Routine Practices and Additional Precautions

Across the Continuum of Care

Department of Health & Community Services

Population Health Branch

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Introduction

The purpose of this guideline, *Routine Practices and Additional Precautions Across the Continuum of Care,* is to outline the infection prevention and control (IPAC) practices required to reduce the risk of transmission of microorganisms in healthcare settings in the province of Newfoundland and Labrador. This guideline is based on the recommendations from the Public Health Agency of Canada's *Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Healthcare Settings* document published in 2012. The continuum of care refers to any setting where health care is provided including prehospital care, acute care, long-term care (LTC), ambulatory care, facilities in the community and home care. Although the basic principles of IPAC must be applied consistently regardless of the care setting it is important to take into consideration local conditions such as the type of healthcare setting and the risk of acquiring infection in that particular setting. Modifications in the application of the principles of IPAC are sometimes required both in and outside the acute care setting.

Healthcare workers (HCWs) are individuals who provide health care to a patient, resident or client. This includes but is not limited to nurses, physicians, dentists, nurse practitioners, paramedics and sometimes emergency first responders, allied health professionals, unregulated healthcare providers, clinical instructors and students, volunteers and housekeeping staff. Healthcare workers have varying degrees of responsibility related to the health care they provide, depending on their level of education and their specific job/responsibilities. The term "patient" will be used in the remainder of this guideline to denote care to patients, residents or client populations.

Guideline Working Group

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Basic Principles

The traditional model of infectious disease causation is the epidemiologic triad: the agent, host and environment. Infection involves an interrelationship between the agent (such as a virus or bacterium), the susceptible host and the environment, that requires a pathway from the infectious agent to the host. The pathways are the portal of exit from the reservoir and the portal of entry into the host that are connected by a route of transmission. Transmission can be by five different routes: contact, droplet, airborne, common vehicle and vectorborne. The interrelationshhip is often shown as a framework known as the "chain of infection".

Chain of Infection

The chain of infection is shown as having six links: the infectious agent, the reservoir, the portal of exit, the route of transmission, the portal of entry and the host (Figure 1a). An infection can be prevented by breaking any one of the links in the chain (Figure 1b).

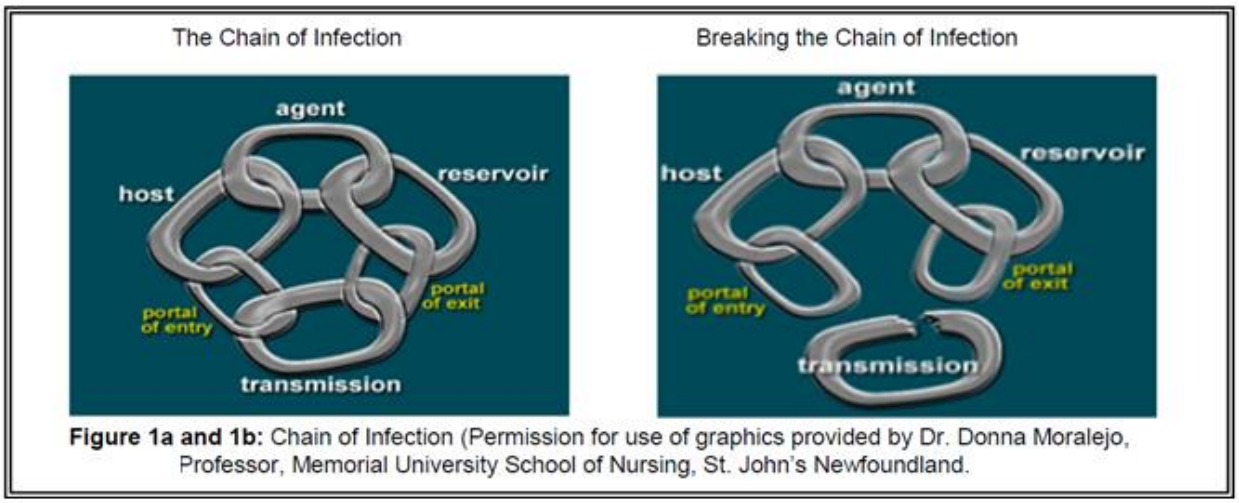


Figure 1a and 1b: Chain of Infection (Permission for use of graphics provided by Dr. Donna Moralejo, Professor, Memorial University School of Nursing, St. John's Newfoundland.

Routes of Transmission

The routes of transmission have been categorized as contact, droplet, airborne, common vehicle and vectorborne. Usually microorganisms are spread via one route but sometimes two routes are identified, such as with the influenza virus. Influenza can be spread by the droplet and contact routes.

Contact Transmission

Contact transmission is the most common route of transmission; it includes both direct contact and indirect contact contact modes.

Direct contact transmission occurs when microorganisms are transferred by direct physical contact between an infected or colonized source and a host, such as by shaking hands.

Indirect contact transmission occurs when the microorganisms are transferred via an intemediate object, such as contaminated hands that are not cleaned between episodes of patient care. Patient-care devices (e.g., glucose monitoring devices, electronic thermometers) may also transmit microorganisms if the devices are not cleaned and disinfected between use on patients.

Droplet Transmission

Droplet transmission occurs when droplets generated from the respiratory tract of the infected source are propelled through the air, usually a distance of less than two metres, and are deposited on the eyes, nose or mouth of a susceptible host. The droplets can also contaminate the environment when they settle on the surfaces around the infected person.

Airborne Transmission

Airborne transmission occurs when sprays of droplet nuclei generated from the respiratory tract of the infected source are propelled throught the air and are inhaled by a susceptible host. Droplet nuclei are so small (usually less than 1.5 micrometres) and light, that they may remain suspended in the air for several hours or can be widely dispersed by air currents.

Common Vehicle Transmission

Common-vehicle transmission refers to the transfer of microorganisms by a common inanimate vehicle (e.g., a contaiminated multi-dose vial) with multiple cases resulting from such an exposure.

Vector-borne Transmission

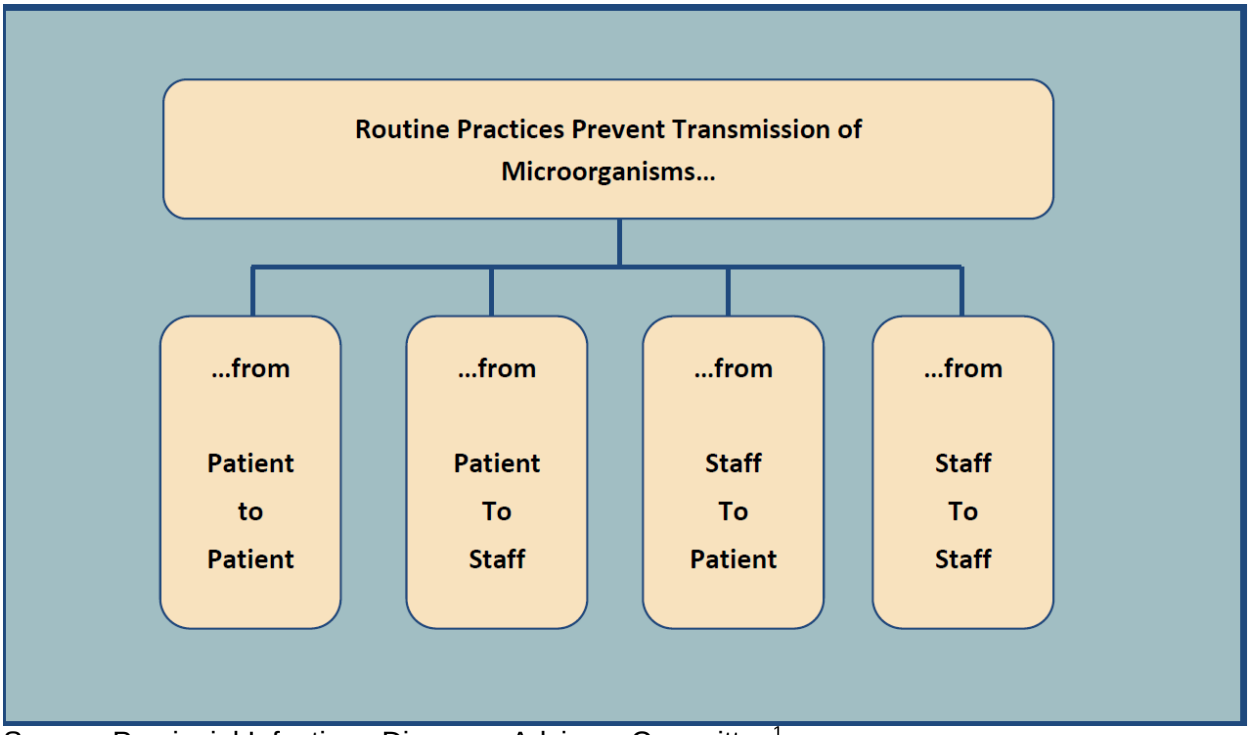
Vectorborne transmission refers to transmission of infection by insect vectors.

Routine Practices

Routine Practices (RP) are the IPAC practices that are to be used by all HCWs at all times in all healthcare settings for the routine care of all patients and are determined by the circumstance of the patient, the environment and the care to be provided. If consistently applied, Routine Practices can reduce the transmission of microorganisms in all healthcare settings. Microorganisms can be transmitted from symptomatic and asymptomatic individuals which emphasizes the importance of adhering to best practices at all times. Central to the elements of Routine Practices is a point-of-care risk assessment (PCRA) which will provide direction on the required IPAC practices and the personal protective equipment (PPE) required while providing care.

The goal of Routine Practices is to prevent transmission of microorganisms from patient to patient, from patient to staff, from staff to patient and from staff to staff as shown in Figure 2.

Figure 2: Goal of Routine Practices



Source: Provincial Infectious Diseases Advisory Committee[1]

Additional Precautions

Additional Precautions (AP) are used in addition to Routine Practices when transmission of a specific microorganism is not completely prevented by Routine Practices. The precautions may also be indicated when performing medical procedures which increase the risk of transmission of a specific infectious agent or when the clinical situation prevents consistent application of Routine Practices (e.g., care of an incontinent adult or young child). Modifications may be required to the application of Additional Precautions in certain settings and will be addressed in the specific care setting (long-term care, ambulatory care, home care and prehospital care).

[1] *This figure was adapted with permission from the Ontario Agency for Health Protection and Promotion (Public Health Ontario)/ Provincial Infectious Diseases Advisory Committee (PIDAC). PIDAC documents contain information that requires knowledgeable interpretation and is intended primarily for use by health care workers and facilities/organizations providing health care including pharmacies, hospitals, long-term care facilities, community-based health care service providers and pre-hospital emergency services in non-pandemic settings. Public Health Ontario assumes no responsibility for the content of any publication resulting from changes /adaptation of PIDAC documents by third parties.*

Roles and Responsibilities

1. Organizational Responsibilities

A major responsibility of organizations is to ensure that efforts have been undertaken to minimize the risk of exposure to and transmission of infections within the healthcare organization. The responsibility for the IPAC program in the healthcare setting lies primarily with the senior administration of the organization (PIDAC, 2012)[2].The Public Health Agency of Canada (2012a) recommends that an organizational risk assessment be conducted on an annual basis to determine situations/conditions where infectious hazards might exist and to assess the organization's administrative and engineering control measures in place to decrease these risks.

Administrative controls include organizational support for the following:

- A comprehensive infection prevention and control program with sufficient expert human resources and sufficient financial resources to ensure an effective infection prevention and control program appropriate to the organization's mandate for patient and staff safety
- An occupational health program that includes:
    - Ensuring healthcare worker immunity to vaccine-preventable diseases
    - Screening for tuberculosis
    - Providing a respiratory protection program
    - Promoting sharps safety and prevention of exposure to bloodborne pathogens
    - Managing ill healthcare workers and healthcare workers exposed to communicable infections
- An environmental cleaning program
    - Adequate resources to ensure that a clean and safe healthcare environment is maintained
- Medical device reprocessing program
    - Adequate resources to ensure that patient care equipment is cleaned, disinfected and sterilized, as indicated by use, and includes both:
        - Policies and procedures for the cleaning/disinfection of non-critical equipment (e.g., blood pressure cuff, wheel chairs)

[2] Ontario Agency for Health Protection and Promotion. Best Practices for Infection Prevention and Control Programs in All Health Care Settings.

        - Policies and procedures for cleaning, disinfection and/or sterilization of semi-critical and critical equipment (e.g., bronchoscopes, surgical instruments)

Engineering controls that must have infection prevention and control input include the following:

- Healthcare facility design, renovation and construction
- Heating, ventilation and air-conditioning in healthcare facilities
    - The number of air changes
    - The direction of air flow
    - Where the air is exhausted
- Source containment infrastructure including the following:
    - Physical barriers such as:
        - Room dividers
        - Glass or Plexiglass® screens and windows
        - Cough and sneeze guards in food service areas
    - Hand hygiene equipment
        - ABHR available at the point of care
        - Hand hygiene sinks conveniently located
    - Patient placement
        - A high proportion of single patients rooms allocated when designing new healthcare facilities

2. Infection Prevention and Control Responsibilities

The core components of an infection prevention and control program include:

- Surveillance of IPAC processes and outcomes related to healthcare-associated infections that should be performed, analyzed appropriately, and results provided to front line staff, clinical leadership, and administrators; results should be used to monitor and improve patient outcomes
- IPAC education for healthcare workers at orientation and ongoing as situations arise
- Policies and procedures aimed at the prevention of transmission of infection; highest priority would be policies for Routine Practices and Additional Precautions
- A hand hygiene program
- An outbreak management protocol
- Environmental control
    - Providing input on the following are required:
        - Environmental cleaning

    - Linen, dishes and waste management
    - Reprocessing of items used for patient care
- Liaison with the Occupational Health Program to ensure healthy workplace policies and immunization requirements for the prevention of communicable diseases are current
- Communication strategy for timely reporting of infection-related issues to leaders and staff
- Participation in facility design, construction and renovation
- Reporting of reportable disease to public health authorities

3. Healthcare Worker Responsibilities

All healthcare workers (HCWs) must be provided IPAC education on hiring. HCWs have a responsibility to minimize the risk of exposure to and the transmission of microorganisms within healthcare settings. The following are applicable to all HCWs:

- A point-of-care risk assessment must be performed before each patient interaction to determine the appropriate Routine Practices and Additional Precautions required for safe patient care
- Routine Practices should be followed during the care of all patients, at all times, in all settings
- Personal protective equipment (PPE) when recommended should be worn appropriately
- Additional Precautions, when indicated, should be followed along with Routine Practices
- Education should be provided to patients, their families and visitors regarding respiratory hygiene, hand hygiene and when necessary, the reason for precautions necessary for their care
- Pre-placement assessment by Occupation Health Services is required
- Non-critical patient care equipment should be identified and appropriately cleaned and disinfected before use with another patient
- The patient record/chart should not be brought into the patient's room or bed space in a shared room
- Eating or drinking should not occur in areas where direct patient care is provided, in reprocessing or in laboratory areas

Routine Practices Elements

The Routine Practices include the following elements: Point-of-Care Risk Assessment, Hand Hygiene, Personal Protective Equipment, Source Containment, Environmental Controls and Education (Appendix A). A summary of the components of Source Containment and Environmental Controls are provided in Appendix A.

1. Point-of-Care Risk Assessment

Central to the application of Routine Practices is a point-of-care risk assessment (PCRA). A PCRA is an evaluation by the HCW of an interaction with the patient and the patient's environment in order to determine the interventions required to prevent transmission of infectious agents during the encounter. HCWs have a responsibility to do a PCRA prior to every interaction as the patient's status can change. This risk assessment is based on professional judgment about the clinical situation and up-to-date information on how the specific healthcare/home care organizations have designed and implemented engineering and administrative controls, along with the availability and use of personal protective equipment (Appendix B). Control measures are based on the risk factors identified.

The Public Health Agency of Canada (PHACb) gives the following examples of how a PCRA should be done prior to every patient interaction:

1. Evaluate the likelihood of exposure to the infectious agent:

- **from a specific interaction** [e.g., performing/assisting with aerosol-generating medical procedures, other clinical procedures/interaction, non-clinical interaction (e.g., admitting, teaching patients and families), transporting patients, direct face-to-face interaction with patients, etc.];
- **with a specific patient** (e.g., infants/young children or patients not capable of self-care/hand hygiene, have poor compliance with respiratory hygiene, copious respiratory secretions, frequent coughing/sneezing, diarrhea, etc.);
- **In a specific environment** (e.g., single rooms, shared rooms/washrooms, hallways, 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 airborne infection isolation room, patient waiting areas, etc.);

AND

2. Choose the **appropriate actions/PPE** needed to minimize the risk to the patient, HCW, other staff, family, visitor, contractor, etc., from exposure to the infectious agent.

There is a variation of risk within different settings (e.g., prehospital, acute, LTC, ambulatory care and home care). Thus, control measures may need to be modified based on the setting.

There should be a balanced approach offering a safe environment without undue restrictive measurements that could be detrimental to an individual's quality of life.

2. Hand Hygiene

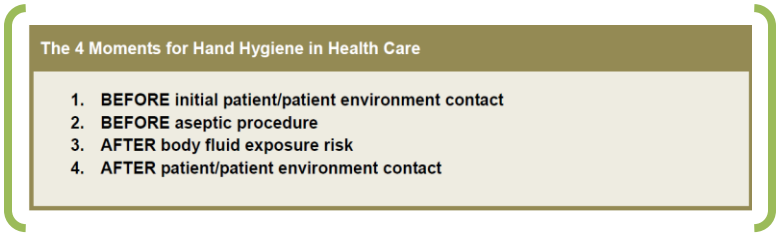
Hand hygiene is considered the single most effective way to prevent the transmission of healthcare-associated infections. Accreditation Canada (2013) requires all accredited healthcare organizations to have a comprehensive hand hygiene strategy. In order to implement a program in a healthcare facility, refer to PHAC's *Hand Hygiene Practices in Healthcare Settings (2012).*

Accreditation Canada (2013) requires the following activities in relation to hand hygiene:

- Hand hygiene education should be provided to staff, service providers and volunteers
- Hand hygiene products should include alcohol-based hand rub and hand soaps
- Alcohol-based hand rub should be provided at the point of care
- Reminders regarding the proper techniques for hand washing and using alcohol-based hand rub should be posted (appendix C)
- Compliance with hand hygiene practices must be monitored

Recommendations:

- HCW hand hygiene education should include when hand hygiene should be performed, hand hygiene techniques, indications for hand hygiene products and how to care for the hands
- Hand hygiene must be performed before and after contact with a patient or the patient's environment, before any procedure requiring aseptic technique and after body fluid exposure
    - These have been referred to as the four moments for hand hygiene



- Alcohol-based hand rub (ABHR) is the preferred method of hand hygiene in all healthcare settings
- Hand hygiene with soap and water, instead of ABHR, should be used to remove soil and/or organic materials
    - At the point-of-care after caring for a patient with norovirus or *Clostridium difficile* infection
- ABHR should contain greater than 70% and up to 90% alcohol for clinical care

- Hand hygiene should be performed following the removal of gloves at the point of care
- Artificial fingernails, fingernail enhancements or extenders must not be worn when providing patient care, when working in the patient care environment, in medical device reprocessing or in the clinical laboratory
- Natural nails must be kept clean and short; nail polish, if worn, must be fresh and free of cracks or chips
- Hand jewelry other than a simple ring (i.e., band) should not be worn when providing patient care or working in medical device reprocessing or in the clinical laboratory; it is preferred that rings not be worn
- Bar soap for hand hygiene is not acceptable in healthcare settings except for individual patient use

3. Personal Protective Equipment

Personal protective equipment (PPE) refers to any type of specialized clothing, barrier product, or breathing (respiratory) device that is used by a susceptible host to provide a physical barrier between him/her and an infectious agent/infected source. These barriers include gloves, gowns, facial protection, masks and respirators.

The effectiveness of PPE is highly dependent on appropriate and proper use including:

- PCRA to determine the need
- Using the correct technique for putting on, wearing and taking off the PPE (Appendix D)
- Disposing of the PPE appropriately following use, followed by hand hygiene

Gloves

Gloves are worn to decrease the transmission of microorganisms from one person to another and to reduce the risk of exposure of HCWs to blood, body fluids, secretions and excretions, mucous membranes, and non-intact skin, and for handling potentially contaminated items.

Recommendations:

- Clean, single-use, non-sterile gloves should be worn as determined by a PCRA
- Gloves are not required for routine patient care activities when the skin is intact
- Gloves must be selected appropriate to the task
- Gloves must be put on immediately before the task for which they were intended and removed immediately following the task

> - *Gloves are not a substitute for hand hygiene*
> - *Hand hygiene must be performed prior to and following the use of gloves*

- Gloves should be changed during direct care activity if the hands move from a contaminated body site to a clean body site

Gowns

Long-sleeved gowns are worn to protect uncovered skin and clothing during procedures and patient care activities when it is anticipated that there is likely to be exposure to blood, body fluids, secretion or excretions.

Recommendations:

- Routine use of gowns for all patient care activities is not required
- A gown should be worn when indicated by the PCRA
- Gowns should not be reused once removed
- The same gown should not be worn between successive patients

- *Gowns should be put on with the opening at the back and tied at the neck and at the waist*
- *The cuffs of the gown should be covered by the gloves*

- Laboratory coats are not a substitute for gowns where a gown is indicated

Facial Protection

Facial protection includes masks and eye protection, face shields, or masks with visor attachment. Eye protection may include masks with built-in eye protection, safety glasses or facial shields. Facial protection should be worn during procedures and patient care activities to protect the mucous membranes of the eyes, nose and mouth from splashes or sprays of blood, body fluids, secretions or excretions and when within two metres of a coughing patient.

Recommendations:

- HCWs should be educated to avoid touching their faces with their hands during patient care
- Hand hygiene must be performed prior to putting on facial protection

- *Facial protection requires that the eyes, nose, mouth and chin are covered.*

- Facial protection should be discarded immediately after use, followed by hand hygiene
- Masks should not be dangled around the neck and should not be reused
- The mask should be changed if it becomes wet or soiled

4. Source Containment

Source containment refers to measures associated with quickly identifying the infectious source and containing the source. The components include: triage, respiratory hygiene, patient placement and accommodation, patient flow, visitor management, strategies to reduce aerosol generating medical procedures, handling of deceased bodies and aseptic technique.

Recommendations:

Triage

In the emergency departments and acute assessment centers:

- Signs should be placed at the entrance to remind symptomatic patients to perform hand hygiene and/or respiratory hygiene as indicated by their symptoms
- Patients with respiratory infections should be given a mask
- Patients with acute diarrheal illness should be placed in a single examining room with dedicated toilet or commode as soon as possible
- Patients should be assessed for potential communicable diseases in a timely fashion
- A physical barrier (e.g., plastic partition at registration desk) should be located between infectious sources and susceptible hosts
- When scheduling appointments for routine outpatient clinic visits, patients should be advised to report any symptoms of acute infection to the clinic prior to the visit

Respiratory hygiene

Respiratory hygiene involves measures to minimize the transmission of respiratory pathogens beginning at the point of entry into a healthcare facility. It involves encouraging all individuals to practice respiratory hygiene. Actions required are:

- Signs should be placed at entrances to facilities and in strategic places with instruction for patients with respiratory symptoms
- Respiratory hygiene messages should include:
    - To cover the mouth and nose during coughing or sneezing with a tissue or against a sleeve or shoulder (if tissue not available) and promptly dispose of tissues into a waste bin and perform hand hygiene

- *Respiratory hygiene measures include instructional signs, education programs and providing materials such as tissues, ABHRs, masks and waste receptacles*

- To turn the head away from others when coughing or sneezing
- To wear a mask, if possible
- To maintain a minimum of two metre separation between patients who may have a respiratory infection and are symptomatic with a cough, fever or shortness of breath and those who do not have symptoms

Patient placement and accommodation

- Single patient rooms with designated private toilets and patient sinks and accessible designated hand hygiene sinks are preferred for the care of all patients
- Options for patient placement should be based on a PCRA and susceptibility of other patients in the room

Prioritization for single rooms should be given, in this order, to patients:

- *On airborne precautions*
- *Who soil the environment*
- *Who have uncontained secretions, excretions or wound drainage*

- The ability of patients, roommates and visitors to comply with infection prevention and control measures should guide placement decisions

Patient flow

- Transfer of patient within and between facilities should be avoided unless medically indicated

Visitor management

- Visitors with symptoms of acute infection (e.g., cough, vomiting, diarrhea) should not visit unless the visit is essential, in which case the visitor should be instructed on precautions to minimize transmission of infection

Aerosol generating medical procedures (AGMPs)

- Routine practices are sufficient for AGMPs performed on patients with no signs or symptoms of infectious respiratory diseases

Handling deceased bodies

- Routine Practices should be used when handling deceased bodies or preparing bodies for autopsy or transfer to mortuary services
- Provincial specific communicable disease regulations should be followed
- Additional Precautions may be required for specific infections

Aseptic Technique

Aseptic technique should be used when performing invasive procedures and handling injectable products. Aseptic technique generally includes:

- Performing hand hygiene, preferably with ABHR prior to opening supplies
- Performing hand hygiene with antimicrobial soap and water for invasive procedures (e.g., placing central intravascular catheters, placing catheters or injecting into the spinal canal or subdural spaces) when ABHR is not accessible
- Using a mask and sterile gloves when placing a catheter into the spinal canal or subdural space (e.g., during lumbar puncture, myelogram, and spinal or epidural anesthesia)
- Opening tray and supplies only when ready to use to ensure a sterile field
- Performing hand hygiene prior to putting on single-use gloves, sterile gloves, sterile gown or mask, as indicated by the specific procedure
- Preparing the patient's skin with an appropriate antiseptic before performing an invasive procedure
- Using the appropriate size drape, when a drape is needed, to maintain a sterile field

Medications

The following aseptic practices must be adhered to when administering medications:

- Disinfecting the stoppers or injection ports of medication vials, infusion bags, etc., with alcohol before entering the port, vial or bag
- Using sterile, single-use disposable needle and syringe for each medication/fluid withdrawal from vials or ampules
- Avoiding the administration of medications or solutions from single-dose vials, ampules or syringes to multiple patients and not combining leftover contents for later use
- Using single-dose medication vials, prefilled syringes and ampules in clinical settings
    - If the product is only available as a multi-dose vial see below

Multi-dose vials

When a product is only available for purchase in multi-dose vials these recommendations should be followed:

- The multi-dose vial should be restricted to single patient use whenever possible

- Syringes from multi-dose vials should be prepared from a centralized medication preparation area (e.g., multi-dose vials should not be taken to the patient bedside)
- The multi-dose vial should be stored in such a way as to restrict access (e.g., in a secure location away from the patient bedside or in a medication room)
- A sterile single-use needle and syringe should be used each time the multi-dose vial is entered
- Re-entering the multi-dose vial with a previously used needle or syringe must not be done
- The multi-dose vial should be stored in accordance with manufacturer's recommendations
- The multi-dose vial should be labeled with the date of first opening
- The multi-dose vials should be discarded according to manufacturer's expiry date or after 28 days, whichever time is shorter
- The multi-dose vial should be inspected for clouding or particulate contamination prior to each use and should be discarded if clouding or particulate contamination is present
- The multi-dose vial should be discarded if sterility or product integrity is compromised

Multi-use devices

- Single patient multi-use devices (e.g., glucose sampling devices, finger-stick capillary blood sampling devices) should be used for only one patient
- If it is not feasible to assign glucometers to individual patients, they should be cleaned and disinfected before use with another patient
- Skin antisepsis should be performed prior to invasive procedures (unless a patient has a contraindication to this procedure)
- Single-use disposable devices must be used when lancets, blood sampling and acupuncture needles are required

Intravenous Delivery Systems

Aseptic technique should be adhered to for storage, assembly and handling components of intravenous delivery systems:

- Intravenous bags, tubing and connectors should be used for one patient only and disposed of appropriately after use

- A syringe, needle or cannula should be considered contaminated once it has been used to enter or connect to one patient's intravenous infusion bag or administration set and should not be reused
- Sterile components should not be assembled until time of need, with the exception of the emergency department, operating room, intensive care unit or prehospital settings where it may be essential to maintain one system primed and ready for emergency use
    - The primed system should be stored in a clean and dry area, secure from tampering, and labeled with the date of priming
    - The primed system should be replaced if not used within 24 hours
- When inserting peripheral venous catheters or peripheral arterial lines, at a minimum, hand hygiene should be performed, the skin should be prepared with an antiseptic and clean disposable gloves should be worn
- Maximal aseptic barriers that include a cap, mask, long-sleeved sterile surgical gown, sterile gloves and a large full body sterile drape and skin preparation with cholorhexidine in alcohol or an equally effective alternative should be used for inserting central venous catheters and pulmonary catheters

5. Environmental Controls

Environmental controls are measures that are built into the infrastructure of an organization and include: cleaning of the equipment, environmental cleaning, management of laundry, dishes, waste and sharps safety.

Recommendations:

Cleaning of equipment

- Policies and procedures should be in place for the reprocessing of patient care equipment
- Manufacturers' instructions for the cleaning and reprocessing of equipment must be followed
- Single use items must be used for one person only
- Non-critical items (e.g., blood pressure cuffs, blood glucose machines) must be cleaned and disinfected before being used on another person
- Personal care items (e.g., lotions, creams, soaps) must not be shared
- The use of a commode and bedpan should be dedicated for use by one person and labelled appropriately

Environmental cleaning

Maintaining a clean healthcare environment is an essential component of IPAC. It has been shown that the hospital environment has microorganisms which can be transferred to patients via the hands of healthcare providers.[3]

- Education and training programs should be developed and implemented for those responsible for environmental cleaning
- Policies and procedures must be in place for the routine cleaning of the healthcare environment
- Surfaces that are touched more often should be cleaned and disinfected on a more frequent schedule
- Evaluation of policies, procedures and practices should be performed to determine the effectiveness of environmental cleaning

Management of dishes, laundry and waste

Dishes

- No special precautions are needed for dishes or eating utensils
- There is no indication for the use of disposable dishes except in the circumstance of non-functioning dishwashing equipment

Linen

- Bed linens should be changed regularly and when soiled, upon discontinuation of Contact Precautions, and following patient discharge
- Clean and soiled linen should be separated during transport and storage
- Clean linen should be transported and stored in a manner that prevents contamination and ensures cleanliness
- All soiled linen must be handled in the same way for all patients without regard to their infection status
- Heavily soiled linen should be rolled or folded to contain the heaviest soil in the center of the bundle

[3] Ontario Agency for Health Protection and Promotion, Provincial Infectious Diseases Advisory Committee. Routine Practices and Additional Precautions in All Health Care Settings. 3rd edition.

- Large amounts of solid soil (e.g., feces or blood clots) should not be removed by spraying with water
- A gloved hand and toilet tissue should be used to place the solid soil into a bedpan or toilet for flushing

Waste

In healthcare settings there are two types of waste: biomedical waste and general waste.

- Biomedical waste is contaminated infectious waste such as human anatomical waste, microbiological laboratory specimens, blood and blood products, body fluids and sharps
    - Urine and feces are not considered biomedical waste
    - Biomedical waste needs to be placed for disposal as indicated by regional regulations
- General waste includes waste from patient care areas, offices and public spaces
    - It can include tissues, paper cups, dressings, incontinent briefs, discarded personal protective equipment, intravenous tubing and bags

Sharps safety

- Safety-engineered sharp devices should be used whenever possible and the safety of patients and healthcare workers should be considered when selecting safety-engineered sharp devices
- Needles should not be recapped
    - Used needles and other used single-use sharp items should be disposed of immediately into designated puncture-resistant containers that are easily accessible at the point-of-care
- If a HCW experiences an occupational exposure to blood or body fluids the following actions are recommended:
    - First aid should be performed immediately
    - Mucous membranes and non-intact skin should be rinsed thoroughly with running water if contamination with blood, body fluids, secretions or excretions occurs
    - The exposure should be reported to the employer and immediate medical attention be obtained, if required

6. Education

Accreditation Canada (2013) recommends that an organization have an education program tailored to its infection prevention and control (IPAC) priorities, services, and client populations.

Education must be provided for:

- *Infection Control Practitioners*
- *Healthcare Workers*
- *Patients and Visitors*

The recommendations to have all healthcare workers, patients, families and visitors knowledgeable about Routine Practices and Additional Precautions implies that an educational program must be incorporated into an organization's infection prevention and control program.

Infection Control Practitioners (ICPs)

- An orientation program should be provided
- An infection prevention and control course should be promoted for novice practitioners
- Certification in infection control is recommended for all Infection Control Practitioners who have been working in IPAC for two years or more
- Ongoing education is required to maintain competency in IPAC

Healthcare workers

- HCWs are required to attend IPAC education at orientation and on a regular basis, according to their roles and responsibilities
- HCWs should have sufficient knowledge, skills and resources to perform a PCRA before every interaction with a patient in order to apply appropriate control measures
- HCWs must know the policies and procedures related to Routine Practices and Additional Precautions
- HCWs must be provided with information about how to safely perform high-risk activities including using the appropriate PPE as outlined in Routine Practices and Additional Precautions

Patients and Visitors

- Education should be provided to patients, their families and visitors regarding respiratory hygiene, hand hygiene and the reason for specific precautions necessary for their care

Additional Precautions

Additional Precautions are applied when the transmission properties of specific microorganisms are not fully managed by Routine Practices. Additional Precautions include:

- Contact Precautions used in addition to Routine Practices when contamination of the patient's environment is anticipated such as may occur when a patient has diarrhea
- Droplet Precautions used in addition to Routine Practices for microorganisms primarily transmitted by the large droplet route such as pertussis
- Airborne Precautions used in addition to Routine Practices for microorganisms transmitted by the airborne route: tuberculosis, measles and varicella

Contact Precautions Elements

Contact Precautions are used in addition to Routine Practices for patients known or suspected of having an infection that can be spread by contact exposure. Contact Precautions should be implemented:

- Empirically (i.e., before confirmation) for patients with conditions/clinical presentation as listed in Appendix E
- When the specific etiology is known refer to Appendix F

Examples of microorganisms that are transmitted via the contact route include:

- Norovirus
- *Clostridium difficile*
- Antibiotic-resistant organisms

A checklist with the key actions to be taken by the HCW when admitting a patient requiring Contact Precautions is available in Appendix G.

In addition to **Routine Practices** these elements of Contact Precautions are recommended:

1. Hand Hygiene

Hand hygiene must be performed in accordance with the four moments. During outbreaks and in settings where there is a high transmission of *Clostridium difficile* infection soap and water should be used instead of ABHR.

2. Personal Protective Equipment

- PPE should be available outside the patient's room, cubicle or designated bedspace
- The same PPE should not be worn for more than one patient

- PPE should be changed and hand hygiene performed between contacts with all patients in the same room

Recommendations:

Gloves

- Gloves should be worn to enter the patient room, cubicle or patient's designated bed space in shared rooms
- Gloves should be removed and discarded into a no touch waste receptacle and hand hygiene should be performed on exit from the room or patient bed space

Gowns

- A long-sleeved gown should be worn if it is anticipated that clothing or forearms will be in direct contact with the patient or with environmental surfaces or objects in the patient care environment
- If a gown is to be worn it should be put on prior to entry into the room, cubicle or patient's designed bed space in shared rooms
- The gown should be removed and discarded into a no-touch receptacle immediately after the indication for use and hand hygiene should be performed before leaving the patient's environment

3. Source Containment

A system should be developed to identify patients with known or suspected infections that warrant Contact Precautions.

- Indications for Contact Precautions may differ for certain children and adult patients (e.g., incontinent or unable to comply with hygiene measures)
- A sign should be placed in a visible space to identify Contact Precautions (Appendix H)

Source containment includes the following components: patient placement and accommodation, patient flow, visitor management, AGMPs, duration of precautions and handling of deceased bodies.

Recommendations:

Patient placement and accommodation

Single room

- A single room with a private toilet (or designated commode chair), designated patient sink and a designated staff handwashing sink is preferred
- The door may remain open

Cohorting patients

- The Infection Control Practitioner should be consulted to discuss the placement options when single rooms are not available
- A point-of-care risk assessment should be performed to determine patient placement and/or suitability for cohorting
- Priority for single rooms should be given to patients with conditions that may facilitate cross-transmission of microorganisms
- Patients may be cohorted if they are infected or colonized with the same microorganism and are suitable roommates
- Roommates should be selected for their ability and the ability of their visitors to comply with necessary precautions

Multi-patient room

- Patient requiring Contact Precautions should not be placed in the same room as a patient at high risk for complication if infection occurs (e.g., those who are immunocompromised)
- A patient with diarrhea should not share a toilet with another patient
- Roommates and visitors should be aware of the precautions to follow
- The privacy curtain should be pulled to minimize opportunities for direct contact

Patient flow

- Transfers within facilities should be avoided unless medically indicated
    - If a transfer is medically necessary, the transferring service, receiving unit, facility or home care agency should be advised of the necessary precautions
    - The transfer should occur efficiently to minimize time spent out of the room

- HCWs should remove PPE and perform hand hygiene prior to transporting patients
    - Clean PPE should be available if required to care for the patient during transport
- The patient should perform hand hygiene before leaving the room
- The patient should be allowed to leave the room as indicated in the care plan

Visitor management

- Visitors should be kept to a minimum; special consideration for additional visitors should be discussed with the care team
- Visitors should be instructed to check at the nursing station before entering the patient's room
- Visitors should be asked to visit only one patient; if the visitor must visit more than one patient, the visitor should be instructed to use the same barriers as the healthcare workers and perform hand hygiene before going to the next patient room

Aerosol-generating medical procedures (AGMPs)

Contact Precautions are sufficient for AGMPs performed on patients on Contact Precautions who have no signs or symptoms of suspected or confirmed tuberculosis, severe acute respiratory syndrome or respiratory infection with an emerging pathogen for which the transmission characteristics are not yet known.

Duration of precautions

- Contact Precautions should be discontinued after signs and symptoms of the infection have resolved or as per the pathogen-specific recommendations in Appendix F
- The duration of precautions should be determined on a case-by-case basis when patient symptoms are prolonged or when the patient is immunosuppressed
- Precautions should be discontinued only after the room/bedspace and bathroom has been terminally cleaned

Handling of deceased bodies

- Routine Practices, properly and consistently applied, should be used in addition to Contact Precautions for handling deceased bodies, preparing bodies for autopsy or for transfer to mortuary services

4. Environmental Controls

Cleaning of equipment

- Non-critical patient-care equipment (e.g., thermometers, blood pressure cuff, pulse oximeter) should be dedicated to the use of one patient and cleaned and disinfected before reuse with another patient
- Single use devices should be used and discarded after use
- All equipment/supplies should be identified and stored in a manner that prevents use by or for another patient
- Toys and electronic games should be dedicated to one patient and must be cleaned and disinfected before use with another patient

Environmental cleaning

- Additional cleaning measures may be warranted in situations where continued transmission of a specific infectious agents is occuring such as during a cluster of cases
- All horizontal and frequently touched surfaces should be cleaned at least twice daily and when soiled
- In outbreak situations or when there is continued transmission, rooms of *Clostridium difficile* infection patients should be decontaminated and cleaned with chlorine-containing cleaning agents (at least 1,000 ppm) or other sporicidal agents
- When precautions are discontinued or the patient is moved, terminal cleaning of the room/bedspace and bathroom should be done

Management of laundry dishes and waste

- No special precautions are required

5. Education

- Patients, their visitors, families and their decision makers should be educated about the precautions being used, the duration of precautions, as well as the prevention of transmission of disease to others with a particular focus on hand hygiene
- Visitors who participate in patient care should be instructed about the appropriate PPE
    - In the adult setting the PPE would be the same as for the HCW; this may not be necessary for parents carrying out the usual care for their children

Modifications for Contact Precautions in Specific Healthcare Settings

Routine Practices and Contact Precautions should be followed for all healthcare settings and modified as necessary. It should be recognized that patients on Additional Precautions may have fewer contacts with healthcare providers and that this may reduce their quality of care; steps should therefore be taken to mitigate this impact on care.

Component	Long-term Care	Ambulatory Care	Home Care	Prehospital Care
Patient placement and accommodation	• Placement is on a case-by-case basis • PCRA to determine placement • Required to stay in room if symptomatic • Hand hygiene must be performed (assistance maybe needed) before leaving room	• Placement in a single room as soon as possible • Contact between symptomatic patients and others should be avoided, if possible	• Symptomatic patients should be advised to observe hygiene practices and not share common items	• Single patient transport is preferred • PCRA when considering multi-transport • The receiving facility should be notified that precautions are indicated
PPE	• Gloves for direct care/contact with environmental surfaces	• As per PCRA	• HCWs should wear gloves for direct care/contact with environmental surfaces	• Gloves at point of care • Gloves should be removed when patient care is completed, and HH performed
Environmental Cleaning	• In outbreaks, more frequent cleaning may be required	• Equipment and surfaces in direct contact with the patients should be cleaned and disinfected before use for another patient	• Symptomatic patients should be advised to clean the bathroom frequently, especially frequently touched surfaces	• Equipment and surfaces should be cleaned and disinfected and linen should be changed after every patient

Droplet Precautions Elements

Droplet Precautions are used in addition to Routine Practices for patients known or suspected of having an infection that can be spread by the droplet route. The area of risk is two metres around the infected source; prior to 2012 it had been identified as one metre. Droplet Precautions should be implemented:

- Empirically (i.e., before confirmation) for patients with conditions/clinical presentation as listed in Appendix E
- When the specific etiology is known refer to Appendix F

Examples of microorganisms that are transmitted via the droplet route include:

- Influenza virus
- *Neisseria meningitidis*
- *Bordetella pertussis* (whooping cough)

A checklist with the key actions to be taken by the HCW when admitting a patient requiring Droplet Precautions is available in Appendix I. There are diseases that require both Droplet and Contact Precautions such as for the care of the patient with influenza. The checklist for Droplet Contact Precautions is provided in Appendix J.

In addition to **Routine Practices** these elements of Droplet Precautions are recommended:

1. Hand Hygiene

Hand hygiene should be performed in accordance with the four moments.

2. Personal Protective Equipment

- PPE should be available outside the patient's room, cubicle or designated bedspace
- Facial protection should be worn and discarded as outlined in Routine Practices to prevent self-contamination
- In a cohort where patients have the same microorganisms, the same facial protection may be used for successive patients

Recommendations:

Facial Protection

- Facial protection (i.e., masks and eye protection, or face shields, or masks with visor attachment) should be worn:

  - For care of patients with symptoms of acute respiratory viral infection when within two metres of the patient who is coughing or
  - If performing procedures that may result in coughing

- Transport personnel should wear facial protection if the patient cannot follow respiratory hygiene

3. Source Containment

A system should be developed to identify patients with known or suspected infections that warrant Droplet Precautions.

- A sign should be placed in a visible space to identify Droplet Precautions (Appendix K) or Droplet Contact Precautions (Appendix L)

Source containment includes the following components: respiratory hygiene, patient placement and accommodation, patient flow, visitor management, aerosol-generating medical procedures, duration of precautions and handling of deceased bodies.

Recommendations

Respiratory hygiene

- Signage should instruct patients to adhere to respiratory hygiene
- Masks and ABHR should be available for patients with respiratory infections
- If possible, patients with respiratory symptoms should be physically separated (at least two metres apart) from others and in multi-bed rooms the privacy curtain should be drawn to minimize opportunities for droplet spread
- HCWs should avoid touching the mucous membranes of their eyes, nose and mouth with their hands

Patient placement and accommodation

Single room

- A single room with a private toilet and sink is preferred
- The door may remain open

Cohorting patients

- When sufficient single rooms are not available, patients should be cohorted if they are known to be infected with the same pathogen and if they are suitable roommates

Multi-patient room

- Patients requiring Droplet Precautions should not be placed in the same room as a patient at high risk for complication if infection occurs (e.g., those who are immunocompromised)
- Roommates and visitors should be aware of the precautions to follow
- Patients should be physically separated (i.e., at least two metres apart) from each other
- The privacy curtain between beds should be drawn to minimize opportunities for droplet spread

Patient flow

- The patient should be allowed to leave the room as indicated in the care plan
- The patient should perform hand hygiene before leaving the room
- The patient should wear a mask, if tolerated, and follow respiratory hygiene during transport
- Transfer within facilities should be avoided unless medically indicated
    - If a transfer is medically necessary, the transferring service, receiving unit, facility or home care agency should be advised of the necessary precautions
    - The transfer should occur efficiently to minimize time spent out of the room

Visitor management

- Visitors should be kept to a minimum; special consideration of additional visitors should be discussed with the care team
- Visitors should be instructed to check at the nursing station before entering the patient room
- Exceptions to the need for facial protection should be evaluated on a case-by-case basis
    - In the case of acute viral respiratory infection, household members need not wear facial protection as they may have been already exposed

Aerosol-generating medical procedures (AGMPs)

Droplet Precautions are sufficient for AGMPs performed on patients on Droplet Precautions who have no signs or symptoms of suspected or confirmed tuberculosis, severe acute respiratory syndrome or respiratory infection with an emerging pathogen for which transmission characteristics are not yet known.

Duration of precautions

- Droplet Precautions should be discontinued after signs and symptoms of the infection have resolved or as per the pathogen-specific recommendations in Appendix F
- The duration of precautions should be determined on a case-by-case basis when patient symptoms are prolonged or when the patient is immune suppressed

Handling of deceased bodies

- Routine Practices, properly and consistently applied, should be used for handling deceased bodies preparing bodies for autopsy or for transfer to mortuary services
- Droplet Precautions are not necessary

4. Environmental Controls

Cleaning of equipment

- Non-critical patient-care equipment (e.g., thermometers, blood pressure cuff, pulse oximeter) should be dedicated to the use of one patient and cleaned and disinfected before reuse with another patient
- Single use devices should be used and discarded after use

Environmental cleaning

- As per Routine Practices; if Contact Precautions are required in addition to Droplet Precautions then as per Contact Precautions

Management of laundry, dishes and waste

- No special precautions are required

5. Education

- Patients, their visitors, families and their decision makers should be educated about the precautions being used, the duration of precautions, as well as the prevention of transmission of disease to others with a particular focus on hand and respiratory hygiene
- Visitors who participate in patient care should be instructed about the appropriate PPE
    - In the adult setting the PPE required would be the same as for the HCW; this may not be necessary for parents carrying out the usual care for their children

Modifications for Droplet Precautions in Specific Healthcare Settings

Routine Practices and Droplet Precautions should be followed for all healthcare settings and modified as necessary. It should be recognized that patients on Additional Precautions may have fewer contacts with healthcare providers and that this may reduce their quality of care; steps should therefore be taken to mitigate this impact on care.

Component	Long-term Care	Ambulatory Care	Home Care	Prehospital Care
Patient placement and accommodation	• Placement is on a case-by-case basis • PCRA should be performed to determine placement • Participation in group needs to be restricted if symptomatic • During an outbreak group activity restrictions should be the decision of the outbreak management team	• Patients should be placed directly into single rooms, especially if he or she has known or suspected influenza, meningococcal infection, rubella, mumps or pertussis • If not possible, patient should be placed in an area of the waiting room separated from other patients by at least two metres • Time in the waiting room should be minimized • During outbreaks, separate waiting areas for those with acute respiratory infections should be considered	• Patients should be advised to self-screen for respiratory illness and to inform the home care agency • HCW should screen patients for febrile illness prior to visiting the home, if possible • Medical visits that are not necessary should be deferred while patients are experiencing respiratory illness • Patients should be advised to clean, cover and contain their respiratory illness	• Single patient transport is preferred • Receiving facilities must be notified that precautions are indicated
Environmental Cleaning	• In outbreak situations more frequent cleaning may be required	• Equipment and surfaces in direct contact with the patients should be cleaned and disinfected before use for another patient		• Equipment and surfaces in direct contact with the patients should be cleaned and disinfected before use for another patient

Airborne Precautions Elements

Airborne Precautions are used in addition to Routine Practices for patients known or suspected of having an infection that can be spread by the airborne route. Airborne Precautions should be implemented:

- Empirically (i.e., before confirmation) for patients with conditions/clinical presentation as listed in Appendix E
- When the specific etiology is known refer to Appendix F

Examples of diseases that are transmitted via the airborne route include:

- Tuberculosis
- Varicella zoster infections such as chicken pox and disseminated zoster
- Measles

A checklist with the key actions to be taken by the HCW when admitting a patient requiring Airborne Precautions is available in Appendix M.

In addition to **Routine Practices** these elements of Airborne Precautions are recommended:

1. Hand Hygiene

Hand hygiene should be performed in accordance with the four moments.

2. Personal Protective Equipment

- Healthcare settings requiring the use of respirators should have a respiratory protection program in place
- HCWs must adhere to the policies and procedures related to the organization's respiratory protection program
- A respirator should be worn by a HCW providing care for patients with suspected or confirmed respiratory tuberculosis or when performing procedures that could aerosolize viable tubercle bacilli (e.g., wound irrigations)
- A respirator should be worn by HCWs when caring for patients with vaccine preventable airborne infections (i.e., varicella, measles) to which they are not immune
- A respirator should be worn when performing or assisting with aerosol-generating medical procedures on patients with signs and symptoms of severe acute respiratory syndrome or with a respiratory pathogen for which transmission characteristics are not yet known

Recommendations:

Respirators

- All HCWs requiring respirators should be trained in their use
- A fit-tested and seal-checked approved respirator should be used to enter the room or home of a patient on Airborne Precautions (see Appendix O for safety check)
- Hand hygiene should be performed prior to putting on a respirator
- Self-contamination should be avoided by not touching the respirator on its external surface during use and disposal

Appropriate Respirator Use

- *HCWs should be fit-tested prior to respirator use*
- *A seal check should be performed every time a respirator is used*
- *Hand hygiene should be performed after removing and discarding a respirator*
- *A respirator should not be placed on a patient*

- Respirators should be carefully removed by the straps
- A respirator should not dangle around the neck when not in use and should be changed if it becomes wet or soiled or if breathing becomes difficult
- The respirator should be discarded immediately after its use into a no-touch waste receptacle, followed by hand hygiene
- In a cohort setting, a single respirator may be used for successive patients

Masks

- Patients with airborne infections should be directed to put on a mask, if tolerated (not a respirator), if outside the airborne infection isolation room (AIIR)
- The patient should be allowed to remove the mask once in an AIIR

3. Source Containment

A system should be developed to identify patients with known or suspected infections that warrant Airborne Precautions.

- A sign should be placed in a visible space to identify Airborne Precautions (Appendix N)

Source containment includes the following components: patient placement and accomodation, patient flow, visitor management, aerosol-generating medical procedures, duration of precautions and handling of deceased bodies. Other source containment components for

Airborne Precautions include management of personnel and management of patients with airborne infections.

Recommendations:

Patient placement and accommodation

- Patients known or suspected to have an airborne infection should be immediately placed into an airborne infection isolation room (AIIR) with the door closed and with the exhaust vented to the outside or filtered through a high-efficiency particulate filter if recirculated
- The AIIR should have an in-room toilet, sink and bathing facility for the patient and a designated hand hygiene sink for the HCWs
- When an AIIR is not available:
    - The patient should be placed into a single room with the door closed
        - The room should preferably be without recirculation of air from the room and as far away from the rooms of other patients as possible
        - The number of people entering the room should be limited (e.g., no non-essential visitors)
    - The Medical Officer of Health should be consulted if there is uncertainty with the requirement to transfer the patient to a facility with an AIIR
- Patients known to be infected with the same virus (measles or varicella) may share a room
- Patients with tuberculosis should not share rooms as strains and levels of infectivity may be different
- Monitoring of the AIIR
    - The negative pressure should be checked prior to placing the patient in an AIIR and on a daily basis when the AIIR is in use
    - Visual indicators (smoke tubes or flutter strips) or portable manometers may be used to check the differential pressure
    - The results of monitoring should be documented
    - Visual or audible alarms should not be inactivated

Patient flow

- Patients should be restricted to their room, unless leaving the room for medically essential procedures

  - The patient should be accompanied by a HCW whenever outside the room

- The patient should wear a mask, if tolerated, and follow respiratory hygiene during transport
  - If the patient cannot wear a mask, transport should be planned to limit the exposure of other individuals

Visitor management

- Visitors should be kept to a minimum; special consideration for additional visitors should be discussed with the care team
- Visitors should be instructed to check at the nursing station before entering the AIIR
- For tuberculosis:
  - Close contact visitors (those who had close contact with the case prior to admission) should be screened for the presence of cough
  - Close contact visitors who have a cough should be sent for a tuberculosis assessment as soon as possible and until assessed, they should only visit if it is essential and should wear a mask while in the facility
- For other airborne infections (varicella and measles):
  - Visitors should be advised that they should not visit if they are non-immune
  - Non-immune visitors, whose visit is deemed essential, may visit if appropriate personal protective equipment is worn

Aerosol-generating medical procedures (AGMPs)

The following strategies should be applied to reduce the level of aerosol generation when performing AGMPs for patients on Airborne Precautions:

- AGMPs should be limited to those that are medically necessary
- If possible, AGMPs should be anticipated and planned
- Appropriate patient sedation should be used
- The number of personnel in the room should be limited to those required
- AGMPs must be performed in an AIIR, whenever feasible
- A single room (with the door closed and away from high-risk patients) should be used in settings where AIIRs are not available

- Respirators should be worn by all personnel in the room
- For intubated and ventilated patients:
    - A bacterial filter should be placed on the endotracheal tube to prevent contamination of the ventilator and the ambient air
    - Endotracheal suction should be performed using a closed suction apparatus

Duration of precautions

- Airborne Precautions should be discontinued after signs and symptoms of the infection have resolved or as per the pathogen-specific recommendations in Appendix F
- Sufficient time (e.g., one hour for rooms with six air exchanges per hour) should be allowed for the air to be free of aerosolized droplet nuclei before the room can be used again

Handling of deceased bodies

- Routine Practices, properly and consistently applied, in addition to Airborne Precautions, should be used for handling deceased bodies, preparing bodies for autopsy or for transfer to mortuary services
- Airborne Precautions should be continued for the handling of the deceased until appropriate time has elapsed to remove airborne contaminants in the room

Management of personnel

All HCWs should have their immune status to measles and varicella documented by Occupational Health Services. It is recommended that all HCWs be aware of their immune status to varicella and measles. The criterion for immunity is provided in the *Newfoundland and Labrador Immunization Manual*.[4]

- HCWs non-immune to varicella should not care for a patient known or suspected to have varicella
- HCWs non-immune to measles should not care for a patient known or suspected to have measles
    - In circumstances where this is unavoidable, a respirator should be worn and gloves worn if caring for patients with varicella or disseminated zoster

[4] Section 8.1: Guideline for the Preplacement Communicable Disease Screening of Healthcare Workers

Management of patients with airborne infections

Tuberculosis

The management recommendations for patients with tuberculosis are available in the provincial *Guideline for Preventing the Transmission of Mycobacterium tuberculosis across the Continuum of Care*.[5]

Varicella

- The patient should remain in the room until all lesions have crusted
- Susceptible visitors should not enter the room
    - If exceptional circumstance make this necessary, they should wear a respirator and gloves
- If the patient has to leave the room for medical purposes the patient should wear a mask and have skin lesions covered with a clean sheet to prevent aerosolization of the infectious agent
- The immune status of exposed roommates and other exposed close contacts should be determined
- An exposed susceptible hospitalized contact should be placed in an AIIR for the incubation period (as per Appendix F)
- It should be determined if the susceptible contacts are candidates for the varicella vaccine and/or varicella zoster immune globulin; the prophylaxis should be provided as per the recommendations of the Medical Officer of Health

Measles

- The patient should remain in the room until four days after onset of the rash or for the duration of illness if immunocompromised
- Susceptible visitors should not enter the room
    - If exceptional circumstance make this necessary, they should wear a respirator
- If the patient has to leave the room for medical purposes the patient should wear a mask
- The immune status of exposed roommates and other exposed close contacts should be determined

[5] Section 7: Tuberculosis Control within Facilities

- An exposed susceptible hospitalized contact should be placed in an AIIR for the incubation period (as per Appendix F)
- It should be determined if the susceptible contacts are candidates for the measles vaccine and/or immune globulin; the prophylaxis should be provided as per the recommendations of the Medical Officer of Health

4. Environmental Controls

Cleaning of equipment

- Non-critical patient-care equipment (e.g., thermometers, blood pressure cuff, pulse oximeter) should be dedicated to the use of one patient and cleaned and disinfected before reuse with another patient
- Single use devices should be used and discarded after use

Environmental cleaning

- As per Routine Practices
- Environmental services staff must wear PPE when cleaning an AIIR

Management of laundry dishes and waste

- No special precautions are required

5. Education

- Patients, their visitors, families and their decision makers should be educated about the precautions being used, the duration of precautions, as well as the prevention of transmission of disease to others with a particular focus on hand and respiratory hygiene
- Visitors who participate in patient care should be instructed about the appropriate PPE
    - In the adult setting, the PPE required would be the same as for the HCW unless it is determined that they have had prolonged exposure to the patient or if immune to the specific disease/condition requiring precautions
    - Visitors should be shown how to perform a seal check if wearing a respirator; fit testing is not required

Modifications for Airborne Precautions in Specific Healthcare Settings

Routine Practices and Airborne Precautions should be followed for all healthcare settings and modified as necessary. It should be recognized that patients on Additional Precautions may have fewer contacts with healthcare providers and that this may reduce their quality of care; steps therefore should be taken to mitigate this impact on care.

Component	Long-term Care	Ambulatory Care	Home Care	Prehospital Care
Patient placement and accommodation	• The residents should have their tuberculosis infection status assessed prior to admission • The immune status (measles and varicella) of residents should be assessed at the time of admission • If an AIIR is not available when required, the resident may need to be transferred to a facility with one • If the transfer is delayed the resident should be placed in a single room with the door closed, as far away from other persons as possible • The number of people entering the room should be limited • Infectious residents should not be placed on units where there are susceptible immunocompromised patients	• A system should be developed to identify patients with known or suspected infections spread by the airborne route • Patients with suspected/known airborne infections should be directed to put a mask on upon entry to the facility • Patients with suspected/known airborne infection should be placed into an AIIR immediately • The patient may remove the mask when in the AIIR • If an AIIR is unavailable, the patient should be placed in a single room, with the door closed	• The patients should be screened for airborne infections prior to visits to the home • If the patient is deemed infectious, a respirator should be worn by healthcare visitors	• Patients should be screened for airborne infections prior to the visit, if possible • Perform a PCRA prior to entering the home, if possible • Single patient transport is preferred • The receiving facility should be notified that precautions are indicated • If the patient cannot wear a mask during transport, the transport personnel should wear a respirator • The vehicle ventilation system should be used to create a negative pressure environment; where not available, open windows • A filtered oxygen mask should be used

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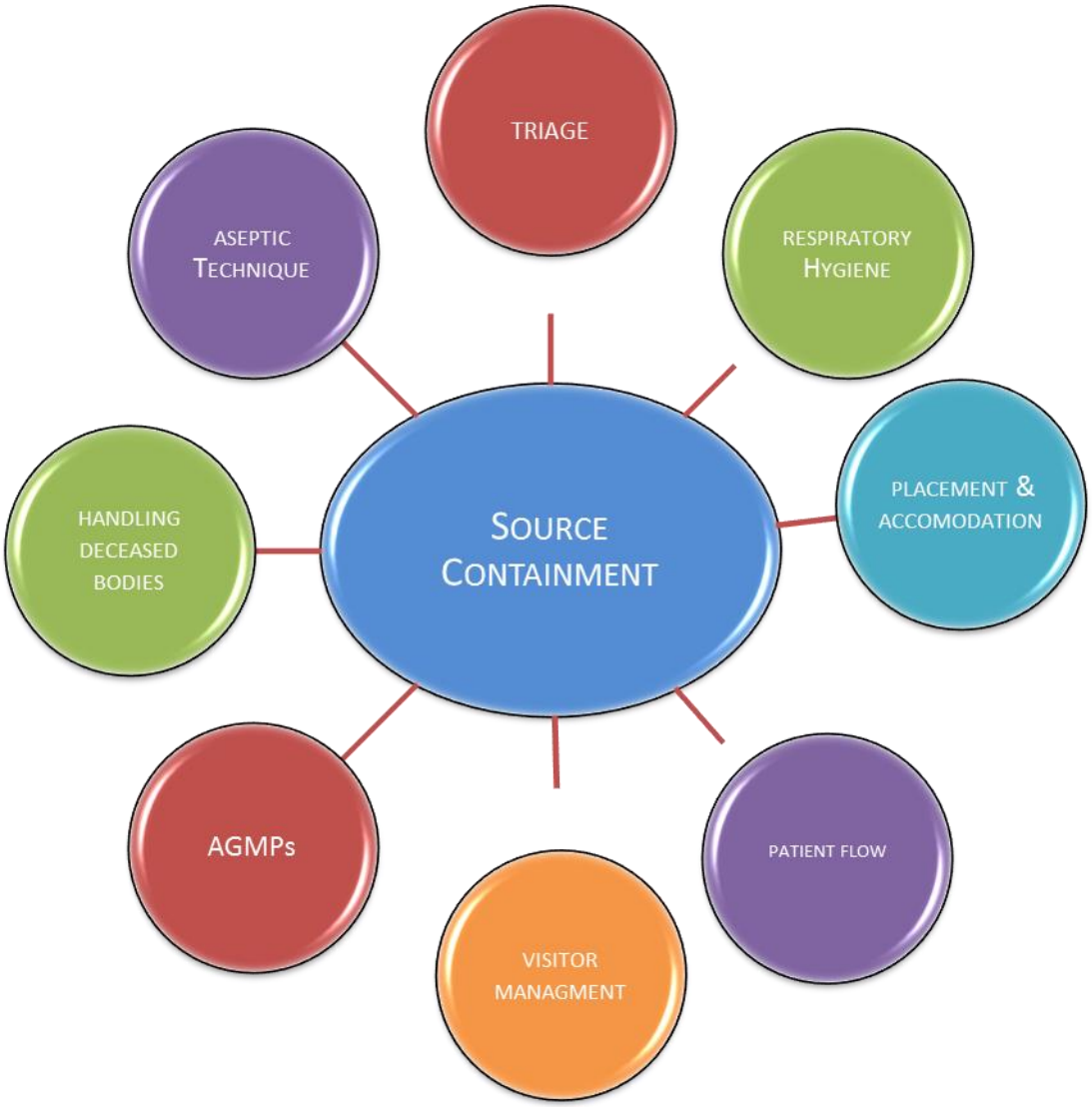
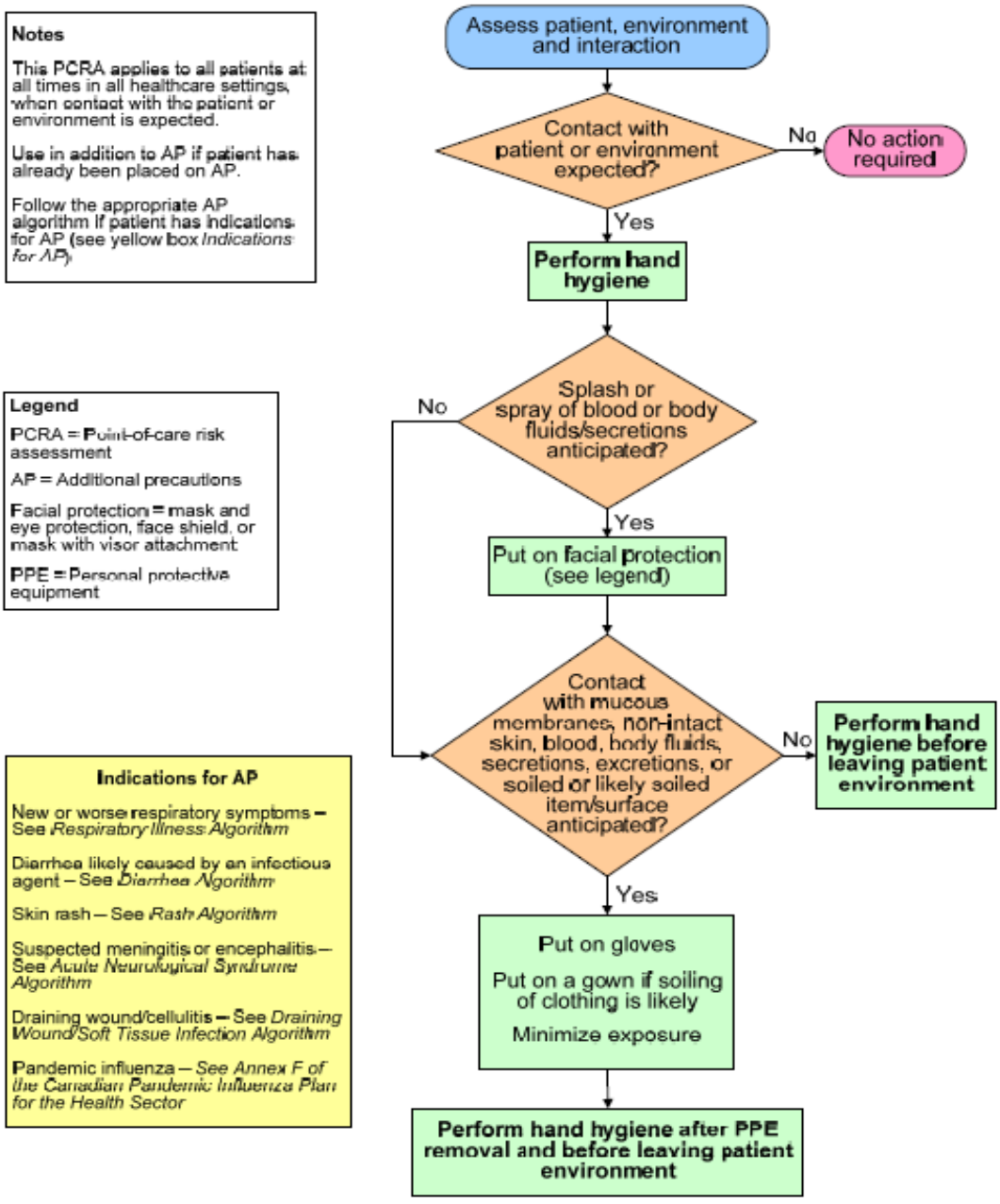
Appendix A: Elements of Routine Practices Summary

Components of Source Containment



Components of Environmental Controls

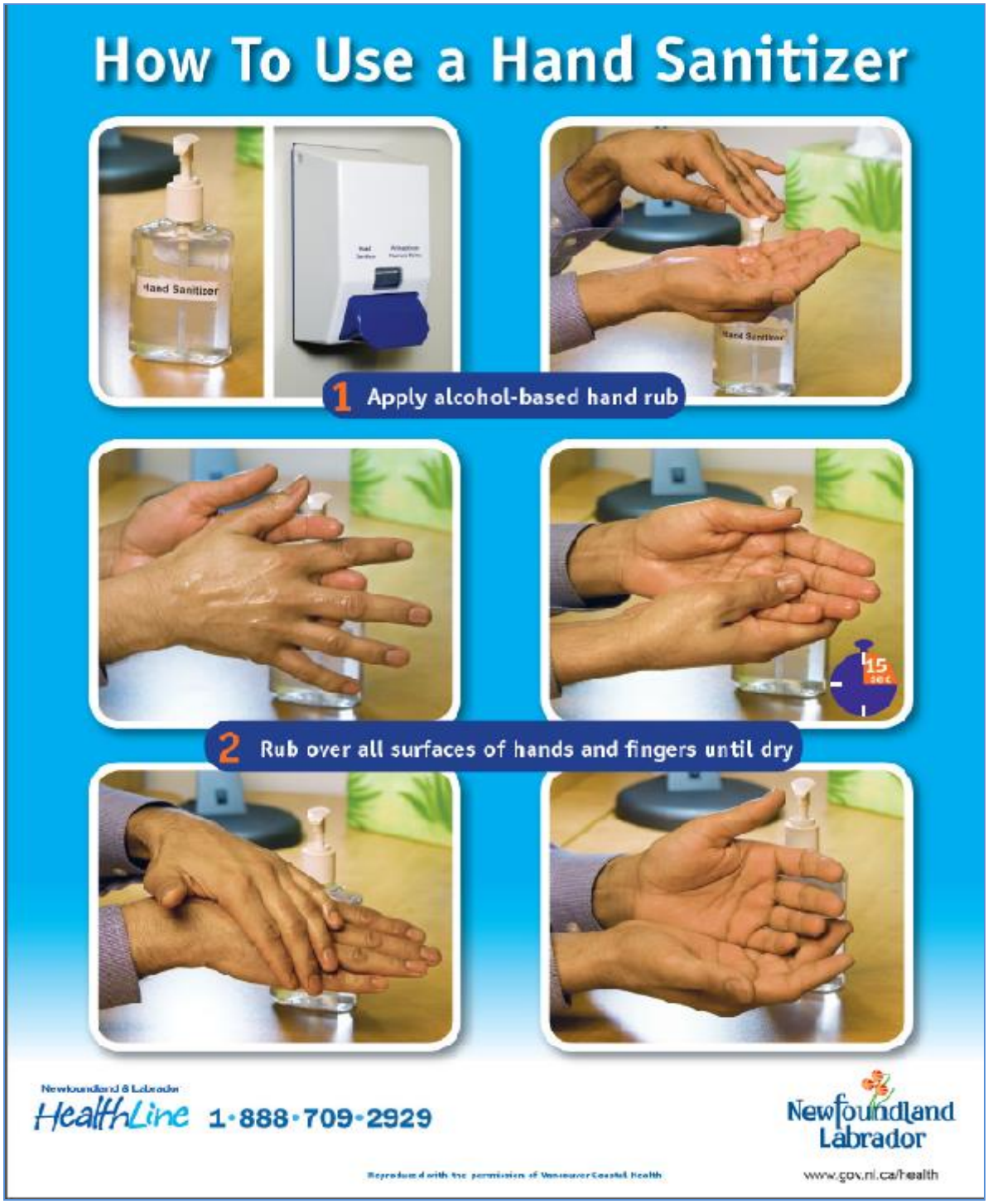
Appendix B: Point of Care Risk Assessment for Routine Practices Algorithm: Appropriate Use of Personal Protective Equipment[6]



[6] Routine Practices and Additional Precautions Assessment and Educational Tools. (2012). Page 9.

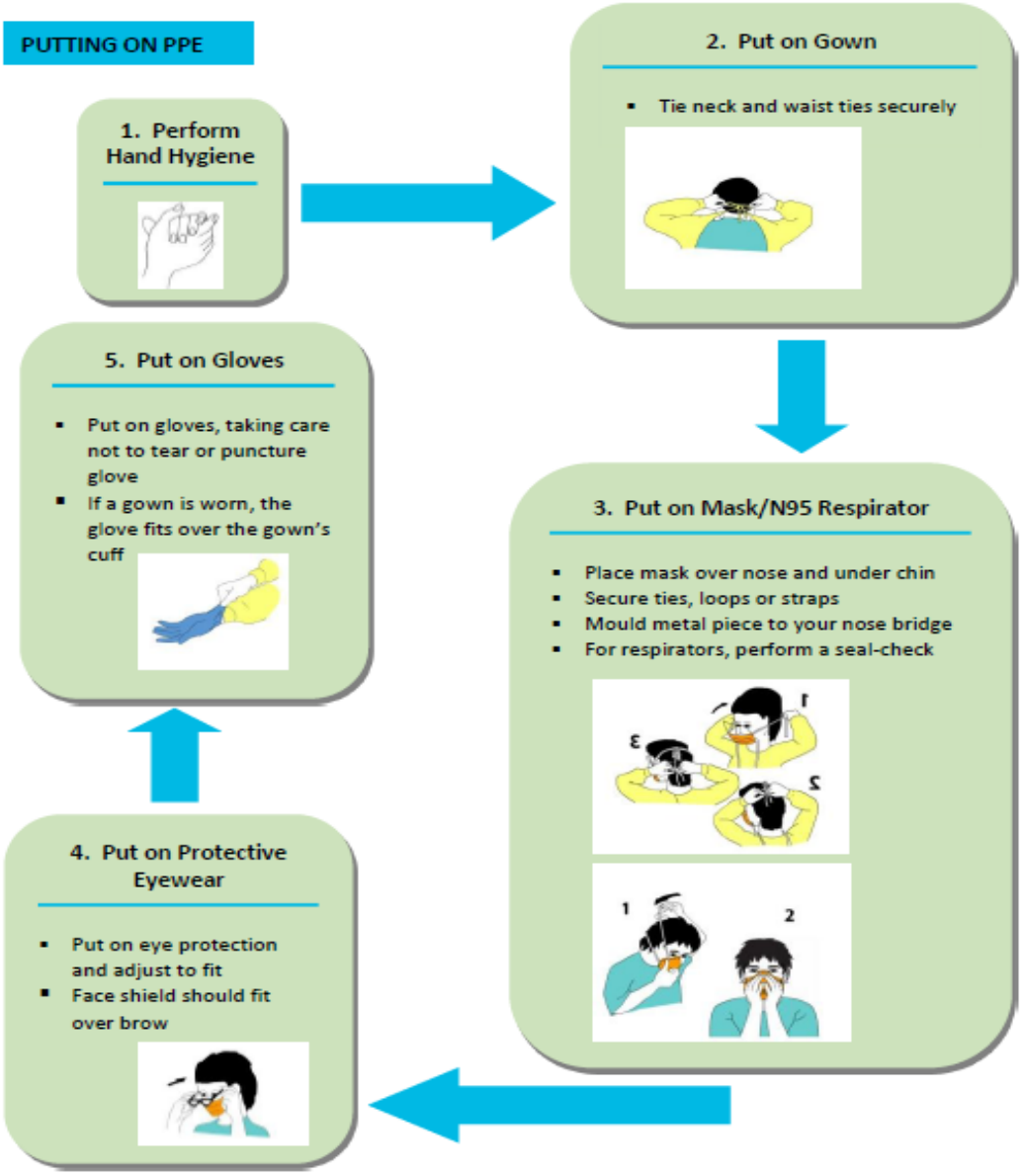
Appendix C: Hand Hygiene Techniques

How to handrub

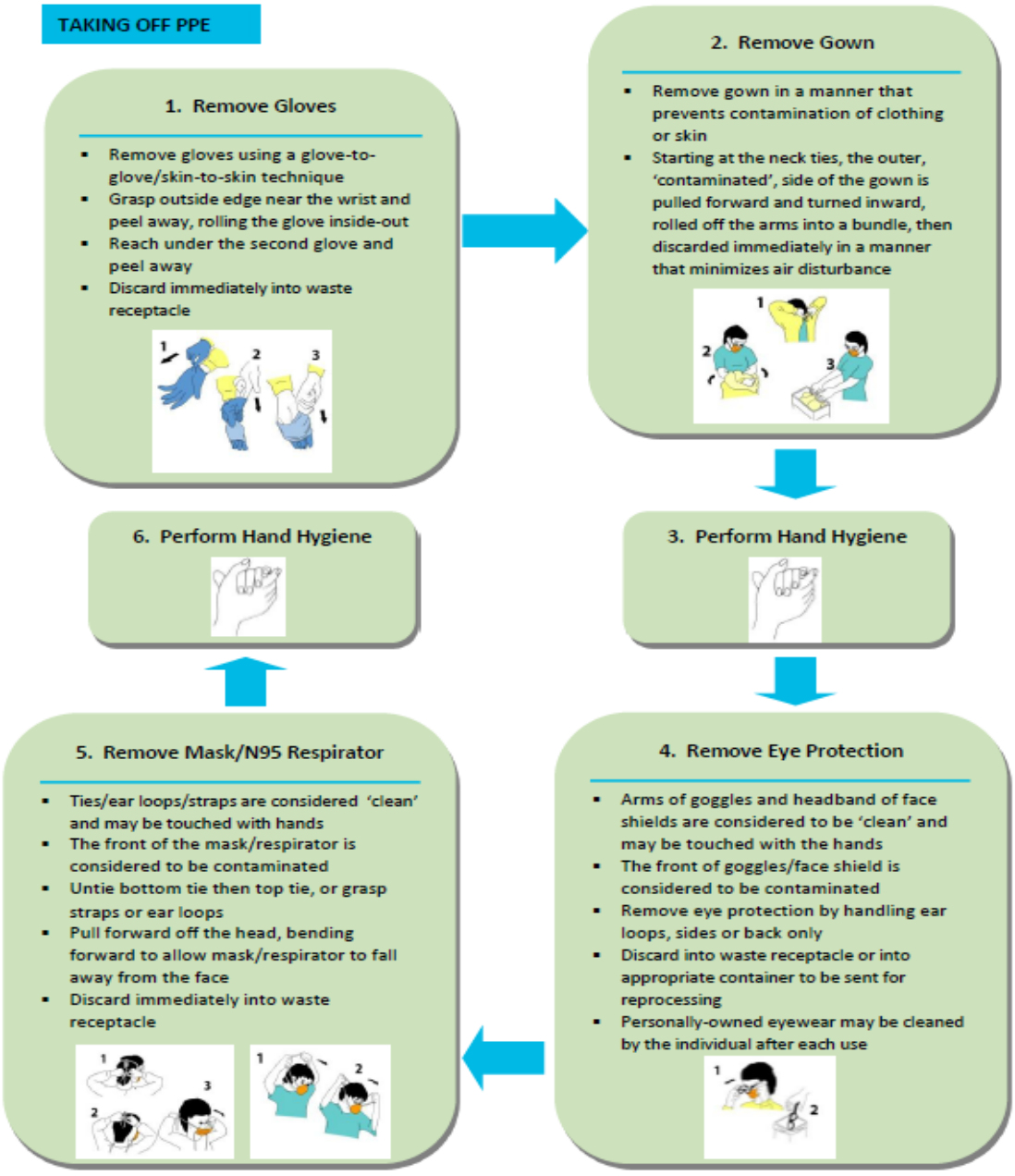


How to handwash

Appendix D: Recommended Steps for Putting On and Taking Off Personal Protective Equipment (PPE)[7]



[7] Public Health Agency of Canada. (2012). Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Healthcare Settings. P. 153.



Source: Provincial Infectious Diseases Advisory Committee, Ontario. November, 2013. Images developed by Kevin Rostant. Some images adapted from Northwestern Ontario Infection Control Network.

Appendix E: Transmission Characteristics and Precautions[8]

Transmission characteristics and precautions by condition/clinical presentation. Once specific etiology is known, refer to Appendix F

Condition/ clinical presentation	Potential pathogens	Precautions	Infective material	Route of transmission	Duration of precautions	Comments
Abscess See draining wound						
Bronchiolitis	RSV, human metapneumovirus parainfluenza virus, influenza, adenovirus	**Droplet and contact**	Respiratory secretions	Large droplet and direct and indirect contact	Duration of symptoms	Patient should not share room with high-risk roommates
Burns, infected See draining wound						
Cellulitis Draining: See draining wound Periorbital in child <5 years old without portal of entry	*H. influenzae* type B in non-immune child <2 years of age; *Streptococcus pneumoniae,* Group A *Streptococcus, S. aureus*, other bacteria	**Droplet if *H. influenzae* type B is possible cause, otherwise routine practices**	Respiratory secretions	Large droplet, direct contact	Until 24 hours of appropriate antimicrobial therapy received or if *H. influenzae* type B ruled out	
Cold	Rhinovirus, RSV, human metapneumovirus, parainfluenza, adenovirus, coronavirus	**Droplet and contact**	Respiratory secretions	Large droplet and direct and indirect contact	Duration of symptoms	Patient should not share room with high-risk roommates
Conjunctivitis	Adenovirus, enterovirus, chlamydia, *Neisseria gonorrhea*, other microbial agents	**Contact**[a]	Eye discharge	Direct and indirect contact	Until viral etiology ruled out; duration of symptoms, up to 14 days if viral	[a]Routine if non-viral
Cough, fever, acute upper respiratory tract infection	Rhinovirus, RSV, human metapneumovirus parainfluenza, influenza, adenovirus, coronavirus, pertussis	**Droplet and contact**	Respiratory secretions	Large droplet, direct and indirect contact	Duration of symptoms or until infectious etiology ruled out	Consider fever and asthma in child <2 years old as viral infection Patient should not share room with high-risk roommates

[8] Public Health Agency of Canada. (2012). Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Healthcare Settings. This version has slight changes from the original document provided by PHAC.

Condition/ clinical presentation	Potential pathogens	Precautions	Infective material	Route of transmission	Duration of precautions	Comments
Cough, fever, pulmonary infiltrates in person at risk for TB	*Mycobacterium tuberculosis*	**Airborne**	Respiratory secretions	Airborne	Until infectious TB is ruled out Until patient has received 2 weeks of effective therapy, and is improving clinically, and has 3 consecutive sputum smears negative for acid fast bacilli collected 3 hours apart If multi-drug-resistant TB, until sputum culture negative	TB in young children is rarely transmissible Assess visiting family members for cough *http://www.respiratoryguidelines.ca/tb-standards-2013*
Croup	Parainfluenza, influenza, human metapneumovirus, RSV, adenovirus	**Droplet and contact**	Respiratory secretions	Large droplet, direct and indirect contact	Duration of symptoms or until infectious cause ruled out	Patient should not share room with high-risk roommates
Decubitius (pressure ulcer, draining) See draining wound						
Dermatitis See draining wound	Many (bacteria, virus, fungus)	**Contact**	Pus	Direct and indirect contact	Until infectious etiology ruled out	If compatible with scabies, take appropriate precautions pending diagnosis
Desquamation, extensive See draining wound	*S. aureus*	**Contact**	Pus	Direct and indirect contact	Until contained or infection ruled out	
Diarrhea See gastroenteritis Acute diarrhea of likely infectious cause						
Draining wounds	*S. aureus*, Group A *Streptococcus*, many other bacteria	**Routine** **Contact:[b] Major wound, droplet[c]**	Pus	Direct and indirect contact	Duration of drainage	[b]Major: drainage not contained by dressing [c]Droplet for first 24 hours of antimicrobial therapy if invasive group A streptococcal infection suspected
Encephalitis	Multiple microbial agents including herpes simplex virus (HSV), enterovirus, arbovirus (West Nile virus)	**ADULT: Routine[a]** **PAEDIATRIC: Contact[d]**	Feces, respiratory secretions	Direct and indirect contact (fecal/oral)	Until specific etiology established or until enterovirus ruled out	[a]May be associated with other agents including measles, mumps, varicella. If identified, take appropriate precautions for associated disease

Condition/ clinical presentation	Potential pathogens	Precautions	Infective material	Route of transmission	Duration of precautions	Comments
Endometritis	Group A *Streptococcus*; many other bacteria	**Routine unless signs of toxic shock**[e]				[e]Contact and droplet for the first 24 hours of antimicrobial therapy if invasive group A *Streptococcus* suspected.
Enterocolitis See diarrhea						
Epiglottitis In child <5 years old	*H. influenzae* type B; **Possible in non-immune infant <2 years of age,** group A *Streptococcus*, *S. aureus*	**Droplet if *H. influenzae* type B is possible cause, otherwise routine**	Respiratory secretions	Large droplet, direct contact	Until 24 hours of appropriate antimicrobial therapy received or until *H. influenzae* type B ruled out	
Erysipelas Draining: See draining wound	Group A *Streptococcus*	**Routine**				
Febrile respiratory illness Usually present with symptoms of a fever greater than 38 °C *and* new or worsening cough or shortness of breath	Wide range of droplet-spread respiratory infections, such as colds, influenza, influenza-like illness and pneumonia	**Contact and droplet precautions**	Respiratory secretions			Note: elderly people and people who are immunocompromised may not have a febrile response to a respiratory infection See *Ontario Best Practices for Preventing Acute Respiratory Infection in All Health Care Settings*
Fever without focus (acute, in children)	**Enterovirus and other pathogens**	**ADULT: Routine**[f] **PAEDIATRIC: Contact**	Feces, respiratory secretions	Direct or indirect contact (fecal/oral)	Duration of symptoms or until enteroviral infection ruled out	[f]If findings suggest a specific transmissible infection, take precautions for that infection pending diagnosis
Food poisoning	*Bacillus cereus*, *Clostridium perfringens*, *S. aureus*, *Salmonella*, *Vibrio parahaemolyticus*, *Escherichia coli O157, Listeria* and others	**ADULT: Routine**[g] **PAEDIATRIC: Contact**	Food; feces if *Salmonella* or *Escherichia coli* O157	Foodborne, or direct and indirect contact (fecal/oral)		[g]Consider contact precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment Contact precautions apply to children who are incontinent or unable to comply with hygiene

Condition/ clinical presentation	Potential pathogens	Precautions	Infective material	Route of transmission	Duration of precautions	Comments
Furuncles See draining wound	*S. aureus*					
Gas gangrene Draining: See draining wound	*Clostridium* spp.					
Gastroenteritis	Diarrhea and/or vomiting due to infection or toxin	**ADULT: Contact[h]** **PAEDIATRIC: Contact**	Feces	Direct and indirect contact (fecal/oral)	Duration of symptoms for *C. difficilie*, norovirus, rotavirus until ruled out. In pediatrics, until normal stools or infectious etiology ruled out	[h]Use contact precautions until *C. difficile*, norovirus, rotavirus ruled out. Consider contact precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment Contact precautions apply to children who are incontinent or unable to comply with hygiene See Appendix F for specific etiologies
Gingivostomatitis	HSV, other causes including radiation therapy, chemotherapy, idiopathic (aphthous)	**Contact if primary and extensive HSV related.** **Otherwise routine**	Mucosal lesions	Direct contact	While lesions present	
Guillain-Barré syndrome	Some cases associated with infection (e.g., campylobacter)[i]					[i]Take precautions as appropriate for known or suspected associated infection
Hand, foot and mouth disease	Enteroviruses such as coxsachievirus and echovirus	**ADULT: Routine** **PAEDIATRIC: Contact**	Feces, respiratory secretions	Direct and indirect contact (fecal/oral)	Duration of symptoms	Contact precautions apply to children who are incontinent or unable to comply with hygiene
Hemolytic-uremic syndrome	Some associated with *E. coli* O157	**ADULT: Routine[j]** **PAEDIATRIC: Contact**	Feces	Direct and indirect contact (fecal/oral)	Until *E. coli* O157 ruled out	[j]Consider contact precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment Contact precautions apply to children who are incontinent or unable to comply with hygiene

Condition/ clinical presentation	Potential pathogens	Precautions	Infective material	Route of transmission	Duration of precautions	Comments
Hemorrhagic fever acquired in appropriate endemic or epidemic area	Ebola, Lassa, Marburg, Crimean-Congo and others	**Contact and droplet AGMP[k]**	Blood and bloody body fluids; respiratory secretions; skin if Ebola and urine if Lassa	Direct and indirect contact; possibly aerosol if pneumonia Lassa: Sexual contact	Duration of symptoms or until hemorrhagic fever virus ruled out	Local public health authorities should be notified immediately [k]If AGMP See Airborne Precautions
Hepatitis of unknown etiology	Hepatitis A, B, C, E viruses, Epstein-Barr virus and others	**ADULT: Routine[l]** **PAEDIATRIC: Contact**	Feces; blood and certain body fluids	Mucosal or percutaneous exposure to infective body fluids Sexual transmission Vertical; mother to child Direct and indirect contact (fecal/oral) for hepatitis A, E	For 7 days after onset of jaundice or until hepatitis A and E epidemiologically excluded	[l]Consider contact precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment unless hepatitis A and E are epidemiologically excluded Contact precautions apply to children who are incontinent or unable to comply with hygiene
Herpangina	Enterovirus	**ADULT: Routine** **PAEDIATRIC: Contact**	Feces, respiratory secretions	Direct and indirect contact (fecal/oral)	Duration of symptoms	Contact precautions apply to children who are incontinent or unable to comply with hygiene
Impetigo See draining wound	Group A *Streptococcus*, *S. aureus*					See *Staphylococcus aureus* and Group A Streptococcus
Influenza-like illness	Influenza, other respiratory viruses	**Contact and droplet**	Respiratory secretions	Large droplet, direct and indirect contact	Duration of symptoms or until infectious etiology identified or ruled out	
Kawasaki disease (mucocutaneous lymph node syndrome)	Unknown	**Routine**				Not known to be transmissible
Meningitis	Bacterial: *Neisseria meningitidis, H. influenzae* type B possible in non-immune infant <2 years of age, *Streptococcus pneumoniae*, Group B *Streptococcus*, *Listeria monocytogenes*, *E. coli* and other Gram-negative rods	**ADULT: Droplet until *Neisseria meningitidis* ruled out, otherwise routine** **PAEDIATRIC: Droplet and contact[m]**	Respiratory secretions	Large droplet, direct contact	Until 24 hours of appropriate antimicrobial therapy received	[m]Pediatrics: precautions for both bacterial and viral until etiology established. Contact precautions apply to children who are incontinent or unable to comply with hygiene
	Mycobacterium tuberculosis	**Routine[n]**				[n]Rule out associated respiratory TB

Condition/ clinical presentation	Potential pathogens	Precautions	Infective material	Route of transmission	Duration of precautions	Comments
	Viral: enterovirus, arboviruses	**ADULT: Routine[o] PAEDIATRIC: Contact[o]**	Feces, respiratory secretions	Direct or indirect contact	Until enterovirus ruled out	[o]May be associated with measles, mumps, varicella, HSV. If identified, take appropriate precautions for associated disease
	Fungus	**Routine**				
Necrotizing enterocolitis	Unknown, probably many organisms	**Routine[p]**			Duration of symptoms	[p]Unknown if transmissible Take precautions if outbreak suspected
Osteomyelitis	*H. influenzae* type B possible in non-immune infant <2 years of age, *S. aureus*, other bacteria	**ADULT: Routine PAEDIATRIC: Droplet if *H. influenzae* type B possible; otherwise routine**			Until 24 hours of effective antimicrobial therapy or until *H. influenzae* type B ruled out	
Otitis, draining See draining wound						
Paroxysmal cough, suspected pertussis	*Bordetella pertussis, Bordetella parapertussis*	**Droplet**	Respiratory secretions	Large droplets	Until pertussis ruled out or 3 weeks after onset of paroxysmals if not treated or until 5 days of antimicrobial therapy received	Close contacts (household and HCWs) may need chemoprophylaxis and/or immunization If HCWs immunization not up to date, refer to OH and/or delegate Refer to Canadian Immunization Guide 7th Ed., 2006 for specific information available at: http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php
Pharyngitis	Group A *Streptococcus*, viral, *Corynebacterium diphtheriae*	**Droplet and contact**	Respiratory secretions	Direct and indirect contact; large droplets	Duration of symptoms; if Group A *Streptococcus* until 24 hours of antimicrobial therapy received	If diphtheria suspected, see Appendix F
Pleurodynia	Enterovirus	**ADULT: Routine PAEDIATRIC: Contact**	Feces, respiratory secretions	Direct and indirect contact (fecal/oral)	Duration of symptoms	Contact precautions apply to children who are incontinent or unable to comply with hygiene

Condition/ clinical presentation	Potential pathogens	Precautions	Infective material	Route of transmission	Duration of precautions	Comments
Pneumonia	Viruses, pertussis, *Mycoplasma, Streptococcus pneumoniae, H. influenzae* type B, *S. aureus,* group A *Streptococcus*, Gram-negative enteric rods, *Chlamydia, Legionella, Pneumocystis*, other fungi; other agents	**ADULT: Routine[q] PAEDIATRIC: Droplet and contact**	Respiratory secretions	Large droplets, direct and indirect contact	Until etiology established, then as for specific organism; no special precautions for pneumonia unless ARO, then use Contact	[q]Routine for adults unless clinical, epidemiologic or microbiologic data to necessitate contact and droplet precautions (i.e., on contact and droplet for viral etiologies) Minimize exposure of immunocompromised patients, patients with chronic cardiac or lung disease, neonates
Pseudomembranous colitis	*C. difficile*	**Contact**	Feces	Direct and indirect contact (fecal/oral)	Duration of symptoms	Until 48 hours after stool is normal.
Rash compatible with scabies	*Sarcoptes scabiei*	**Contact**	Mites	Direct and indirect contact	If confirmed, until 24 hours after initiation of appropriate therapy	For typical scabies, routine (use gloves and gown for direct patient contact only) See scabies, Appendix F
Rash (maculopapular) with fever and one of coryza, conjunctivitis or cough	Measles	**Airborne**	Respiratory secretions	Airborne	If confirmed, until 4 days after onset of rash in otherwise healthy children and for the duration of illness in immunocompromised patients	See measles, Appendix F
Rash (petechial/purpuric) with fever	*Neisseria meningitidis*	**Droplet if *N. meningitidis* suspected, otherwise routine**	Respiratory secretions	Large droplets, direct contact	Discontinue if *Neisseria meningitidis* ruled out If *N. meningitidis* confirmed, until 24 hours of appropriate antimicrobial therapy received	
Rash (vesicular) with fever	Varicella	**Airborne and contact**	Respiratory secretions, skin lesion drainage	Airborne, direct and indirect contact	If confirmed, until all lesions are dry	See varicella, Appendix F
Rash, vesicular/pustular in appropriate epidemiologic context until smallpox, disseminated vaccinia and monkeypox ruled out	Smallpox, disseminated vaccinia, monkeypox	**Contact, droplet and airborne**	Lesions and respiratory secretions (monkeypox) Skin lesion exudate, oropharyngeal secretions (smallpox, disseminated vaccinia)			

Condition/ clinical presentation	Potential pathogens	Precautions	Infective material	Route of transmission	Duration of precautions	Comments
Reye's syndrome	May be associated with viral infection, especially influenza, varicella					Precautions for known or suspected associated viral infection
Scalded skin syndrome (Ritter`s Disease)		**Routine**				
Septic arthritis	*H. influenzae* type B possible in non-immune infant <2 years of age; *S. aureus, Streptococcus pneumoniae,* group A *Streptococcus*, *N gonorrhoea*, other bacteria	**ADULT: Routine PAEDIATRIC: Droplet if *H. influenzae* type B possible; otherwise routine**	Respiratory secretions for *H. influenzae* type B	Large droplet, direct contact *H. influenzae* type B	Until 24 hours of appropriate antimicrobial therapy received or until *H. influenzae* type B ruled out	
Severe respiratory illness See febrile respiratory illness						
Skin infection See cellulitus						
Toxic shock syndrome	*S. aureus,* Group A *Streptococcus*	**Droplet[r]** **Routine**				[r]Droplet for first 24 hours of antimicrobial therapy if invasive group A streptococcal infection suspected See draining wound if drainage or pus
Urinary tract infection	Many	**Routine[s]**				[s]Contact if ARO
Vincent's angina, Trench mouth	Multiple bacteria	**Routine**				
Wound infection See draining wound						

Appendix F: Transmission Characteristics by Specific Etiology[9]

Transmission characteristics and precautions by specific etiology

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Actinomycosis (*Actinomyces* sp.)	Cervicofacial, thoracic or abdominal infection	**Routine**			Variable	Not person to person		Normal flora; infection usually secondary to trauma.
Adenovirus Respiratory strains	Respiratory tract infection (pneumonia)	**Droplet and contact**	Respiratory secretions	Large droplets; direct and indirect contact	1–10 days	Shortly before and until symptoms cease	Duration of symptoms	Different strains responsible for respiratory and gastrointestinal disease Patient should not share room with high-risk roommates Minimize exposure of immunocompromised patients, patients with chronic cardiac or lung disease, neonates. Symptoms may be prolonged in immunocompromised patients
	Conjunctivitis	**Contact**	Eye discharge	Direct and indirect contact	5–12 days	Late in incubation period until 14 days after onset	Duration of symptoms, up to 14 days	Careful attention to aseptic technique and reprocessing of ophthalmology equipment to prevent epidemic keratoconjunctivitis
Adenovirus Enteric strains	Diarrhea	**ADULT: Routine[a]** **PAEDIATRIC: Contact**	Feces	Direct and indirect contact (fecal/oral)	3–10 days	Until symptoms cease	Duration of symptoms	[a]Consider contact precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment Contact precautions apply to children who are incontinent or unable to comply with hygiene

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Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Amebiasis (*Entamoeba histolytica*)	Dysentery and liver abscess	**ADULT: Routine[b] PAEDIATRIC: Contact**	Feces	Direct and indirect contact (fecal/oral)	2–4 weeks	Duration of cyst excretion	Duration of symptoms	[b]Consider contact precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment Contact precautions apply to children who are incontinent or unable to comply with hygiene
Anthrax (*Bacillus anthracis*)	Cutaneous, pulmonary	**Routine**			1–7 days; maybe up to 60 days	Not person-to-person		Acquired from contact with infected animals and animal products Inhalation anthrax may occur as a result of occupational exposure to anthrax spores or as a result of bioterrorism Decontamination and postexposure prophylaxis necessary for exposure to aerosols in laboratory exposures or biological terrorism
Antimicrobial-resistant organisms (AROs) Includes MRSA, VRE,-resistant Gram-negative rods and other organisms, as per ICP	Infection or colonization (i.e., asymptomatic) of any body site	**Contact[c]**	Infected or colonized secretions, excretions	Direct and indirect contact	Variable	Variable	As directed by ICP	[c]Contact precautions for acute care (for the purpose of this document, acute care includes ambulatory care settings such as hospital emergency departments, and free-standing or facility-associated ambulatory (day) surgery or other invasive day procedures (e.g., endoscopy units, hemodialysis, ambulatory wound clinics) When symptomatic, precautions should be determined on a case by case basis as per ICP When asymptomatic, precautions not necessary in LTC, ambulatory, prehospital and home care See Appendix VI, 2. ARO See IP&C Measures for HCWs in All Healthcare Settings – Carbapenaemase-resistant Gram-negative bacilli at: http://www.phac-aspc.gc.ca/nois-sinp/guide/pubs-eng.php

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Arthropod borne virus[d] (arboviruses)	Encephalitis, fever, rash, arthralgia, meningitis	**Routine**	Blood, tissues	Vector-borne (spread by mosquitoes, ticks)	3–21 days (varies with different arboviruses)	Not person to person except rarely by blood transfusion or organ transplantation		[d]Over 100 different viruses, most limited to specific geographic areas In North America: West Nile is most common; others include California, St. Louis, Western equine, Eastern equine, Powassan, Colorado tick, Snowshoe hare, Jamestown Canyon
Ascariasis (*Ascaris lumbricoides*) (roundworm)	Usually asymptomatic	**Routine**				Not person to person		Ova must hatch in soil to become infective.
Aspergillosis (*Aspergillus* spp.)	Skin, lung, wound or central nervous system infection	**Routine**				Not person to person		Spores in dust; infections in immunocompromised patients may be associated with construction
Avian influenza See influenza								
Astrovirus	Diarrhea	**ADULT: Routine[e] PAEDIATRIC: Contact**	Feces	Direct and indirect contact (fecal/oral)	3–4 days	Duration of symptoms	Duration of symptoms	[e]Contact precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment Contact precautions apply to children who are incontinent or unable to comply with hygiene
Babesiosis		**Routine**	Blood	Tick borne		Not person to person, except rarely by blood transfusion from asymptomatic parasitaemic donors		
Bacillus cereus	Food poisoning Nausea, vomiting, diarrhea, abdominal cramps	**Routine**		Foodborne				
Bed bugs (*Cimex lectularius*)	Allergic reactions and itchy welts.	**Routine**						Not known to transmit disease If necessary, consult professional pest control for infestation For information see: http://www.cdc.gov/nceh/ehs/publications/bed_bugs_cdc-epa_statement.htm

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Blastomycosis (*Blastomyces dermatitidis*)	Pneumonia, skin lesions	**Routine**				Not person to person		Acquired from spores in soil
Bocavirus Respiratory tract infection		**Droplet and contact**						May cohort if infected with same virus Patient should not share room with high-risk roommates
Botulism (*Clostridium botulinum*)	Flaccid paralysis; cranial nerve palsies	**Routine**		Foodborne		Not person to person		
Brucellosis (*Brucella sp.)* Undulant, Malta or Mediterranean fever	Systemic bacterial disease of acute or insidious onset	**Routine**			Weeks to months	Not transmitted person to person, except rarely via banked spermatozoa and sexual contact		Acquired from contact with infected animals or from contaminated food, mostly dairy products Brucella is hazardous to laboratory workers. Notify laboratory if diagnosis is suspected Prophylaxis necessary following laboratory exposure
	Draining lesions	**MINOR: Routine MAJOR: Contact[f]**	Drainage from open lesions	Possibly direct contact			Duration of drainage	[f]MAJOR: Contact precautions necessary only if wound drainage cannot be contained by dressings
Burkholderia cepacia	Exacerbation of chronic lung disease in patients with cystic fibrosis	**Contact[g]**					Until organism cleared as directed by ICP	B. cepacia can result in respiratory tract colonization or infection in patient with cystic fibrosis [g]If other cystic fibrosis patients are on the unit All interactions with other cystic fibrosis patients should be avoided
Caliciviruses See Noroviruses								
Campylobacter	Gastroenteritis	**ADULT: Routine[h] PAEDIATRIC: Contact**	Contaminated food, feces	Direct and indirect contact (fecal/oral)	2–5 days	Duration of excretion Person–to-person uncommon	Duration of symptoms	[h]Contact precautions for adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment Treatment with effective antimicrobial shortens period of infectivity Contact precautions apply to children who are incontinent or unable to comply with hygiene
Candidiasis (*Candida* sp.)	Many	**Routine**						Normal flora

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Cat scratch disease *(Bartonella henselae)*	Fever, lymphadenopathy	**Routine**			16–22 days	Not person to person		Acquired from animals (cats and others)
Chancroid (*Haemophilus ducreyi)*	Genital ulcers	**Routine**		Sexual transmission	3–5 days	Until healed and as long as infectious agent persists in the original lesion		
Chickenpox See varicella								
Chlamydia trachomatis	Urethritis, cervicitis, pelvic inflammatory disease; neonatal conjunctivitis, infant pneumonia; trachoma	**Routine**	Conjunctival and genital secretions	Sexual transmission Mother to child at birth Trachoma: direct/indirect contact	Variable	As long as organism present in secretions		
Chlamydia pneumoniae	Pneumonia	**Routine**	Respiratory secretions	Unknown	Unknown	Unknown		Rare outbreaks of pneumonia in institutionalized populations
Chlamydia (*Chlamydophila) psittaci* (Psittacosis, Ornithosis)	Pneumonia, undifferentiated fever	**Routine**	Infected birds		7–14 days	Not person to person		Acquired by inhalation of desiccated droppings, secretions and dust of infected birds
Cholera (*Vibrio cholerae* 01, 0139)	Diarrhea	**ADULT: Routine**[i] **PAEDIATRIC: Contact**	Feces	Direct and indirect contact (fecal/oral)	2–3 days	Duration of shedding	Duration of symptoms	[i]Consider contact precautions for adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment Contact precautions apply to children who are incontinent or unable to comply with hygiene

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Clostridium difficile	Diarrhea, pseudo-membranous colitis	**Contact**	Feces	Direct and indirect contact (fecal/oral)	Variable	Duration of shedding	Until symptom free for 48 hours	Bacterial spores persist in the environment Ensure scheduled environmental cleaning During outbreaks, special attention should be paid to cleaning; During continued transmission of *C. difficile* infection, the rooms or bedspace of patients suspected or confirmed to have *C. difficile* infection should be decontaminated and cleaned with a chlorine-containing cleaning agent (at least 1,000 parts per million [ppm]) or other sporicidal agent. Dedicate patient care equipment Relapses are common
Clostridium perfringens	Food poisoning	**Routine**		Foodborne	6–24 hours	Not person to person		
	Gas gangrene, abscesses, myonecrosis	**Routine**			Variable	Not person to person		Found in normal gut flora, soil; infection related to devitalized tissue
Coccidioido-mycosis (Coccidioides immitis)	Pneumonia, draining lesions	**Routine**			1–4 weeks	Not person to person		Acquired from spores in soil, dust in endemic areas
Colorado tick fever See Dengue Fever (Arbovirus)	Fever	**Routine**		Tick-borne	3–6 days	Not person to person		
Congenital rubella See Rubella								
Coronavirus (CoV) (other than SARS-CoV) For SARS CoV, see Severe acute respiratory syndrome	Common cold	**Droplet and contact**	Respiratory secretions	Direct and indirect contact Possible large droplet	2–4 days	Until symptoms cease	Duration of symptoms	May cohort if infected with same virus Patient should not share room with high-risk roommates
Coxsackievirus See Enteroviral infections								

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Creutzfeldt-Jakob disease (CJD)	Chronic encephalopathy	**Routine**[j]	Contaminated neurosurgical instruments; tissue grafts from infected donors					[j]PHAC guidelines for precautions for surgery and other procedures may be accessed at: http://www.phac-aspc.gc.ca/nois-sinp/guide/pubs-eng.php Notification of a suspected or diagnosed case of CJD should be made to the CJD surveillance system (1-888-489-2999)
Crimean-Congo fever **See Viral hemorrhagic fevers**								
Cryptococcosis (*Cryptococcus neoformans*)	Pneumonia, meningitis, adenopathy	**Routine**			Unknown	Not person to person		
Cryptosporidosis (*Cryptosporidium parvum*)	Diarrhea	**ADULT: Routine**[k] **PAEDIATRIC: Contact**	Feces	Direct and indirect contact (fecal/oral)	1–12 days	From onset of symptoms until several weeks after resolution	Duration of symptoms	[k]Consider contact precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment Contact precautions apply to children who are incontinent or unable to comply with hygiene
Cysticercosis (*Taenia solium larvae*)	T. solium larval cysts in various organs	**Routine**	Ova in feces	Direct contact (fecal/oral)	Months to years	While eggs present in feces		Transmissible only from humans with T. solium adult tapeworm in gastrointestinal tract (autoinfection occurs)
Cytomegalovirus	Usually asymptomatic; congenital infection, retinitis, mononucleosis, pneumonia, disseminated infection in immuno-compromised host	**Routine**	Saliva, genital secretions, urine, breast milk, transplanted organs or stem cells, blood products	Direct[l] Sexual transmission; vertical mother to child in utero, at birth or through breast milk Transfusion, transplantation	Unknown	Virus is excreted in urine, saliva, genital secretions, breast milk for many months; may persist or be episodic for life		No additional precautions for pregnant HCWs [l]Close direct personal contact necessary for transmission Disease is often due to reactivation in the patient rather than transmission of infection
Dengue (arbovirus)	Fever, arthralgia, rash	**Routine**		Mosquito-borne	3–14 days	Not person to person		

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Dermatophytosis See Tinea								
Diphtheria (*Corynebacterium diphtheriae*)	Cutaneous (characteristic ulcerative lesion)	**Contact**	Lesion drainage	Direct or indirect contact	2–5 days	If untreated, 2 weeks to several months	Until 2 cultures[m] from skin lesions are negative	[m]Cultures should be taken at least 24 hours apart and at least 24 hours after cessation of antimicrobial therapy. Close contacts should be given antimicrobial prophylaxis, as per most recent NACI recommendations available at: http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php
	Pharyngeal (adherent greyish membrane)	**Droplet**	Nasopharyngeal secretions	Large droplets,	2–5 days;	If untreated, 2 weeks to several months	Until 2 cultures[n] from both nose and throat are negative	[n]Cultures should be taken at least 24 hours apart and at least 24 hours after cessation of antimicrobial therapy Close contacts should be given antimicrobial prophylaxis
Ebola See Viral hemorrhagic fever								
Echinococcosis (hydatidosis) (E. granulosis, E. multilocularis)	Cysts in various organisms	**Routine**			Months to years	Not person to person		Acquired from contact with infected animals
Echovirus See Enterovirus								
Enterobiasis Oxyuriasis, pinworm (*Enterobius vermicularis*)	Perianal itching	**Routine**	Ova in stool, perianal region	Direct, indirect contact	Life cycle requires 2–6 weeks	As long as gravid females discharge eggs on perianal skin; eggs remain infective indoors about 2 weeks		Direct transfer of infective eggs by hand from anus to mouth of the same or another person; indirectly through clothing, bedding or other contaminated articles Close household contacts may need treatment
Enterococcus species (vancomycin-resistant only) See Vancomycin-resistant enterococci								

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Enteroviral infections Echovirus, Coxsackievirus A Coxsackievirus B Enterovirus Poliovirus - See poliomyelitis	Acute febrile symptoms, aseptic meningitis, encephalitis, pharyngitis, herpangina, rash, pleurodynia, hand, foot and mouth disease	**ADULT: Routine PAEDIATRIC: Contact**	Feces, respiratory secretions	Direct and indirect contact (fecal/oral)	3–5 days		Duration of symptoms If poliovirus, see Poliomyelitis	Contact precautions apply to children who are incontinent or unable to comply with hygiene
	Conjunctivitis	**Contact**	Eye discharge	Direct and indirect contact	1–3 days		Duration of symptoms	
Epstein-Barr virus	Infectious mononucleosis	**Routine**	Saliva, transplanted organs or stem cells	Direct oropharyngeal route via saliva; transplantation	4–6 weeks	Prolonged; pharyngeal excretion may be intermittent or persistent for years		
Erythema infectiosum See Parvovirus B19								
Escherichia coli (enteropathogenic and enterohemorrhagic strains)	Diarrhea, food poisoning, hemolytic-uremic syndrome, thrombotic thrombocytopenic purpura	**ADULT: Routine[o] PAEDIATRIC: Contact**	Feces	Direct and indirect contact (fecal/oral) Foodborne	1–8 days	Duration of shedding	Duration of symptoms If hemolytic-uremic syndrome: until 2 stools negative for E. coli O157:H7 or 10 days from onset of diarrhea	[o]Consider contact precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment Contact precautions apply to children who are incontinent or unable to comply with hygiene
Fifth disease See Parvovirus								
German measles See Rubella								

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Giardia (*Giardia lamblia*)	Diarrhea	**ADULT: Routine[p] PAEDIATRIC: Contact**	Feces	Direct and indirect contact (fecal/oral)	3–25 days	Entire period of infection; often months	Duration of symptoms	[p]Consider contact precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment Contact precautions apply to children who are incontinent or unable to comply with hygiene
Granuloma inguinale (Donovanosis) (Calymmatobacterium granulomatis)	Painless genital ulcers, inguinal ulcers, nodules	**Routine**		Sexual transmission	Unknown; probably between 1 and 16 weeks	Unknown; probably for the duration of open lesions on the skin or mucous membranes		
Haemophilus influenzae type B (invasive infections)	Pneumonia, epiglottitis, meningitis, bacteremia, septic arthritis, cellulitis, osteomyelitis in a child	**ADULT: Routine PAEDIATRIC: Droplet**	Respiratory secretions	Large droplets, direct contact	Variable	Most infectious in the week prior to onset of symptoms and during the symptoms until treated	Until 24 hours of appropriate antimicrobial therapy has been received	Close contacts <48 months old and who are not immune may need chemoprophylaxis Household contacts of such children should also receive prophylaxis
Hand foot and mouth disease See Enteroviral infections								
Hansen's disease See Leprosy								
Hantavius (Hantavirus pulmonary syndrome)	Fever, pneumonia	**Routine**	Rodent excreta	Presumed aerosol transmission from rodent excreta	A few days to 6 weeks	Not well defined, person to person is rare (person to person documented for South American strains)		Infection acquired from rodents
Helicobacter pylori	Gastritis, duodenal ulcer disease	**Routine**		Probable ingestion of organisms; presumed fecal/oral/oral/oral	5–10 days	Unknown		

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Hepatitis A, E	Hepatitis, anicteric acute febrile symptoms	**ADULT: Routine[q] PAEDIATRIC: Contact**	Feces	Direct and indirect contact (fecal/oral)	A: 28–30 days E: 26–42 days	A: 2 weeks before to 1 week after onset of jaundice Shedding is prolonged in the newborn E: not known; at least 2 weeks before onset of symptoms	1 week after onset of jaundice; duration of hospitalization if newborn	[q]Contact precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment Contact precautions apply to children who are incontinent or unable to comply with hygiene Postexposure prophylaxis indicated for non-immune household contacts with significant exposure to hepatitis A if within 2 weeks of exposure Refer to Canadian Immunization Guide for specific information: http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php Outbreaks of HAV in HCWs have been associated with eating and drinking in patient care areas
Hepatitis B, C, D, G viruses	Hepatitis, often asymptomatic; cirrhosis, hepatic cancer	**Routine**	Blood, genital secretions, and certain other body fluids	Mucosal or percutaneous exposure to infective body fluids Sexual transmission; Vertical mother to child	B: 2–3 months C: 2 weeks–6 months D: 2–8 weeks	B: all persons who are hepatitis B surface-antigen-positive are infectious C: indefinite D: indefinite		Refer to Canadian Immunization Guide 7th Ed., 2006 for specific information, available at: http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php Contact OH or delegate if HCW has percutaneous, non-intact skin or mucous membrane exposure. Refer to CDC dialysis recommendations available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5005a1.htm
Herpes simplex virus	Encephalitis	**ADULT: Routine PEDS: Contact**						
	Neonatal	**Contact**	Skin or mucosal lesions; possibly all body secretions and excretions	Direct contact	Birth to 6 weeks of age		Duration of symptoms	Contact precautions are also indicated for infants delivered vaginally (or by C-section if membranes have been ruptured more than 4–6 hours) to women with active genital HSV infections, until neonatal HSV infection has been ruled out

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
	Mucocutaneous: disseminated or primary and extensive (gingivostomatitis, eczema herpeticum)	**Contact**	Skin or mucosal lesions Sexual transmission Mother to child at birth	Direct contact	2 days–2 weeks	While lesions present	Until lesions are dry and crusted	
	Recurrent	**Routine**						
Herpes zoster See Varicella zoster								
Histoplasmosis (*Histoplasma capsulatum*)	Pneumonia, lymphadenopathy, fever	**Routine**			3–17 days	Not person to person		Acquired from spores in soil
Hookworm (*Necator americanus, Ancyclostoma duodenale*)	Usually asymptomatic	**Routine**		Percutaneous; fecal/oral	Few weeks to many months	Not person to person		Larvae must hatch in soil to become infectious
Human herpesvirus 6 (HHV-6) See Roseola								
Human immuno-deficiency virus (HIV)	Asymptomatic; multiple clinical presentations	**Routine**	Blood, genital secretions, breast milk and certain other body fluids	Mucosal or percutaneous exposure to infective body fluids Sexual transmission, vertical mother to child	Weeks to years	From onset of infection		Contact OH or delegate immediately if HCW has percutaneous, non-intact skin or mucous membrane exposure
Human meta-pneumovirus	Respiratory tract infection	**Droplet and contact**	Respiratory secretions	Large droplets Direct and indirect contact	3–5 days		Duration of symptoms	May cohort if infected with same virus Patient should not share room with high-risk roommates
Human T-cell leukemia virus, human T-lymphotrophic virus (HTLV-I, HTLV-II)	Usually asymptomatic, tropical spastic, paraperisis, lymphoma	**Routine**	Breast milk, blood and certain other body fluids	Vertical mother to child; mucosal or percutaneous exposure to infective body fluids	Weeks to years	Indefinite		Sexual transmission and transmission by organ transplantation has been reported.

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Infectious mononucleosis See Epstein-Barr virus								
Influenza Seasonal	Respiratory tract infection	**Droplet and contact**	Respiratory secretions	Large droplets, direct and indirect contact	1–3 days	Generally 3–7 days from clinical onset Prolonged shedding may occur in immuno-compromised individuals.	Duration of symptoms usually 5-7 days	If private room is unavailable, consider cohorting patients during outbreaks Patient should not share room with high-risk roommates Consider antiviral for exposed roommates See Guidance: IP&C Measures for HCWs in Acute Care and Long-term Care Settings at: http://www.phac-aspc.gc.ca/nois-sinp/guide/pubs-eng.php For further information for all types of influenza see: http://www.phac-aspc.gc.ca/influenza/index-eng.php
Pandemic Novel influenza viruses	Respiratory tract infection	**Pandemic influenza precautions**[r]	As seasonal	As seasonal	Unknown; possibly 1–7 days	Unknown, possibly up to 7 days Prolonged shedding may occur in immunocompromised individuals	Duration of symptoms	See Canadian Pandemic Plan Annex F, Infection Prevention and Control and Occupational Health and Hygiene guidelines during Pandemic Influenza in Existing and Temporary Healthcare Settings, available at: http://www.phac-aspc.gc.ca/influenza/index-eng.php Refer to PHAC website for specific guidance documents. Available at http://www.phac-aspc.gc.ca/cpip-pclcpi/index-eng.php
Avian	Respiratory tract infection, conjunctivitis	**Droplet and contact**	Excreta of sick birds, possibly human respiratory tract secretions					For current information on Avian influenza, see Human Health Issues Related to Domestic Avian Influenza in Canada, available at: http://www.phac-aspc.gc.ca/publicat/daio-enia/9-eng.php
Lassa fever See Viral hemorrhagic fever								

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Legionella (*Legionella* spp.) Legionnaires' disease	Pneumonia, Legionnaires' disease, Pontiac fever	**Routine**	Inhalation of aerosolized contaminated water		2–10 days;	Not person to person		Acquired from contaminated water sources (inhalation not ingestion)
Leprosy (Hansen's disease) (*Mycobacterium leprae*)	Chronic disease of skin, nerves, nasopharyngeal mucosa	**Routine**	Nasal secretions, skin lesions	Direct contact	Ranges from 1 to many years (20 years) but is usually 3 – 5 years	The infectivity ceases within 24 hours of the first administration of the standard treatment of leprosy		Transmitted between persons only with very prolonged extensive close personal contact Household contacts should be assessed and may be given prophylaxis
Leptospirosis (*Leptospira sp.*)	Fever, jaundice, aseptic meningitis	**Routine**			2–30 days	Direct person to person transmission is rare		Acquired from contact with animals
Lice (pediculosis) Head Body Pubic (crab) (*Pediculus capitas, Pediculus corporis, Pediculus humanus, Phthirus pubis*)	Scalp or body itch, itchy rash	**Routine, plus gloves for direct patient contact only**	Louse	Head and body lice: direct and indirect contact Pubic lice: usually sexual contact	6–10 days	Until effective treatment to kill lice and ova	Until 24 hours after application of appropriate pediculicide; applied as directed	Apply pediculicides as directed on label. If live lice found after therapy, repeat Head lice: wash headgear, combs, pillowcases, towels with hot water or dry clean or seal in plastic bag and store for 10 days. Body lice: as above, for all exposed clothing and bedding
Listeriosis (*Listeria monocytogenes*)	Fever, meningitis Congenital or neonatal infection	**Routine**		Foodborne; Vertical mother to child in utero or at birth	mean 21 days; 3–70 days following a single exposure to an implicated food product			Pregnant women and immunocompromised persons should avoid cheese made with unpasteurized milk, cold cuts and uncooked meat products, including hot dogs Listeria grows well at low temperatures and is able to multiply in refrigerated foods that are contaminated Nosocomial outbreaks reported in newborn nurseries due to contaminated equipment or materials
Lyme disease (*Borrelia burgdorferi)*	Fever, arthritis, rash, meningitis	**Routine**		Tickborne	To initial rash: 3–32 days; mean 7–10 days	Not person to person		
Lymphocytic choriomeningitis virus	Aseptic meningitis	**Routine**	Urine of rodents		6–21 days	Not person to person		Acquired from contact with rodents

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Lympho-granuloma venereum (*C. trachomatis serovars* L1, L2, L3)	Genital ulcers, inguinal adenopathy	**Routine**		Sexually transmitted	Range of 3–30 days for a primary lesion			
Malaria (*Plasmodium sp.)*	Fever	**Routine**	Blood	Mosquito-borne; rarely transplacental from mother to fetus; blood transfusion	Variable; 9–14 days for P. falciparum	Not normally person to person		Can be transmitted via blood transfusion
Marburg virus See Viral haemorrhagic fever								
Measles (Rubeola)	Fever, cough, coryza, conjunctivitis, maculopapular skin rash	**Airborne**	Respiratory secretions	Airborne	7–18 days to onset of fever; rarely as long as 21 days	5 days before onset of rash (1–2 days before onset of initial symptoms) until 4 days after onset of rash (longer in immuno-compromised patients)	4 days after start of rash; duration of symptoms in immuno-compromised patients	Only immune HCWs, caretakers and visitors should enter the room Respirator needed for non-immune persons who must enter Precautions should be taken with neonates born to mothers with measles infection at delivery Immunoprophylaxis is indicated for susceptible contacts Refer to Canadian Immunization Guide 7th Ed., 2006 for specific information available at: http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php
	Susceptible contact	**Airborne**	Respiratory secretions	Airborne		Potentially communicable during last 2 days of incubation period	From 5 days after first exposure through 21 days after last exposure regardless of postexposure prophylaxis	Only immune HCWs, caretakers and visitors should enter the room Respirator needed for non-immune persons who must enter Precautions should be taken with neonates born to mothers with measles infection at delivery Immunoprophylaxis is indicated for susceptible contacts
Melioidosis (*Pseudomonas pseudomallei*)	Pneumonia, fever	**Routine**	Contaminated soil		Variable			Organism in soil in Southeast Asia Person-to-person has not been proven

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Meningococcus (*Neisserria meningitidis*)	Rash (petechial/purpuric) with fever Meningococcemia meningitis, pneumonia	**Droplet**	Respiratory secretions	Large droplet, direct contact	Usually 2–10 days	7 days before the onset of symptoms in the case until 24 hours after onset of effective therapy	Until 24 hours of effective antimicrobial therapy has been received	Close contacts may need chemopropylaxis as per most recent NACI recommendations available at: http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php and http://www.phac-aspc.gc.ca/publicat/cig-gci/p04-meni-eng.php
Methicillin-resistant Staphylococcus aureus (MRSA) See ARO								
Molluscum contagiosum	Umbilicated papules	**Routine**	Contents of papules	Direct contact	2 weeks to 6 months	Unknown		Close direct personal contact needed for transmission
Monkeypox	Resembles smallpox; lymphadenopathy is a more predominant feature	**Contact,[s] droplet and airborne**	Lesions and respiratory secretions	Contact with infected animals; possible airborne transmission from animals to humans			[s]Contact: until all lesions crusted	Transmission in hospital settings is unlikely. See http://www.cdc.gov/ncidod/monkeypox for current recommendations
Mucormycosis (*phycomycosis; zygomycosis)* (Mucor, Zygomycetes)	Skin, wound, rhinocerebral, pulmonary, gastrointestinal, disseminated infection[t]	**Routine**	Fungal spores in dust and soil	Inhalation or ingestion of fungal spores	Unknown	Not person to person	Unknown	Acquired from spores in dust, soil [t]Infections in immunocompromised patients
Mumps	Swelling of salivary glands, orchitis, meningitis	**Droplet**	Saliva	Large droplets, direct contact	Usually 16–18 days; range 14–25 days	Viral excretion highest 2 days before to 5 days after onset or parotitis	Until 5 days after onset of parotitis	Droplet precautions for exposed susceptible patients/HCWs should begin 10 days after first contact and continue through 26 days after last exposure For outbreaks, see: http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/10vol36/36s1/index-eng.php

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Mycobacterium non-TB (atypical)	Lymphadenitis; pneumonia; disseminated disease in immuno-compromised host	**Routine**			Unknown	Not person to person		Acquired from soil, water, animal, reservoirs
Mycobacterium tuberculosis* including *M. tuberculosis* subsp. canetti, *M. bovis, M. bovis* BCG, *M.africanum, M. caprae, M. microti and M. pinnipedii	Confirmed or suspected respiratory (including pleural, laryngeal)	**Airborne**	Respiratory secretions	Airborne	Weeks to years	While organisms is viable in sputum	Until deemed no longer infectious If confirmed, until patient has received 2 weeks of effective therapy, and is improving clinically, and has 3 consecutive sputum smears negative for acid fast bacilli, collected 8–24 hours apart with at least 1 early morning specimen If multi-drug-resistant TB, until sputum culture negative	TB in young children is rarely transmissible; due to lack of cavitary disease and weak cough Assess visiting family members for cough Canadian Tuberculosis Standards, http://www.respiratoryguidelines.ca/tb-standards-2013
	Nonpulmonary: meningitis, bone or joint infection with no drainage	**Routine**						Most patients with nonpulmonary disease alone are noncontagious; it is important to assess for concurrent pulmonary TB
	Nonpulmonary: skin or soft tissue draining lesions	**Routine, Airborne**[v]	Aerosolized wound drainage				While viable micro organisms are in drainage	[v]Airborne precautions if procedures that may aerosolize drainage are being performed

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
	PPD skin test positive with no evidence of current pulmonary disease	**Routine**		Non communicable				
Mycoplasma pneumoniae	Pneumonia	**Droplet**	Respiratory secretions	Large droplets	1–4 weeks	Unknown	Duration of symptoms	
Neisseria gonorrhoeae	Urethritis, cervicitis, pelvic inflammatory disease, arthritis, ophthalmia neonatorum, conjunctivitis	**Routine**		Sexual transmission Mother to child at birth Rarely: direct/indirect contact	2–7 days	May extend for months if untreated		
Neisseria meningitidis See Meningococcus								
Nocardiosis (*Nocardia sp.)*	Fever, pulmonary or CNS infection or disseminated disease	**Routine**			Unknown	Not person to person		Acquired from organisms in dust, soil
Noroviruses (Norwalk-like agents, caliciviruses)	Nausea, vomiting, diarrhea	**Contact**	Feces	Direct and indirect contact (fecal/oral)	Usually 24–48 hours; range of 10–50 hours	Duration of viral shedding; usual 48 hours after diarrhea resolves	48 hours after resolution of illness	During outbreaks, special attention should be made to cleaning; hypchlorite solutions may be required if continued transmission
Orf (poxvirus)	Skin lesions	**Routine**			Generally 3–6 days	Not person to person		Acquired from infected animals.
Parainfluenza virus	Respiratory tract infection	**Droplet and contact**	Respiratory secretions	Large droplets, direct and indirect contact	2–6 days	1-3 weeks	Duration of symptoms	May cohort if infected with same virus Patient should not share room with high-risk roommates

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Parvovirus B-19 Human parvovirus	Erythema infectiosum (fifth disease), aplastic or erythrocytic crisis	**Routine: fifth disease Droplet: aplastic crisis or chronic infection in immuno-compromised patient**	Respiratory secretions	Large droplets, direct contact Vertical mother to fetus	4–21 days to onset of rash	Fifth disease: no longer infectious by the time the rash appears Aplastic crisis: up to 1 week after onset of crisis Immuno-compromised with chronic infection: months to years	Aplastic or erythrocytic crisis: 7 days Chronic infection in immuno-compromised patient: duration of hospitalization	
Pediculosis See lice								
Pertussis (*Bordetella pertussis, Bordetella parapertussis*)	Whooping cough, non-specific respiratory tract infection in infants, adolescents and adults	**Droplet**	Respiratory secretions	Large droplets	Average 9–10 days; range 6–20 days	To 3 weeks after onset of paroxysms if not treated	To 3 weeks after onset of paroxysms if not treated; or until 5 days of appropriate antimicrobial therapy received	Close contacts (household and HCWs) may need chemoprophylaxis and/or immunization If HCWs immunization not up to date, refer to OH and/or delegate Refer to Canadian Immunization Guide 7th Ed., 2006 for specific information available at: http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php
Pinworms See Enterobius								
Plague (*Yersinia pestis)*	Bubonic (lymphadenitis)	**Routine**	Rodents and their fleas		1–7 days			
	Pneumonic (cough, fever, hemoptysis)	**Droplet**	Respiratory secretions	Large droplets	1–4 days	Until 48 hours of appropriate antimicrobial therapy received	Until 48 hours of appropriate antimicrobial therapy received	Close contacts and exposed HCWs may need prophylaxis
Pneumocystis jiroveci (carinii)	Pneumonia in immuno-compromised host	**Routine**		Unknown	Unknown			Ensure roommates are not immunocompromised
Poliomyelitis Infantile paralysis	Fever, aseptic meningitis, flaccid paralysis	**Contact**	Feces, respiratory secretions	Direct and indirect contact	3–35 days	Virus in the throat for approximately 1 week and in feces for 3–6 weeks	Until 6 weeks from onset of symptoms or until feces viral culture negative	Most infectious during the days before and after onset of symptoms Close contacts who are not immune should receive immunoprophylaxis

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Prion disease See Creutzfeldt-Jakob disease								
Psittacosis See Chlamydia psittace								
Q Fever (*Coxiella burnetii*)	Pneumonia, fever	**Routine**	Infected animals, milk	Direct contact with infected animals; raw milk Airborne from aerosolized contaminated dust	14–39 days	Not person to person		Acquired from contact with infected animals or from ingestion of raw milk
Rabies	Acute encephalomyelitis	**Routine**	Saliva	Mucosal or percutaneous exposure to saliva; corneal, tissue and organ transplantation	Usually 3–8 weeks, rarely as short as 9 days or as long as 7 years	Person-to-person transmission is theoretically possible, but rare and not well documented		Acquired from contact with infected animals Postexposure prophylaxis is recommended for percutaneous or mucosal exposure to saliva of rabid animal or patient
Rat bite fever Actinobacillus (formerly *Streptobacillus moniliformis) Spirillum minus*	Fever, arthralgia	**Routine**	Saliva of infected rodents; contaminated milk	Rodent bite, ingestion of contaminated milk	A. moniliformis days 3–10 days, rarely longer; S. minus 1–3 weeks	Not person-to-person		A. moniliformis: rats and other animals, contaminated milk S. minus: rats, mice only
Relapsing fever (Borellia recurrentis, other Borellia species)	Recurrent fevers	**Routine**		Vector-borne		Not person to person		Spread by ticks or lice
Respiratory syncytial virus (RSV)	Respiratory tract infection	**Droplet and contact**	Respiratory secretions	Large droplets, direct and indirect contact	2-8 days	Shortly before and for the duration of active disease	Duration of symptoms	May cohort if infected with same virus Patient should not share room with high-risk roommates
Rhinovirus	Respiratory tract infection, common cold	**Contact and droplet**	Respiratory secretions	Direct and indirect contact, possibly large droplets	2–3 days	Until symptoms cease	Duration of symptoms	May cohort if infected with same virus Patient should not share room with high-risk roommates
Rickettsialpox *(Rickettsia akari)*	Fever, rash	**Routine**		Mite-borne	9–14 days	Not person to person		Transmitted by mouse mites
Ringworm See Tinea								

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Rocky Mountain spotted fever *(Rickettsia rickettsia)*	Fever, petechial rash, encephalitis	**Routine**		Tick-borne	3–14 days	Not transmitted from person to person, except rarely through transfusion		
Roseola infantum (HHV-6)	Rash, fever	**Routine**	Saliva	Direct contact	9-10 days	Unknown		Close direct personnel contact needed for transmission
Rotavirus	Diarrhea	**Contact**	Feces	Direct and indirect contact (fecal/oral)	1–3 days	Duration of viral shedding	Duration of symptoms	
Roundworm See Ascariasis								
Rubella, acquired	Fever, maculopapular rash	**Droplet**	Respiratory secretions	Large droplets, direct contact	14–21 days	For about 1 week before and after onset of rash.	Until 7 days after onset of rash	Only immune HCWs, caretakers and visitors should enter the room Pregnant HCWs must check with Occupational Health prior to caring for a patient with rubella If it is essential for a non-immune person to enter the room, facial protection should be worn Droplet precautions should be maintained for exposed susceptible patients from 7 days after first contact through to 21 days after last contact Administer vaccine to exposed susceptible non-pregnant persons within 3 days of exposure Refer to Canadian Immunization Guide for specific information available at: http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php Exclude susceptible HCWs from duty from day 7 after first exposure to day 21 after last exposure, regardless of postexposure vaccination
Rubella, congenital	Congenital rubella syndrome	**Droplet and contact**	Respiratory secretions, urine	Direct and indirect contact; large droplets		Prolonged shedding in respiratory tract and urine; can be up to one year	Until one year of age, unless nasopharyngeal and urine cultures done after 3 months of age are negative	As per Rubella, acquired

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Rubeola **See Measles**								
Salmonella (including *Salmonella Typhi)*	Diarrhea, enteric fever, typhoid fever, food poisoning	**ADULT: Routine**[w] **PAEDIATRIC: Contact**	Feces	Direct and indirect contact (fecal/oral); foodborne	6–72 hours	Variable	Duration of symptoms	[w]Consider contact precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment Contact precautions apply to children who are incontinent or unable to comply with hygiene
Scabies (*Sarcoptes scabiei)*	Itchy skin rash	**Contact**	Mite	Direct and indirect contact	Without previous exposure, 2–6 weeks; 1–4 days after re-exposure	Until mites and eggs are destroyed by treatment, usually after 1 or occasionally 2 courses of treatment, 1 week apart	Until 24 hours after initiation of appropriate therapy	Apply scabicide as directed on label. Wash clothes and bedding in hot water, dry clean or seal in a plastic bag, and store for 1 week Household contacts should be treated
Scarlet fever **See Group A Streptococcus**								
Schistosomiasis (bilharziasis) (*Schistosoma sp.)*	Diarrhea, fever, itchy rash Hepatospleno-megaly, hematuria	**Routine**				Not person to person		Contact with larvae in contaminated water.
Shigella	Diarrhea	**ADULT: Routine**[x] **PAEDIATRIC: Contact**	Feces	Direct and indirect contact (fecal/oral)	1–3 days	Usually 4 weeks if not treated	Duration of symptoms	[x]Consider contact precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment Contact precautions apply to children who are incontinent or unable to comply with hygiene Treatment with effective antimicrobial shortens period of infectivity

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Severe acute respiratory syndrome (SARS coronavirus)	Malaise, myalgia, headache, fever, respiratory symptoms (cough, increasing shortness of breath), pneumonia, acute respiratory distress syndrome	**Contact and droplet [y] AGMP**	Respiratory secretions, stool	Droplet, direct and indirect contact Aerosols during AGMP	3–10 days	Not yet determined; suggested to be less than 21 days	10 days following resolution of fever if respiratory symptoms have also resolved	[y]AGMP – use Airborne Precautions, May cohort if infected with same virus Patient should not share room with high-risk roommates
Shingles See Herpes zoster								
Smallpox (variola virus) Generalized vaccinia, eczema vaccinatum See Vaccinia for management of vaccinated persons	Fever, vesicular/pustular in appropriate epidemiologic context	**Droplet, contact and airborne**	Skin lesion exudate, oropharyngeal secretions	Airborne, direct and Indirect contact	7–10 days	Onset of mucosal lesions, until all skin lesions have crusted	Until all scabs have crusted and separated (3–4 weeks)	Immunization of HCWs was stopped in 1977 Refer to Canadian Immunization Guide for information regarding vaccine, http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php NACI Statement on Smallpox Vaccination, http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/02vol28/28sup/acs1.html Care preferably should be provided by immune HCWs; non-vaccinated HCWs should not provide care if immune HCWs are available Respirator for all regardless of vaccination status
Sporotrichosis (*Sporothrix schenckii)*	Skin lesions, disseminated	**Routine**			Variable	Rare person to person		Acquired from spores in soil, on vegetation
***Staphylococcus aureus* (if methicillin-resistant, see also ARO)**	Skin (furuncles, impetigo) wound or burn infection; abscess; scalded skin syndrome, osteomyelitis	**MINOR: Routine MAJOR: Contact[z]**	Drainage, pus	Direct and indirect contact	Variable	As long as organism is in the exudates or drainage	Until drainage resolved or contained by dressings	[z]MAJOR: drainage not contained by dressings
	Endometritis	**Routine**						

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
	Food poisoning	**Routine**		Foodborne				
	Pneumonia	**ADULT: Routine PAEDIATRIC: Droplet**	Respiratory secretions	Large droplets, direct contact	Variable		Until 24 hours of appropriate antimicrobial therapy received	
	Toxic shock syndrome	**Routine**						
Streptobacillus moniliformis disease See Rat-bite fever								
Streptococcus pneumoniae	Pneumonia, meningitis and other	**Routine**			Variable			Normal flora
Streptococcus, Group A *(Streptococcus pyogenes)*	Skin (e.g., erysipelas, impetigo), wound or burn infection	**MINOR: Routine MAJOR: Contact**[aa]	Drainage, pus	Direct and indirect contact	1–3 days, rarely longer	As long as organism is in the exudates or drainage	Until 24 hours of appropriate antimicrobial therapy received	[aa]MAJOR: drainage not contained by dressings
	Scarlet fever, pharyngitis, in children	**ADULT: Routine PAEDIATRIC: Contact and droplet**	Respiratory secretions	Large droplets,	2–5 days	10–21 days if not treated	Until 24 hours of appropriate antimicrobial therapy received	
	Group A Streptococcus endometritis (puerperal fever)	**Routine**						
	Group A Streptococcus toxic shock, invasive disease (including necrotizing fasciitis, myositis, meningitis, pneumonia)	**Droplet and contact**	Respiratory secretions, wound drainage	Large droplets, direct or indirect contact			Until 24 hours of appropriate antimicrobial therapy received	Chemoprophylaxis may be indicated for close contacts of patients with invasive disease or toxic shock syndrome For further information see: http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/06vol32/32s2/index-eng.php
Streptococcus, Group B *(Streptococcus agalactiae)*	Group B Streptococcus newborn sepsis, pneumonia, meningitis	**Routine**		Mother to child at birth	Early onset: 1–7 days of age; late onset: 7 days to 3 months of age			Normal flora

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Stronglyoides (*Stronglyoides stercoralis)*	Usually asymptomatic	**Routine**	Larvae in feces		Unknown	Rarely transmitted person to person		Infective larvae in soil May cause disseminated disease in immuno-compromised patient
Syphilis *(Treponema pallidum)*	Genital, skin or mucosal lesions, disseminated disease, neurological or cardiac disease; latent infection	**Routine** **Gloves for direct contact with skin lesions**	Genital secretions, lesion exudates	Direct contact with infectious exudates or lesions Sexual transmission, Intrauterine or intrapartum from mother to child	10–90 days; usually 3 weeks	When moist muco-cutaneous lesions of primary and secondary syphilis are present		
Tapeworm *(Taenia saginata, Taenia solium, Diphyllobothrium latum)*	Usually asymptomatic	**Routine**	Larvae in food	Foodborne	Variable	Not transmissible person to person		Consumption of larvae in raw or undercooked beef or pork or raw fish; larvae develop into adult tapeworms in gastrointestinal tract Individuals with T. solium adult tapeworms may transmit cysticercosis to others
Tapeworm *(Hymenolepsis nana)*	Usually asymptomatic	**Routine**	Ova in rodent or human feces	Direct contact (fecal/oral)	2–4 weeks	While ova in feces		
Tetanus *(Clostridium tetani)*	Tetanus	**Routine**			1 day to several months	Not person to person		Acquired from spores in soil which germinate in wounds, devitalized tissue
Tinea (Dermatophytosis) *(Trichophyton sp., Microsporom sp., Epidermophyton sp., Malassezia furor)*	Ringworm (skin, beard, scalp, groin, perineal region); athletes foot; pityriasis versicolor	**Routine**	Organism in skin or hair	Direct skin-to-skin contact	Variable; 4–14 days	While lesion present		May be acquired from animals, shared combs, brushes, clothing, hats, sheets, shower stalls
Toxic shock syndrome **See S. aureus, Group A Streptococcus**								
Toxocariasis (*Toxocara canis, Toxocara cati)*	Fever, wheeze, rash, eosinophilia	**Routine**	Ova in dog/cat feces		Unknown	Not person to person		Acquired from contact with dogs, cats

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Toxoplasmosis (*Toxoplasma gondii)*	Asymptomatic, fever, lymphadenopathy; retinitis, encephalitis in immuno-compromised host; congenital infection	**Routine**		Intrauterine transmission from mother to foetus; transplantation of stem cells or organs	5–23 days			Acquired by contact with infected felines or soil contaminated by felines, consumption of raw meat, contaminated raw vegetables or contaminated water
Trachoma See Chlamydia trachomatis								
Transmissible spongiform encephalopathy See Creutzfeld-Jacob disease								
Trench fever *(Bartonella quintana)*	Relapsing fevers, rash	**Routine**	Feces of human body lice	Louse-borne	7–30 days	Not person to person in the absence of lice		
Trichinosis *(Trichinella spiralis)*	Fever, rash, diarrhea	**Routine**	Infected meat	Food-borne	5–45 days	Not person to person		Acquired from consumption of infected meat
Trichomoniasis (*Trichomonas vaginalis)*	Vaginitis	**Routine**		Sexually transmitted	4–20 days	Duration of infection		
Trichuriasis (whipworm) *(Trichuris trichiura)*	Abdominal pain, diarrhea	**Routine**			Unknown	Not person to person		Ova must hatch in soil to be infective
Tuberculosis (TB) See Mycobacterium tuberculosis								
Tularemia *(Francisella tularensis)*	Fever, lymphadenopathy, pneumonia	**Routine**			1–14 days	Not person to person		Acquired from contact with infected animals F. tularensis is hazardous to laboratory workers; notify laboratory if diagnosis is suspected
Typhoid/ paratyphoid fever See Salmonella								

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Typhus fever *(Rickettsia typhi)* *Endemic flea-borne typhus*	Fever, rash	**Routine**	Rat fleas	Flea borne	From 1–2 weeks, commonly 12 days	Not transmitted person to person		
Rickettsia prowazekii* *Epidemic louse-borne fever	Fever, rash	**Routine**	Human body louse	Louse borne	1–2 weeks			Person-to-person through close personal contact, not transmitted in absence of louse
Vaccinia	Range of adverse reactions to the smallpox vaccine (e.g., eczema vaccinatum, generalized or progressive vaccinia, other)	**Contact**	Skin exudates	Direct and indirect contact	3–5 days	Until all skin lesions resolved and scabs separated	Until all skin lesions dry and crusted and scabs separated	Vaccinia may be spread by touching a vaccination site before it has healed or by touching bandages or clothing that may have been contaminated with live virus from the smallpox vaccination site. Immunization of HCWs was stopped in 1977. Refer to Canadian Immunization Guide for information regarding vaccine, http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php NACI Statement on Smallpox Vaccination, http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/02vol28/28sup/acs1.html
Vancomycin-resistant enterococci (VRE)	Infection or colonization of any body site	**Contact**	Infected or colonized secretions, excretions	Direct and indirect contact	Variable	Duration of colonization	As directed by ICP	Enterococci persist in the environment; pay special attention to cleaning
Vancomycin-resistant S. aureus (VRSA) Theoretical; to date, not reported	Infection or colonization of any body site	**Contact**	Infected or colonized secretions, excretions	Direct and indirect contact	Variable	Duration of colonization	As directed by ICP	Local public health authorities should be notified immediately

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Varicella zoster virus Varicella (chickenpox)	Fever with vesicular rash	**Airborne and contact**	Skin lesion drainage, respiratory secretions	Airborne, direct and indirect contact	10–21 days	1–2 days before rash and until skin lesions have crusted May be prolonged in immuno-compromised patients	Until all lesions have crusted and dried	HCWs, roommates and caregivers should be immune to chickenpox No additional precautions for pregnant HCWs Respirators for non-immune persons that must enter Susceptible high-risk contacts should receive varicella zoster immunoglobulin as soon as possible, latest within 96 hours of exposure Varicella zoster immunoglobulin may extend the incubation period to 28 days Refer to Canadian Immunization for specific information, available at: http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php
Herpes zoster (shingles), disseminated	Vesicular skin lesions	**Airborne and Contact**	Vesicle fluid, respiratory secretions	Airborne, direct and indirect contact		Until all lesions have crusted and dried	Until all lesions have crusted and dried	HCWs, roommates and caregivers should be immune to chickenpox Respirators for non-immune persons that must enter Susceptible high-risk contacts should receive varicella zoster immunoglobulin as soon as possible, latest within 96 hours of exposure Varicella zoster immunoglobulin may extend the incubation period to 28 days
Herpes zoster, localized Immuno-compromised host	Vesicular skin lesions in dermatomal distribution	**Airborne and contact**	Vesicle fluid	Direct and indirect contact, airborne		Until all lesions have crusted and dried and disseminated infection is ruled out	Until 24 hours after antiviral therapy started; then as for localized zoster in normal host	Localized zoster may disseminate in immunocompromised host if not treated HCWs, roommates and caregivers should be immune to chickenpox Susceptible high-risk contacts should receive varicella zoster immunoglobulin as soon as possible, latest within 96 hours of exposure Varicella zoster immunoglobulin may extend the incubation period to 28 days

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Herpes zoster, localized Normal host	Vesicular skin lesions in dermatomal distribution	**Routine Contact[bb] and airborne**	Vesicle fluid	Direct and indirect contact, possibly airborne		Until all lesions have crusted and dried	Until all lesions have crusted and dried	[bb]Consider contact and airborne for cases of extensive localized zoster that cannot be covered, in situations where there are varicella susceptible patients/HCWs.
Varicella or herpes zoster contact	Susceptible contact	**Airborne**	Respiratory secretions	Airborne	10–21 days	Potentially communicable during last 2 days of incubation period	From 8 days after first contact until 21 days after last contact with rash, regardless of postexposure vaccination (28 days if given varicella zoster immuno-globulin)	Airborne precautions should be taken with neonates born to mothers with varicella onset <5 days before delivery HCWs, roommates and caregivers should be immune to chickenpox
Variola See smallpox								
Vibrio parahaemolyticus enteritis	Diarrhea, food poisoning	**Routine**	Contaminated food, especially seafood	Foodborne	Between 12 and 24 hours; range from 4–30 hours			
Vincent's angina (trench mouth)		**Routine**						
Viral hemorrhagic fevers (Lassa, Ebola, Marburg, Crimean-Congo viruses)	Hemorrhagic fever	**Contact and droplet AGMP[cc]**	Blood and bloody body fluids, respiratory secretions Lassa: urine	Direct and Indirect contact Lassa: Sexual contact	Lassa: 1–3 weeks Ebola: 2–21 days	Unknown, possibly several weeks Lassa virus may be excreted in urine for 3–9 weeks after onset	Until symptoms resolve	Local public health authorities should be notified immediately. [cc] AGMP necessary: use Airborne Precautions
West Nile virus See Arboviruses								
Whipworm See Trichuriasis								
Whooping cough See Pertussis								

Microorganism	Clinical presentation	Precautions	Infective material	Route of transmission	Incubation period	Period of communicability	Duration of precautions	Comments
Yersinia enterocolitica; Y. pseudotuberculosis	Diarrhea, mesenteric adenitis	**ADULT: Routine[dd] PAEDIATRIC: Contact**	Feces	Direct and indirect contact (fecal/oral); foodborne	3–7 days, generally under 10 days	Duration of excretion in stool	Duration of symptoms	[dd]Consider contact precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment Contact precautions apply to children who are incontinent or unable to comply with hygiene
Zoster See Varicella (Herpes zoster)								
Zygomycosis (Phycomycosis) See Mucormycsis								

Appendix G: Checklist for Contact Precautions[10]

Patient Accommodation and Placement	☐ Place patient in a single-patient room if possible with a private toilet (or designated commode chair), designated patient sink and a designated staff hand washing sink. The room door may remain open.
	☐ Consider cohorting patients with confirmed diagnosis of same microorganism and who are suitable roommates in consultation with infection prevention and control professional or designate.
	☐ If a single-patient room is not available and cohorting is not feasible, draw the privacy curtain between beds to minimize opportunities for direct contact with roommate(s). In a shared room, a patient with diarrhea should not share a toilet with another patient.
Personal Protective Equipment (PPE)	☐ **In acute care**, wear gloves when entering the room or designated bedspace. **In long-term care**, wear gloves if direct personal care contact with the patient is required or if direct contact with frequently touched environmental surfaces is anticipated.
	☐ Wear a long-sleeved gown if anticipated that forearms or clothing will be in direct contact with patient or with environmental surfaces or objects in the patient care environment.
Signs, Supplies and Equipment	☐ Post a contact precautions sign in a manner so that it is clearly visible to all prior to entering the room or bedspace.
	☐ Dedicate non-critical patient-care equipment (e.g., patient's blood pressure cuff, thermometer) to the use of patient. Toys, electronic games and personal effects should not be shared among patients.
	☐ Ensure PPE supplies are available and in sufficient quantities outside the patient's room or designated bedspace.
Handling of Waste and Linen	☐ Ensure that a no-touch waste receptacle and linen basket are available where needed and are ready for use.
Patient Leaving Room	☐ Allow patient out of his/her room as required for their care plan. Provide supervision of patient if compliance with precautions is inadequate. **In long-term care**, participation in group activities should not be restricted if wound drainage or diarrhea are contained.
	☐ Ensure that patient performs hand hygiene before leaving room or designated bedspace.
	☐ Provide patient with clean bedclothes and bedding, contain draining wounds with clean dressings, ensure infected areas of the patient's body are covered and body substances contained when transfer or movement within facility is necessary.
	☐ Inform transport and other personnel in receiving area/unit/facility that the patient is on contact precautions.
Patient and Visitor Teaching	☐ Explain to patient and visitors that the patient is on contact precautions and what these precautions entail.
	☐ Instruct patient on how and when to perform hand hygiene.
	☐ Instruct visitors on how and when to perform hand hygiene and put on and take off PPE.
	☐ Keep the number of visitors to a minimum.

NOTE:
Routine practices including hand hygiene recommendations still apply.

[10] Public Health Agency of Canada. (2012). Routine Practices and Additional Precautions Assessment and Educational Tools. Page 53.

Appendix H: Contact Precautions Sign

Source: Provincial Infection Control – Newfoundland Labrador. July, 2014. Image developed by Phil Simms, Eastern Health.

Appendix I: Checklist for Droplet Precautions[11]

Patient Accommodation and Placement	☐ Place patient in a single-patient room preferably with a private toilet (or designated commode chair), designated patient sink and a designated staff hand washing sink. The room door may remain open.
	☐ Consider cohorting patients with confirmed diagnosis of same pathogen and who are suitable roommates, in consultation with infection prevention and control professional or designate.
	☐ If a single-patient room is not available and cohorting is not possible, ensure that patients are physically separated (at least 2 metres apart) from each other and draw the privacy curtain between beds to minimize opportunities for droplet spread.
Personnel Restrictions	☐ Do not enter the room, unless unavoidable, if susceptible to disease/condition (i.e., mumps, rubella) for which the patient is on precautions. If must enter, wear appropriate personal protective equipment (PPE).
Personal Protective Equipment (PPE)	☐ Wear facial protection* within 2 metres of patient unless immune to the specific disease/condition for which the patient is on precautions.
Signs, Supplies and Equipment	☐ Post a droplet precautions sign in a manner so that it is clearly visible to all prior to entering the room or designated bedspace.
	☐ Ensure PPE supplies are available in sufficient quantities outside the patient's room or designated bedspace.
Handling of Waste and Linen	☐ Ensure that a no-touch waste receptacle and linen basket are available where needed and are ready for use.
Patient Leaving Room	☐ Allow the patient out of his/her room as required for their care plan. Provide supervision if compliance with precautions listed in next bullet is inadequate.
	☐ Direct patient to put on a mask** (if tolerated), perform hand hygiene and follow respiratory hygiene when outside room or designated bedspace.
	☐ Inform transport and other personnel in receiving area/unit/facility that the patient is on droplet precautions.
Patient and Visitor Teaching	☐ Explain to patient and visitors that the patient is on droplet precautions and what these precautions entail.
	☐ Teach patient respiratory hygiene and ensure tissues are available near patient.
	☐ Instruct patient on how to put on and take off mask** when required, and how/when to perform hand hygiene. As needed, visitors should be instructed on when and how to perform hand hygiene and put on and take off the necessary PPE.
	☐ For patients with rubella or mumps, inform susceptible visitors that they should not enter the room unless it is absolutely necessary, and if they enter the room they should wear facial protection*. Facial protection* is not needed if the visitor is immune.
	☐ For patients with an acute viral respiratory infection, household members may not need to wear facial protection* (as they may have already been exposed). On a case-by-case basis, other visitors should be instructed in the appropriate use of facial protection* and other precautions.
	☐ For patients with suspected or confirmed *Haemophilus influenzae* type B infection, inform visitors that they need to wear facial protection* only if they will have extensive close contact with susceptible infants.
	☐ Keep the number of visitors to a minimum.

NOTES:
Routine practices including hand hygiene recommendations still apply.
*Facial protection = Masks and eye protection, face shields, or masks with visor attachment.
**The term 'mask' refers to surgical or procedure mask.

[11] Public Health Agency of Canada. (2012). Routine Practices and Additional Precautions Assessment and Educational Tools. Page 54.

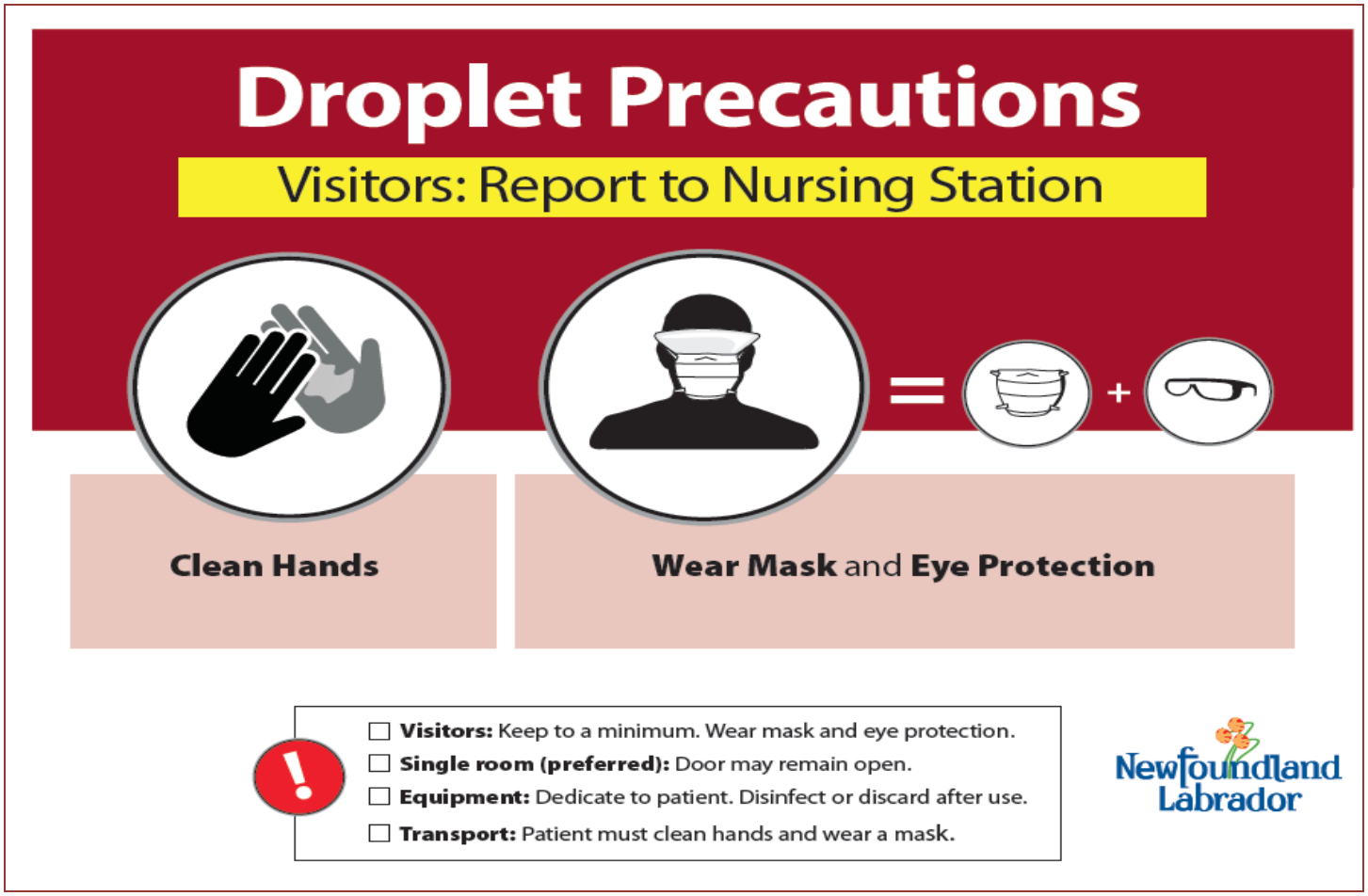
Appendix J: Checklist for Droplet Contact Precautions[12]

Patient Accommodation and Placement	☐ Place patient in a single-patient room with in-room designated toilet (or commode chair) and sink and if possible, a designated staff hand washing sink. The room door may remain open.
	☐ Consider cohorting patients with confirmed diagnosis of same microorganism/pathogen and who are suitable roommates in consultation with infection prevention and control professional or designate.
	☐ If a single-patient room is not available and cohorting is not possible, ensure that patients are physically separated (at least 2 metres apart) from each other and draw the privacy curtain between beds to minimize opportunities for droplet spread and direct contact with roommate(s). In a shared room, a patient with diarrhea should not share a toilet with another patient.
Personal Protective Equipment (PPE)	☐ **In acute care**, wear gloves when entering the room or designated bedspace in shared room. **In long-term care**, wear gloves if direct personal care contact with the patient is required or if direct contact with frequently touched environmental surfaces is anticipated.
	☐ Wear facial protection** within 2 metres of patient.
	☐ Wear a long-sleeved gown if skin or clothing will have direct contact with patient and/or environment.
Signs, Supplies and Equipment	☐ Post contact and droplet precautions sign(s) in a manner so that it is/they are clearly visible to all prior to entering the room or designated bedspace.
	☐ Dedicate non-critical patient-care equipment (e.g., patient's blood pressure cuff, thermometer) to the use of patient. Toys, electronic games and personal effects should not be shared among patients.
Handling of Waste and Linen	☐ Ensure a no-touch waste receptacle and linen basket, are available where needed and are ready for use.
Patient Leaving Room	☐ Allow patient out of his/her room as required for their care plan. Provide supervision of patient if compliance with precautions is inadequate as listed in next bullet.
	☐ Ensure that the patient is wearing a mask† (if tolerated) and explain that he/she needs to follow respiratory hygiene when outside room or designated bedspace.
	☐ Ensure that patient performs hand hygiene before leaving room or designated bedspace.
	☐ Inform transport and other personnel in receiving area/unit/facility that the patient is on contact and droplet precautions.
Patient and Visitor Teaching	☐ Explain to patient and visitors that the patient is on contact and droplet precautions and what these precautions entail.
	☐ Teach patient respiratory hygiene and ensure tissues are available near patient.
	☐ Instruct patient on how to put on and take off mask† when required, and how/when to perform hand hygiene. As needed, visitors should be instructed on when and how to perform hand hygiene and put on and take off the necessary PPE.
	☐ For patients with an acute viral respiratory infection*, household members may not need to wear a facial protection** (as they may have already been exposed). On a case-by-case basis, other visitors should be instructed in the appropriate use of facial protection** and other precautions.
	☐ Keep the number of visitors to a minimum.

NOTES:
Routine practices including hand hygiene recommendations still apply.
*Febrile asthma, bronchiolitis, colds, croup, influenza-like illness, pneumonia, pharyngitis (precautions may vary for adult versus paediatric patients)
**Facial protection = Masks and eye protection, face shields, or masks with visor attachment.
†The term 'mask' refers to surgical or procedure mask.

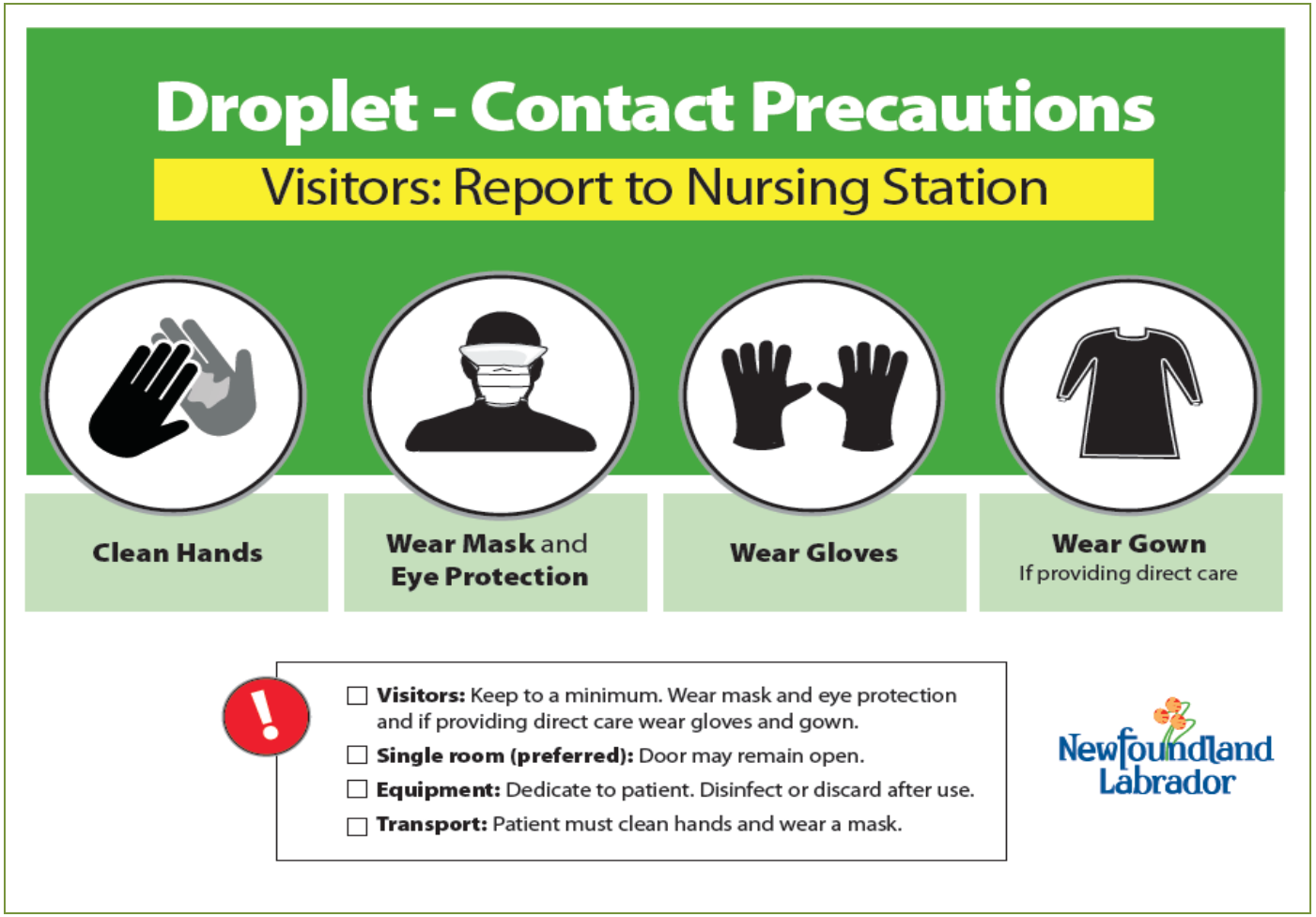
[12] Public Health Agency of Canada. (2012). Routine Practices and Additional Precautions Assessment and Educational Tools. Page 56.

Appendix K: Droplet Precautions Sign



Source: Provincial Infection Control – Newfoundland Labrador. July, 2014. Image developed by Phil Simms, Eastern Health.

Appendix L: Droplet Contact Precautions Sign



Source: Provincial Infection Control – Newfoundland Labrador. July, 2014. Image developed by Phil Simms, Eastern Health.

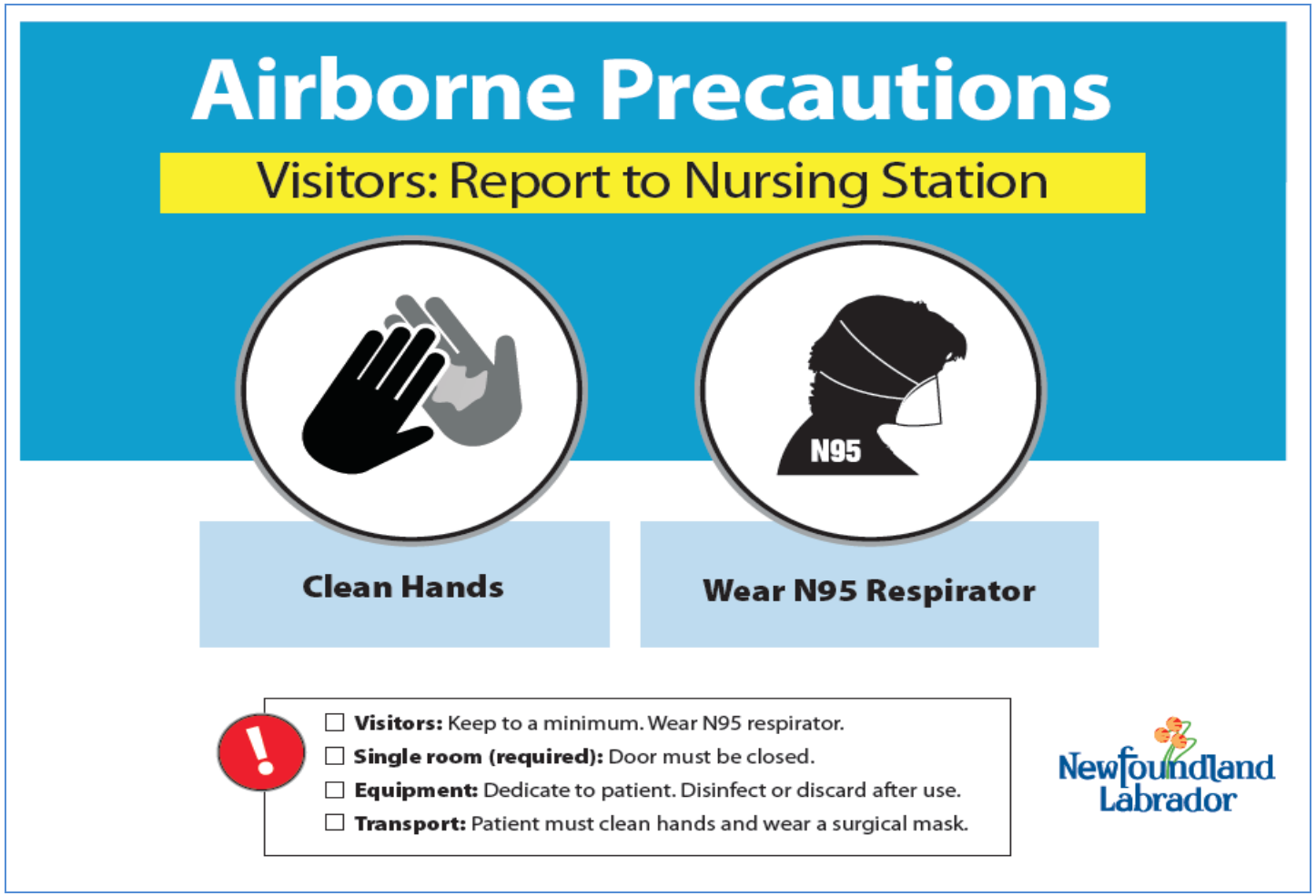
Appendix M: Checklist for Airborne Precautions[13]

Patient Accommodation and Placement	☐	Place patient in an airborne infection isolation room (AIIR) with the door closed. The room should have an in-room toilet, sink and bathing facility for the patient, and designated hand washing sink for healthcare workers (HCWs).
	☐	Patients known to be infected with the same virus (measles or varicella) may share a room. Patients with tuberculosis (TB) may **not** share a room.
	☐	Verify the pressure differential of the AIIR using a visual indicator or portable manometer.
	☐	If an AIIR is not available, have patient put on a mask (if tolerated), place patient in a single room with door closed and arrange for patient transfer to a facility that has an available AIIR as soon as medically stable for transport. If long-term care facility, see note at bottom of page.
Personnel Restrictions	☐	Do not enter the room, unless unavoidable, if susceptible to disease/condition (i.e., varicella, measles) for which the patient is on precautions. If must enter, wear appropriate personal protective equipment (PPE).
Personal Protective Equipment (PPE)	☐	Put on a fit-tested respirator* before entering room of patient with confirmed or suspected TB or other airborne infection to which susceptible. Put on gloves as well if patient has varicella or zoster and HCW is susceptible.
Signs, Supplies and Equipment	☐	Post an airborne precautions sign in a manner so that it is clearly visible to all prior to entering the room. A contact precautions sign is also required for patients with varicella or zoster (disseminated or localized in immunocompromised host).
	☐	Ensure respirators* in use within facility are available in all sizes and sufficient quantities outside the patient's room.
Handling of Waste and Linen	☐	Ensure that no-touch waste receptacle and linen basket are available where needed and are ready for use.
Patient Leaving Room	☐	Restrict patient to room, unless leaving for medically essential procedures. Patient should be accompanied by a HCW whenever outside of the room.
	☐	Direct patient to put on a mask** (if tolerated). Skin lesions should be covered.
	☐	Ensure that the patient performs hand hygiene before leaving room.
	☐	Inform transport and other personnel in receiving area/unit/facility that the patient is on airborne precautions.
Patient, Family and Visitor Teaching	☐	Explain to patient, his/her family and visitors that the patient is on airborne precautions and what these precautions entail.
	☐	Teach patient respiratory hygiene and ensure tissues are available near patient.
	☐	Instruct patient on when and how to put on and take off mask**; when and how to perform hand hygiene; and if applicable, how to cover skin lesions.
	☐	Instruct visitors to wear the same PPE as HCWs unless determined to already have had prolonged exposure to that patient or if immune to the specific disease/condition the patient is on precautions for. Visitors should be instructed on how to perform a seal check if wearing a respirator* before entering room.
	☐	For TB, restrict visitors to immediate family or guardian. For other airborne infections, restrict visitors if susceptible to the specific infection for which the patient is on precautions, unless the patient is terminally ill or the visit is essential (e.g., parent, guardian or primary caretaker).

NOTES:
Routine practices including hand hygiene recommendations still apply.
In long-term care facilities, for patients with varicella, disseminated herpes zoster (shingles), localized herpes zoster (shingles) which cannot be covered, or measles: If all personnel and all other residents in the facility are immune and if non-immune visitors can be excluded, transfer to a facility with an AIIR may not be necessary.
*The most common respirator used in the healthcare setting is a disposable N95 half-face piece filtering respirator (N95 respirator).
**The term 'mask' refers to surgical or procedure mask

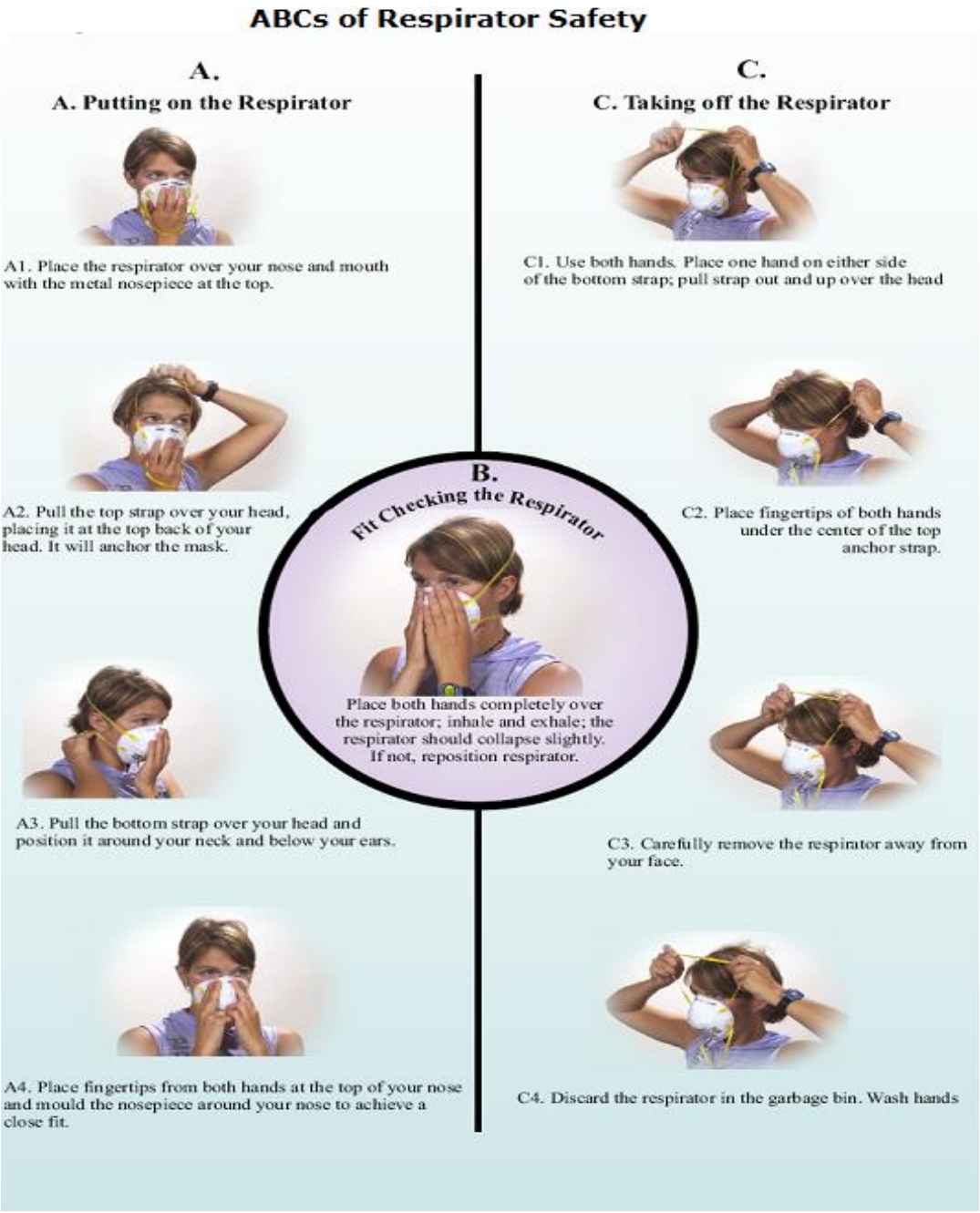
[13] Public Health Agency of Canada. (2012). Routine Practices and Additional Precautions Assessment and Educational Tools. Page 55.

Appendix N: Airborne Precautions Sign



Source: Provincial Infection Control – Newfoundland Labrador. July, 2014. Image developed by Phil Simms, Eastern Health.

Appendix O: ABCs of Respirator Safety



Source: Infection Control Services. City Hospitals, St. John's, NL. 2004. Image: Margaret Yetman

Glossary

Glossary of terms adapted from the PHAC (2012) document with minor changes.[14]

Term	Definition
Aerosol-generating medical procedures (AGMPs)	Aerosol-generating medical procedures are medical procedures that can generate aerosols as a result of artificial manipulation of a person's airway. There are several types of AGMPs associated with a documented increased risk of TB or SARS transmission: Intubation and related procedures (e.g., manual ventilation, open endotracheal suctioning); cardiopulmonary resuscitation; bronchoscopy; sputum induction; nebulized therapy; non-invasive positive pressure ventilation (continuous or bi-level positive airway pressure). There is debate about whether other medical procedures result in the generation of aerosols through cough induction and lead to transmission of infection. However, there is no published literature that documents the transmission of respiratory infections (including TB, SARS and influenza) by these methods. Examples of these procedures include: high-frequency oscillatory ventilation; tracheostomy care; chest physiotherapy; nasopharyngeal swabs, nasopharyngeal aspirates.
Airborne infection isolation room (AIIR)	Formerly, negative pressure isolation room. An AIIR is a single occupancy patient care room used to isolate persons with a suspected or confirmed airborne infectious disease. Environmental factors are controlled in AIIRs to minimize the transmission of infectious agents that are usually transmitted from person to person by droplet nuclei associated with coughing or aerosolization of contaminated fluids. AIIRs should provide negative pressure in the room (so that no air flows out of the room into adjacent areas) and direct exhaust of air from the room to the outside of the building or recirculation of air through a HEPA filter before returning to circulation.
Alcohol-based hand rub (ABHR)	An alcohol-containing preparation (liquid, gel or foam) designed for application to the hands to remove or kill microorganisms. Such preparations contain one or more types of alcohol (e.g., ethanol, isopropanol or n-propanol), and may contain emollients and other active ingredients. ABHR with a concentration above 60% and up to 90% are appropriate for clinical care (see the PHAC IPC guideline Hand *Hygiene Practices in Healthcare Settings*).

[14] Public Health Agency of Canada. (2012). Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Healthcare Settings. P. 131.

Antimicrobial-resistant organisms (AROs)	A microorganism that has developed resistance to the action of one or more antimicrobial agents of special clinical or epidemiologic significance. As such, microorganisms that are considered antimicrobial-resistant can vary over time and place.
Colonization	Presence of microorganisms in or on a host with growth and multiplication but without tissue invasion or cellular injury.
Cohort	Physically separating (e.g., in a separate room or ward) two or more patients exposed to, or infected with, the same microorganism from other patients who have not been exposed to, or infected with, that microorganism.
Emerging respiratory infections	Acute respiratory infections of significant public health importance, including infections caused by either re-emergence of known respiratory pathogens (e.g., SARS) or emergence of as yet unknown pathogens (e.g., novel influenza viruses).
Fit check	A procedure the wearer performs each time a respirator is worn and is performed immediately after putting on the respirator to ensure that there is a good facial seal. Fit check has also been called “seal check” in some documents.
Fit-testing	The use of a qualitative or quantitative method to evaluate the fit of a specific make, model and size of respirator on an individual.
Hand antisepsis	A process for the removal or killing of transient microorganisms on the hands using an antiseptic; also referred to as antimicrobial or antiseptic handwash, antiseptic hand-rubbing or hand antisepsis/disinfection/decontamination.
Hand hygiene	A comprehensive term that refers to handwashing or hand antisepsis and to actions taken to maintain healthy hands and fingernails.
Handwashing	A process for the removal of visible soil/organic material and transient microorganisms from the hands by washing with soap (plain or antiseptic) and water.
Healthcare-associated infection (HAI)	Infections that are transmitted within a healthcare setting (also referred to as nosocomial) during the provision of health care.
Healthcare facilities	Include but are not limited to acute-care hospitals, emergency departments, rehabilitation hospitals, mental health hospitals, and LTC facilities.
Healthcare	The organizational entity that is responsible for establishing and

organizations	maintaining health care services provided by HCWs and other staff in one or more healthcare settings throughout the healthcare continuum.
Healthcare setting	Any location where health care is provided, including emergency care, prehospital care, hospital, LTC, home care, ambulatory care and facilities and locations in the community where care is provided, (e.g., residential or correctional facilities). (Note: Definitions of settings overlap, as some settings provide a variety of care, such as chronic care or ambulatory care provided in acute care, and complex care provided in LTC).
Healthcare workers (HCWs)	Individuals who provide health care or support services, such as nurses, physicians, dentists, nurse practitioners, paramedics and sometimes emergency first responders, allied health professionals, unregulated healthcare providers, clinical instructors and students, volunteers and housekeeping staff. Healthcare workers have varying degrees of responsibility related to the health care they provide, depending on their level of education and their specific job/responsibilities.
Home care	Home care is the delivery of a wide range of health care and support services to patients in a variety of settings for health restoration, health promotion, health maintenance, respite, palliation and to prevent/delay admission to long-term residential care. Home care is delivered where patients reside (e.g., homes, retirement homes, group homes and hospices).
Infection	Situation in which microorganisms are able to multiply within the body and cause a response from the host's immune defences. Infection may or may not lead to clinical disease.
Infection control professional/ practitioner (ICP)	A healthcare professional (e.g., nurse, medical laboratory technologist) with responsibility for functions of the IPC program. This individual, who should have specific IPC training, is referred to as an ICP.
IPAC - Infection prevention and control	Infection prevention and control encompasses the scope of work of the infection control practitioner/professional.
Influenza-like illness	A constellation of symptoms which may be exhibited by individuals prior to the confirmation of influenza.
Long-term care (LTC)	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 terms and include but are not limited to extended, transitional, subacute, chronic, continuing, complex, residential,

	rehabilitation, and convalescence care and nursing homes.
Masks	A barrier to prevent droplets from an infected source from contaminating the skin and mucous membranes of the nose and mouth of the wearer, or to trap droplets expelled by the wearer, depending on the intended use. The mask should be durable enough so that it will function effectively for the duration of the given activity. The term “mask” in this document refers to surgical or procedure masks, not to respirators.
Outbreak	An excess over the expected incidence of disease within a geographic area during a specified time period, synonymous with epidemic.
Organization risk assessment (ORA)	The activity whereby a healthcare organization identifies: a. a hazard b. the likelihood and consequence of exposure to the hazard and c. the likely means of exposure to the hazard d. and the likelihood of exposure in all work areas in a facility/office/practice setting; **and then** e. evaluates available engineering, administrative and PPE controls needed to minimize the risk of the hazard.
Patient	For the purposes of this document, the term “patient” will include those receiving health care, including patients, clients and residents.
Personal protective equipment	Personal protective equipment consists of gowns, gloves, masks, facial protection (i.e., masks and eye protection, face shields or masks with visor attachment) or respirators that can be used by HCWs to provide a barrier that will prevent potential exposure to infectious microorganisms.
Point-of-care	The place where three elements occur together: the patient, the healthcare worker and care or treatment involving contact with the patient or his/her surroundings (within the patient zone) Point-of- care products should be accessible without leaving the patient zone.
Point-of-care risk assessment (PCRA)	A PCRA is an activity whereby HCWs (in any healthcare setting across the continuum of care): 1) Evaluate the likelihood of exposure to an infectious agent a. for a specific interaction b. with a specific patient

	c. in a specific environment (e.g., single room, hallway) d. under available conditions (e.g., no designated handwashing sink) 2) Choose the appropriate actions/PPE needed to minimize the risk of exposure for the specific patient, other patients in the environment, the HCW, other staff, visitors, contractors, etc. (Note: Healthcare workers have varying degrees of responsibility related to a PCRA, depending on the level of care they provide, their level of education and their specific job/responsibilities.)
Respirator	A device that is tested and certified by procedures established by testing and certification agencies recognized by the authority having jurisdiction and is used to protect the user from inhaling a hazardous atmosphere. The most common respirator used in health care is a N95 half-face piece filtering respirator. It is a personal protective device that fits tightly around the nose and mouth of the wearer, and is used to reduce the risk of inhaling hazardous airborne particles and aerosols, including dust particles and infectious agents. An "N 95 respirator" is usually a disposable, (Note: most respirators used for health care purposes are disposable filtering face pieces covering mouth, nose and chin) particulate respirator. Airborne particles are captured from the air on the filter media by interception, inertial impaction, diffusion and electrostatic attraction. The filter is certified to capture at least 95% of particles at a diameter of 0.3 microns; the most penetrating particle size. Particles of smaller and larger sizes are collected with greater efficiency. The "N" indicates a respirator that is not oil-resistant or oil-proof. N95 respirators are certified by the National Institute for Occupational Health and Safety (NIOSH - organization based in the United States) and must be so stamped on each respirator.
Respiratory hygiene/cough etiquette	A combination of measures to be taken by an infected source designed to minimize the transmission of respiratory microorganisms (e.g., influenza).
Terminal cleaning	Terminal cleaning refers to the process for cleaning and disinfecting patient accommodation that is undertaken upon discharge of any patient or on discontinuation of contact precautions. The patient room, cubicle, or bedspace, bed, bedside equipment, environmental surfaces, sinks and bathroom should be thoroughly cleaned before another patient is allowed to occupy the space. The bed linens should be removed before cleaning begins.