosis. [BII]</i>					

	Recommendation	Compliant	Partial Compliance	Non-compliant	Action Plan	Accountability
12.	<i>Once the need for Droplet and Contact Precautions has been established, any receiving unit/facility or diagnostic service must be informed. [CIII]</i>					
C. INTERVENTIONS FOR THE PREVENTION AND CONTROL OF ACUTE RESPIRATORY INFECTION						
13.	<i>Clients/patients/residents presenting for care in a health care setting who have symptoms of acute respiratory infection should be asked to perform hand hygiene and wear a mask, practice respiratory etiquette and either wait in a separate area or keep at least two metres away from other clients/patients/residents and HCWs. [AII]</i>					
14.	<i>Whenever possible, patients who have symptoms of an acute respiratory infection who are admitted to a hospital should be accommodated in a single room under Droplet and Contact Precautions. [AII]</i>					
15.	<i>Residents of long-term care homes with an acute respiratory infection who are not in single room accommodation should be managed in their bed space using Droplet and Contact Precautions with privacy curtains drawn. [AII]</i>					

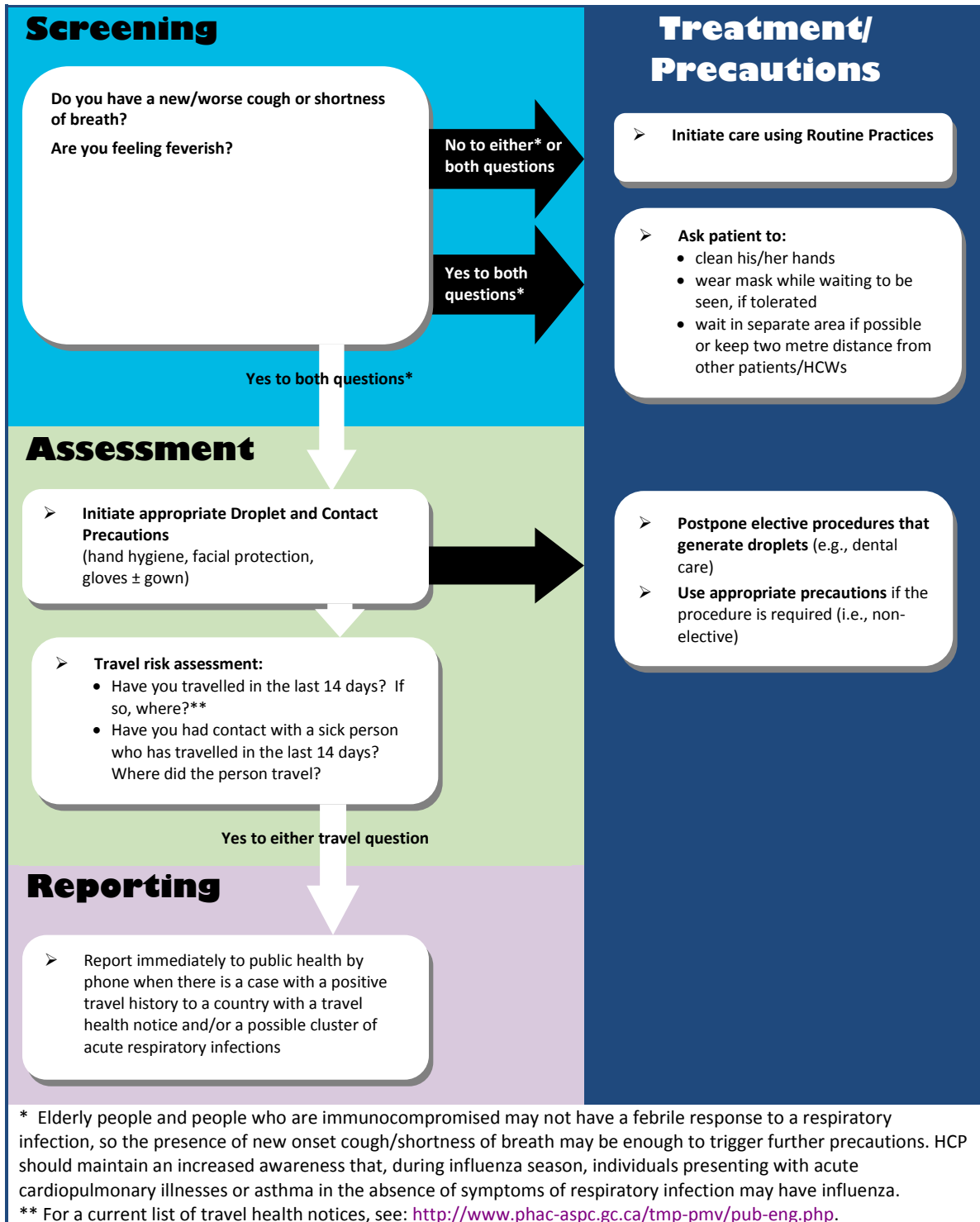
	Recommendation	Compliant	Partial Compliance	Non-compliant	Action Plan	Accountability
16.	<i>Health care facilities should have established procedures for notifying Infection Prevention and Control regarding:</i> <i>a) any patients/residents either admitted with, or who develop, acute respiratory infection so they can monitor the situation; and</i> <i>b) any clusters of acute respiratory infection in either health care providers or patients/residents. [BII]</i>					
17.	<i>Health care workers who develop symptoms of an acute respiratory infection must report their condition to their Occupational Health and Safety department or delegate. [BII]</i>					
18.	<i>Infection Prevention and Control should alert Occupational Health Services (OHS) about any clusters of acute respiratory infection in patients/residents so OHS can monitor health care providers. OHS should alert (non-nominally) Infection Prevention and Control of any clusters of acute respiratory infection among health care providers. [BII]</i>					
19.	<i>Employers shall report any occupationally-acquired infection to the Joint Health and Safety Committee or delegate.</i>					

	Recommendation	Compliant	Partial Compliance	Non-compliant	Action Plan	Accountability
20.	<p><i>Health care setting administrators, laboratories and community/attending physicians shall report to the local Medical Officer of Health when a client/patient/resident has a new respiratory infection</i></p> <p>AND</p> <p><i>a recent travel history to a country with a Public Health Agency of Canada travel health notice for respiratory infection</i></p> <p>OR</p> <p><i>contact with someone with an ARI and recent travel history to a country with a travel health notice for respiratory infection.</i></p> <p>NOTE: It is not necessary to have laboratory confirmation before reporting.</p>					
21.	<p><i>Health care setting administrators, laboratories and community/attending physicians shall report to the local medical officer of health when:</i></p> <p><i>a) the aetiology of an acute respiratory infection is a reportable disease; or</i></p> <p><i>b) there is an outbreak or cluster of acute respiratory infection in any health care facility.</i></p>					
22.	<p><i>If a health care provider develops an occupationally-acquired infection, his or her employer shall report the illness to the Ministry of Labour in accordance with occupational health and safety legislation.</i></p>					

	Recommendation	Compliant	Partial Compliance	Non-compliant	Action Plan	Accountability
23.	<i>If a health care provider develops an occupationally-acquired infection, his or her employer shall report the illness to the Workplace Safety and Insurance Board (WSIB) within three (3) working days.</i>					
24.	<i>All external reporting procedures shall comply with the relevant legislation, including the Health Protection and Promotion Act, the Personal Health Information Protection Act, 2004, the Occupational Health and Safety Act, and the Workplace Safety and Insurance Act, 1997.</i>					

Appendices

Appendix A: Initial Decision-making for Those Presenting with ARI



Appendix B: Sample Form for Active Case Finding of Acute Respiratory Infection on Entry to Health Care Settings

Case Finding/Surveillance Questionnaire for Acute Respiratory Infection

- (i) Do you have new/ worse cough or shortness of breath?
- If 'no', stop here (no further questions)
 - If 'yes', continue with next question
- (ii) Are you feeling feverish*, or have you had shakes or chills in the last 24 hours?
- If 'no', take temperature; if $>38^{\circ}\text{C}$, continue with next questions, otherwise stop (no further questions)
 - If 'yes', take temperature and continue with next questions

***NOTE: Some people, such as the elderly and people, who are immunocompromised, may not develop a fever.**



If the answer to both questions (i) and (ii) is 'yes', or if the answer to question (i) is 'yes' and the recorded temperature is $>38^{\circ}\text{C}$, initiate Droplet and Contact Precautions and notify Infection Prevention and Control



- (iii) Is either of the following true?
- Have you traveled within the last 14 days? Where**? or
 - Have you had contact in the last 14 days with a sick person who has traveled? Where**?

****For a current list of Public Health Agency of Canada travel health notices, see:**

<http://www.phac-aspc.gc.ca/tmp-pmv/pub-eng.php>

For additional information please consult with your local public health unit.



Infection Prevention and Control should notify Public Health by phone when case has a positive travel history and/or there is a possible cluster/outbreak.

Appendix C: Sample Signage for Passive Case Finding of Acute Respiratory Infection at Entrance to Health Care Facilities

NOTE: All signs posted in a health care setting should be translated into all languages that are predominant/common within the community.



Read Carefully

**Do you have a NEW or WORSE cough or shortness of breath?
Are you feeling feverish?**

If the answer to these questions is **YES** and **you are a patient:**

Clean your hands

AND

**If you have a cough, put on a mask or use a tissue to cover your mouth
while coughing**

AND

Tell the receptionist or nurse right away

ATTENTION VISITORS

**This facility is experiencing an outbreak of
respiratory illness.**



DO NOT VISIT IF YOU ARE ILL.

If you have a cold or flu-like symptoms such as fever, runny nose, cough or muscle aches, please do not visit until your symptoms are gone.

CLEAN YOUR HANDS.

Clean your hands **before** and **after** your visit.
Alcohol hand rub is conveniently located for your use.

CHECK IN ON ARRIVAL.

Check in with the Nursing Staff when you arrive on a unit.

LIMIT YOUR VISIT TO ONE PERSON.

THANK YOU FOR YOUR CO-OPERATION!

ATTENTION VISITORS

Our community is experiencing an increase in respiratory infections.



DO NOT VISIT IF YOU ARE ILL.

If you have a cold or flu-like symptoms such as fever, runny nose, cough or muscle aches, please do not visit until your symptoms are gone.

CLEAN YOUR HANDS.

Clean your hands **before** and **after** your visit.

Alcohol hand rub is conveniently located for your use.

LIMIT YOUR VISIT TO ONE PERSON.

THANK YOU FOR YOUR CO-OPERATION!

Appendix E: Sample Daily Acute Respiratory Infection Active Surveillance/Reporting Tool for Inpatient and Residential Settings

Date: _____

Patient Unit: _____

Each shift is to update this form.

Any **NEW** onset of symptoms of fever* AND cough or shortness of breath, and/or **NEW** clinical/radiologic diagnosis of pneumonia in patients must be reported to the attending physician and Infection Prevention and Control.

Name/ Hospital File Number/ Room No.	Admission Date	Date of new onset symptoms/ diagnosis	Fever > 38°C*	Cough	Shortness of Breath	Hypoxia (O2 Sat <92%)	Droplet and Contact Precautions (Yes or No)	Action(s)	Initials

* NOTE: Some people, such as the elderly and those who are immunocompromised, may not develop a fever.

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