ACCREDITATION STANDARDS
Infection Prevention and Control

ROUTINE PRACTICES AND TRANSMISSION-BASED PRECAUTIONS

Routine practices and transmission-based precautions (additional precautions) are the core principles of infection prevention and control strategies.

Routine practices are designed to protect staff from exposure to potential sources of infectious diseases. Routine practices are based on the assumption that all patients are potentially infectious, even when asymptomatic, and that the same standards of practice should be used routinely with all patients to prevent exposure to blood, body fluids, secretions, excretions, mucous membranes, non-intact skin or soiled items. Routine practices are to be used for every patient, every time, regardless of their location, diagnosis or infection/colonization status. Hand hygiene, a key component of routine practices, is the single most important procedure for preventing the transmission of infectious organisms.

Transmission-based precautions are interventions used in addition to routine practices for patients known or suspected to be infected or colonized with specific organisms. Transmission-based precautions such as contact, droplet or airborne precautions, use barriers and environmental controls (e.g. signage, PPE).

Consistent and correct application of routine practices and transmission-based precautions is supported through administrative controls

INDICATORS:

○ Routine practices and transmission-based precautions policies and procedures are in place and outline:
  - risk assessment for signs and symptoms of potential infections
  - selection of appropriate personal protective equipment (PPE)
  - dress code
  - environmental cleaning
  - administrative controls including staff education, staff immunization and occupational health and safety

○ Staff receives initial and ongoing education on the principles and rationale for routine practices and transmission-based precautions including:
• the risks associated with infectious diseases, including acute respiratory illness and gastroenteritis
• assessing the risk of infection transmission
• appropriate use of personal protective equipment (PPE) including selection, application, removal and disposal
• appropriate cleaning and/or disinfection of health care equipment, supplies and surfaces or items in the health-care environment (see Environmental Cleaning standard)

○ Education and training is provided by a person appropriately trained and qualified in infection prevention and control (IPC) (see Appendix D)
○ Records of all IPC education and training provided are maintained
○ An appropriately trained and qualified person* is available to provide ongoing IPC advice and guidance
*This person may be a consultant

Routine practices are used for every patient, every time, regardless of their location, diagnosis or infection/colonization status

INDICATORS:
○ Staff wear appropriate surgical attire in the semi-restricted and restricted areas
○ Staff perform hand hygiene at appropriate moments (e.g. before and after patient contact)
○ All unnecessary and/or extraneous equipment is removed from the operating/procedure room prior to each case
○ Gloves are worn during contact with blood, body fluids, excretions, secretions, tissue, mucous membranes, and non-intact skin of patients
○ Gloves are worn when handling dirty or potentially contaminated items/equipment and environmental surfaces
○ A gown is worn during procedures or patient care that is likely to cause contact with blood or body fluids
○ A gown is worn during procedures or patient care that is likely to generate splashes or sprays of blood, body fluids, secretions or excretions
○ A mask is worn during procedures or patient care that is likely to generate splashes or sprays of blood, body fluids, secretions or excretions
○ A mask is worn when providing care to a coughing patient
○ Eye protection is worn during procedures or patient care that is likely to generate splashes or sprays of blood, body fluids, secretions or excretions
○ Eye protection is worn when providing care to a coughing patient
Personal protective equipment is appropriately donned and doffed

INDICATORS:

- A point-of-care risk assessment is performed before each interaction with the patient and the patient’s environment and appropriate PPE selected (see Appendix B)
- Hand hygiene is performed before donning gloves and after removing gloves
- Gloves are donned immediately before the activity for which they are indicated
- Gloves are removed and disposed of immediately after the activity for which they were used
- Gloves are changed between care for each patient
- Gloves are not washed or re-used
- Gowns are donned immediately before the tasks and properly secured (e.g. tied at top and at waist)
- Gowns are long-sleeved, cuffed and provide full coverage of the front of the body from neck to mid-thigh or below
- Gowns are removed immediately after the activity for which it was used and in a manner that prevents contamination of clothing or skin
- Used gowns are placed into the appropriate receptacle (e.g. waste, dirty linen) immediately after removal (reusing or hanging gowns for later use is not acceptable)
- Hand hygiene is performed after removing gown
- A mask appropriate to the activity (e.g. surgical mask, N95*) is selected and securely covers the nose and mouth
  *In accordance with WorkSafe BC, N95 respirators should be worn for aerosol-generating procedures
- Hand hygiene is performed before mask removal
- Prescription eye glasses are not worn as eye protection
- Eye protection is removed immediately after the task for which it was used and placed into the appropriate receptacle (e.g. waste, reprocessing)

Medical device reprocessing staff selects and wear appropriate personal protective equipment

INDICATORS:

- Gloves selected are appropriate for the chemical being used (refer to safety data sheet (SDS))
- Gloves provide coverage to least to mid-forearm and overlap the gown sleeves
- Gloves are disposed of when protection is compromised (e.g. observable tear, hands wet inside) and at the end of the day
- Gowns are waterproof and long-sleeved with elastic cuffs
- Full face protection is used (e.g. full face shield, eye protection plus surgical mask)
Risk assessments are performed at key time points prior to patient admission

INDICATORS:

○ Patients are contacted and a risk assessment performed at the following time points:
  • over the phone at time of booking of surgery
  • over the phone within 24 hours of their scheduled procedure

○ The risk assessment (see Appendix A) includes:
  • screening for antibiotic resistant organisms (AROs)
  • screening for illness (e.g. cough, fever, vomiting, diarrhea, chickenpox (pediatrics), conjunctivitis (ophthalmology))
  • screening for skin infections, lesions
  • confirming surgery/procedure preparation activities (e.g. preoperative shower, antibiotics)

○ The risk assessment is documented in the patient’s medical record

○ The medical director is notified of any positive responses following risk assessment screening to determine if the patient is suitable for the non-hospital setting

○ The surgeon is notified of any positive responses following risk assessment screening to determine treatment considerations (see Appendix A)

○ The anesthesiologist is notified of any positive responses following risk assessment screening to determine patient suitability for surgery

○ Surgery is cancelled and/or rescheduled if the patient has signs and symptoms of a potentially infectious illness

Risk assessments are performed on patient arrival to the facility

INDICATORS:

○ A risk assessment is performed upon patient arrival

○ The risk assessment (see Appendix A) includes:
  • screening for antibiotic resistant organisms (AROs)
  • screening for illness (e.g. cough, fever, vomiting, diarrhea, chickenpox (pediatrics), conjunctivitis (ophthalmology))
  • screening for skin disorders, rashes, infections, lesions
  • confirming surgery/procedure preparation activities (e.g. preoperative shower, antibiotics)

○ The risk assessment is documented in the patient’s medical record

○ Patients with any positive responses following risk assessment screening remain in the unrestricted area (e.g. waiting room, office) where they are clinically evaluated to determine suitability for admission (entry into semi-restricted and restricted areas)

○ The surgeon is notified of any positive responses following risk assessment screening to determine patient suitability for surgery
The anesthesiologist is notified of any positive responses following risk assessment screening to determine patient suitability for surgery.

Patients are asked to perform hand hygiene.

Transmission-based precautions are initiated as soon as symptoms suggestive of a transmissible infection are noted.

Transmission-based precautions (contact precautions) are implemented for patients known to have or considered high risk of being colonized or infected with antibiotic-resistant organisms (AROs).

Transmission-based precautions (droplet and contact precautions) are implemented for patients with colds, influenza and respiratory infections of unknown etiology.

Transmission-based precautions (airborne precautions) are implemented for patients known or suspected to have varicella virus (chickenpox virus) or measles virus.

Skin lesions are covered with a leak-proof dressing prior to entry into the semi-restricted areas.

Surgery is cancelled and/or rescheduled if the patient has signs and symptoms of a potentially infectious illness.

Appendix A: Sample questions and treatment considerations

Sample questions

Screening for antibiotic-resistant organisms:

- Have you ever been diagnosed (infection or colonization) with an antibiotic-resistant organism (ARO) such as MRSA or VRE?
  - If yes, what location on the body did the positive laboratory result come from?
- Has anyone in your household ever been diagnosed (infection or colonization) with an ARO such as MRSA or VRE?
- Have you received health care in a facility outside of Canada in the last 12 months?
- Have you been admitted to, or spent more than 12 continuous hours as a patient in, any health-care facility in the last 12 months?

Screening for Creutzfeldt-Jacob Disease (CJD) or other prion disease:

- Have you a history of CJD or other prion disease in your facility?
  - If yes, please specify.
- Have you ever received growth hormone or gonadotrophin treatment?
  - If yes, was the hormone derived from human pituitary glands, what was the year of treatment and what country the treatment was received in?
- Have you ever had surgery on your brain or spinal cord?
Screening for illness:
- Have you experienced any of the following symptoms in the last 48 hours (e.g. fever, rash, cough, nausea, vomiting, diarrhea)?

Screening for skin infections, lesions:
- Do you have a skin infection, any skin lesions or open wounds?

Surgery/procedure preparation activities (within 24 hours of procedure):
- Has the patient obtained the appropriate skin preparation for their preoperative surgical shower(s)?
- Has the patient taken the prescribed preoperative antibiotic(s)?

Surgery/procedure preparation activities (during admission):
- Did the patient complete their preoperative surgical shower(s)?
- Did the patient take the prescribed preoperative antibiotic(s) at the required time(s)??

**Treatment considerations**

**Patient infected or colonized with an ARO:**
- Does the infection substantially increase the risk of post-operative surgical site infection?
- Can the active infection area be confined and contained?
- Should the infection be treated with preoperative antibiotics or should decolonization be considered prior to surgery?
- Should the preoperative antibiotic choice be reconsidered?
- Should the surgery/procedure be cancelled and/or rescheduled?

**Patient has a skin infection:**
- Does the infection substantially increase the risk of post-operative surgical site infection?
- Can the active infection area be confined and contained?
- Should the infection be treated with preoperative antibiotics or should decolonization be considered?
- Should the preoperative antibiotic choice be reconsidered?
- Should the surgery/procedure be cancelled and/or rescheduled?

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**Appendix B: Risk assessment**

A point-of-care risk assessment (PoCRA) is an evaluation of the IPC risk factors related to the interaction between the health-care provider, the patient and the health-care environment. A PoCRA is performed before each interaction with the patient or their environment to determine which interventions are required to prevent transmission of microorganisms. A PoCRA is based on the health-care providers’
judgement about the clinical situation and the environment. Control measures, including transmission-based precautions and PPE selections, are based on the evaluation of the risk factors identified. For example:

A. Exposure to blood, body fluids, secretions, excretions or non-intact skin
   - Hand exposed: **wear gloves**
   - Clothing or Forearms exposed: **wear a gown**
   - Mucous membranes of the eyes, nose, mouth exposed: **wear a mask and eye protection**

B. Exposure to contaminated equipment or surfaces
   - Hand exposed: **wear gloves**
   - Clothing or forearms possibly exposed: **possibly wear a gown**

### Appendix C: Antibiotic-resistant organisms (AROs)

Antibiotic-resistant organisms (AROs) are a significant cause of infections in Canadian hospitals and their rate of incidence has increased significantly over the years.

There are a number of factors which place people at risk for colonization and/or infection with AROs including:

- increased age
- previous or recurrent hospitalizations
- invasive procedures
- presence of invasive indwelling devices (e.g. urinary catheter, endotracheal tube)
- recurrent antibiotic use
- presence of a surgical wound, decubitus ulcer or other chronic wound
- contact with, or proximity to, a person colonized or infected with an ARO who had draining skin lesions or wound not covered by dressing
- chronic medical conditions (e.g. diabetes)

More recently, community-acquired ARO strains have arisen. In Canada, community acquired methicillin-resistant *Staphylococcus aureus* (CA-MRSA) is most prevalent in the western provinces but is a growing problem throughout the country. This increase in CA-MRSA has implications for facilities that are not planning on performing the admission screening intervention or who only screen patients with Hospital Acquired MRSA (HA-MRSA).

*Safer Healthcare Now!* provides a step-by-step guide to assist Canadian health-care facilities implement strategies that will control, reduce and prevent AROs using five infection prevention and control interventions:

1. Routine practices, including an aggressive hand hygiene program
2. A systematic program for cleaning and decontamination of the environment and equipment
3. Use of contact precautions for any patient that is infected or colonized with an ARO
4. Use of selected AROs screening cultures
5. ARO surveillance

In developing ARO screening protocols, it is recommended that facilities follow the Canadian Patient Safety Institute Antibiotic Resistant Organisms: MRSA Getting Started Kit (October 2008):

- Antibiotic Resistant Organisms: MRSA How-to Guide
- Infection Prevention and Control (IPAC): Getting Started Kit

**Appendix D: Canadian infection prevention and control courses**

Infection prevention and control professionals (IPC professionals) are responsible for keeping abreast of all current IPC standards and practices, ensuring these standards and practices are implemented and maintained within their non-hospital facility and liaising with various authorities (e.g. Ministry of Health, Public Health, the College).

Infection Prevention and Control Canada (IPAC Canada) sponsored or endorsed courses*:

- IPAC Canada’s Online Novice Infection Prevention and Control Course
- Centennial College Online Infection Control
- Queen’s University Online Basic Infection Control Course
- University of British Columbia Infection Prevention and Control Certificate

Certification in Infection Control (CIC) is also available by passing an examination set by the Certification Board of Infection Control (CBIC). IPAC Canada supports this certification.

* The information contained in this appendix is intended as a reference only. Visit the Infection Prevention and Control Canada (IPAC Canada) website for the most up-to-date list of IPAC Canada-sponsored and endorsed courses.
Definitions

**acute respiratory infection (ARI)**

Any new onset acute respiratory infection that could potentially be spread by the droplet route (either upper or lower respiratory tract), which presents with symptoms of a fever greater than 38°C and a new or worsening cough or shortness of breath (previously known as febrile respiratory illness, or FRI). It should be noted that elderly people and people who are immunocompromised may not have a febrile response to a respiratory infection.

**additional precautions (AP)**

Precautions (i.e. contact precautions, droplet precautions and airborne precautions) that are necessary in addition to routine practices for certain pathogens or clinical presentations. These precautions are based on the method of transmission (e.g. contact, droplet, airborne). Also known as transmission-based precautions.

**aerosol-generating medical procedures (AGMPS)**

Procedures that stimulate coughing and promote generation of aerosols; examples include intubation and related procedures, manual ventilation, open endotracheal suctioning, CPR, bronchoscopy, sputum induction, surgery, autopsy, and non-invasive positive pressure ventilation (CPAP, BiPAP), high concentration oxygen therapy (50% or higher). For diagnostic (but not therapeutic) bronchoscopy or sputum induction, use an N95 respirator, due to risk from undiagnosed TB.

**airborne precautions**

Used in addition to routine practices for clients/patients/residents known or suspected of having an illness transmitted by the airborne route (i.e. by small droplet nuclei that remain suspended in the air and may be inhaled by others). A fit-tested, seal-checked N95 respirator is worn by staff when entering the patient’s room, transporting or caring for a patient on airborne precautions.

**antibiotic-resistant organism (ARO)**

A microorganism that has developed resistance to the action of several antimicrobial agents and that is of special clinical or epidemiological significance.

**barriers**

Equipment or objects used to prevent exposure of skin, mucous membranes or clothing of staff to splashes or sprays of potentially infectious materials.

**colonization**

The presence and growth of a microorganism in or on a body with growth and multiplication but without tissue invasion or cellular injury or symptoms.

**contact precautions**

Used in addition to routine practices to reduce the risk of transmitting infectious agents via contact with an infectious person. Gloves are worn on entering the patient’s bed space and a gown is worn if skin or clothing will come in contact with the patient or the patient’s environment.
contamination    The presence of an infectious agent on hands or on a surface, such as clothing, gowns, gloves, bedding, toys, surgical instruments, care equipment, dressings or other inanimate objects.

droplet precautions    Used in addition to routine practices for clients/patients/residents known or suspected of having an infection that can be transmitted by large infectious droplets. A mask and eye protection is worn by any individual within two meters of a patient on droplet precautions.

eye protection    A device that covers the eyes and is used by health-care providers to protect the eyes when it is anticipated that a procedure or care activity is likely to generate splashes or sprays of blood, body fluids, secretions or excretions, or within two metres of a coughing client/patient/resident. Eye protection includes safety glasses, safety goggles, face shields and visors.

facial protection    Personal protective equipment that protect the mucous membranes of the eyes, nose and mouth from splashes or sprays of blood, body fluids, secretions or excretions. Facial protection may include a mask or respirator in conjunction with eye protection, or a face shield that covers eyes, nose and mouth.

infection    The entry and multiplication of an infectious agent in the tissues of the host. Asymptomatic or subclinical infection is an infectious process running a course similar to that of clinical disease but below the threshold of clinical symptoms. Symptomatic or clinical infection is one resulting in clinical signs and symptoms (disease).

infection prevention and control (IPAC)    Evidence-based practices and procedures that, when applied consistently in health-care settings, can prevent or reduce the risk of transmission of microorganisms to health-care providers, other clients/patients/residents and visitors.

infection prevention and control professional(s) (IPCs):    Trained individual(s) responsible for a health-care setting’s IPAC activities.

infectious agent    A microorganism (i.e. a bacterium, fungus, parasite, virus or prion) which is capable of invading body tissues and multiplying.

mask    A device that covers the nose and mouth, is secured in the back and is used by health-care providers to protect the mucous membranes of the nose and mouth.
methicillin-resistant Staphylococcus aureus (MRSA) - A strain of *Staphylococcus aureus* that has a minimal inhibitory concentration (MIC) to oxacillin of ≥ 4 mcg/ml and contains the mecA gene coding for penicillin-binding protein 2a (PBP 2a). MRSA is resistant to all of the beta-lactam classes of antibiotics, such as penicillins, penicillinase-resistant penicillins (e.g. cloxacillin) and cephalosporins.

mode of transmission - The method by which infectious agents spread from one person to another (e.g. contact, droplet or airborne routes).

N95 respirator - A personal protective device that is worn on the face and covers the nose and mouth to reduce the wearer’s risk of inhaling airborne particles. A NIOSH-certified N95 respirator filters particles one micron in size, has 95% filter efficiency and provides a tight facial seal with less than 10% leak.

personal protective equipment (PPE) - Clothing or equipment worn for protection against hazards.

risk assessment - An evaluation of the interaction of the health-care provider, the client/patient/resident and the client/patient/resident environment to assess and analyze the potential for exposure to infectious disease.

routine practices (RP) - The system of infection prevention and control practices recommended by the Public Health Agency of Canada to be used with all clients/patients/residents during all care to prevent and control transmission of microorganisms in all health-care settings.

transmission-based precautions - See “additional precautions.”

vancomycin-resistant enterococci (VRE) - Strains of *Enterococcus faecium* or *Enterococcus faecalis* that have a minimal inhibitory concentration (MIC) to vancomycin of ≥ 32 mcg/ml and/or contain the resistance genes vanA or vanB.

References


Department of Health (UK); Advisory Committee on Dangerous Pathogens’ Transmissible Spongiform Encephalopathy (ACDP TSE) Subgroup. Minimise transmission risk of CJD and vCJD in healthcare settings: transmissible spongiform encephalopathy agents: safe working and the prevention of infection: Annex J; assessment to be carried out before surgery and or endoscopy to identify patients with, or at
