

INFECTION PREVENTION AND CONTROL PRACTICES TO REDUCE THE RISK OF INFECTION

A Resource for Designated Officers



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The logo for York Region, featuring a stylized white star or sunburst icon above the text "York Region" in a white serif font. The logo is set against a dark blue background with a purple and blue gradient.

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Introduction

Following recommended infection prevention and control (IPAC) practices helps stop the spread of microorganisms. Emergency service workers are responsible for keeping clients, coworkers and themselves safe by following established organizational IPAC policies and procedures.

In this document, you will find information on:

Immunization

Routine Practices

Additional Precautions

Recommended Vaccines for Emergency Services Workers¹

The following table lists vaccines for emergency services workers and describes for whom and under what circumstances they should be given.

Table 1: Recommended Emergency Service Workers and Adult Immunizations

Vaccine	Recommendations
Tetanus, Diphtheria, Pertussis (Td, Tdap)	<ul style="list-style-type: none">• Complete a catch-up primary series for previously unimmunized adults• A Td booster dose every 10 years• One dose of acellular pertussis-containing vaccine (ie Tdap) in adulthood
Pneumococcal	One dose for adults 65 years of age and older
Influenza	Annually each Fall
COVID-19	Annually each Fall plus an additional dose in Spring for eligible high-risk individuals
RSV	One dose for adults 75 years of age and older as well as eligible high risk individuals aged 60-74
Hepatitis B	Immunization with hepatitis B vaccine (3 doses over a 6-month period for adults), followed by serologic testing to assess vaccine response within 1 to 6 months of completion of the vaccine series.

Measles, Mumps, Rubella	Two doses for adults born after 1970 (Two doses for healthcare workers of any age)
Meningococcal	Healthy adults born in or after 1997 of age should receive meningococcal vaccine if it was not received in adolescence
Varicella (Chicken pox)	<ul style="list-style-type: none"> • Susceptible adults up to and including 49 years of age - 2 doses; if only one dose was previously received, a second dose should be provided • Known seronegative adults 50 years of age and older - 2 doses

¹ Health Canada. Canadian Immunization Guide, Seventh Edition. Canadian Medical Association, 2026. Available online [Canadian Immunization Guide - Canada.ca](https://www.canada.ca/en/health-canada/services/immunization/canadian-immunization-guide)

Routine Practices

Routine practices are the foundational, minimum standard of practice to prevent the spread of microorganisms from blood, body fluids, secretions and non-intact skin. Routine practices should be used with all clients during all interactions in all health care settings. **Remember: all individuals should be considered infectious.**

Routine Practices consist of:



Risk Assessment

A risk assessment is a process used to identify risks and reduce potential exposure to infectious agents and other health and safety hazards. It may change as new information becomes available. **A risk assessment must be completed before every interaction with a client and/or the client's environment.**

When performing a risk assessment, ask yourself about the:

1. Task

- a) What information was provided by dispatch?
- b) What task will I be performing?
- c) Will the environment be contaminated with blood or body fluids?

2. Status of the Client

- a) Cooperative with no visible symptoms
- b) Cooperative with visible symptoms (e.g., coughing, vomiting, incontinent)
- c) Uncooperative, regardless of symptoms

3. Environmental and Administrative Controls in Place

- a) Availability and proper use of personal protective equipment (PPE)
- b) Training and competency of personnel
- c) Immunization status
- d) Proper placement and disposal of sharps
- e) Cleaning and disinfection practices
- f) IPAC and Occupational Health and Safety Policies and Procedures

HAND HYGIENE

Hand hygiene is the most important and effective way to stop microorganisms from spreading and causing infections. It is the removal of visible soil and eliminating or killing microorganisms from the hands. You can either wash your hands with soap and running water or use a 70-90% alcohol-based hand rub (ABHR).

The 4 Moments for Hand Hygiene in All Health Care Settings:

1. BEFORE initial client or client environment contact

Examples: Shaking hands, taking pulse or blood pressure

2. BEFORE an aseptic procedure

Examples: Starting intravenous access, aspirating secretions, administering injections, airway management, wound care and dressing changes

3. AFTER body fluid exposure risk

Examples: Handling or disposing of bloody dressing, bandages, or gauze, cleaning urine/feces/vomit, accidental contact with body fluids during struggle with an uncooperative client

4. AFTER client or client environment contact

Examples: Assisting with mobility, after taking vital signs

Alcohol-Based Hand Rub

Alcohol-based hand rub (ABHR) is commonly referred to as hand sanitizer. When used correctly, ABHR is the best option for cleaning hands when they are **not** visibly dirty.

If soap and running water are not available and hands are visibly soiled with blood or body fluids, use hand wipes or moist towelettes to remove the visible dirt first. Apply ABHR after, otherwise it will not be effective on visibly dirty hands.

ABHR must:

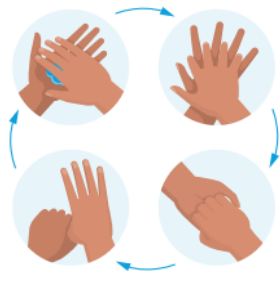
- Be conveniently located and easily accessible
- Contain 70-90% alcohol
- Have a Natural Product Number (NPN)
- Not be used past the expiry date

HOW TO USE HAND SANITIZER

1 Apply enough to cover both hands



2 Rub hands and around all fingers



3 Rub hands until dry (minimum 15 seconds)



Important Tips:

- To ensure proper hand hygiene, remove hand and wrist jewellery
- Use hand sanitizer if hands are not visibly dirty
- Use an alcohol-based hand sanitizer that has 70-90% alcohol with a Natural Product Number (NPN)
- Do not apply hand sanitizer near an open flame

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Hand Washing

Hand washing with soap and running water is recommended when hands are visibly dirty. Liquid soap should be used from single-use pump bottles and thrown away once they're empty. Dispensers should never be refilled or "topped up".



Other Key Points about Hand Hygiene:

- Pay special attention to wrists, fingertips, under fingernails, between fingers, the backs of hands and the base of the thumbs
- Keep nails short and clean
- Remove hand and arm jewelry before performing hand hygiene
- Do not wear artificial nails
- Be aware that crevices in jewelry and artificial nails can harbor microorganisms
- Best practice is to keep natural nails clean, short, and free of polish
- Keep hands healthy – apply moisturizer as needed to prevent cracking, chapped or dry skin
- Refer to the [Best Practice Manual: Hand Hygiene \(Public Health Ontario\)](#) for additional guidance

PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) is worn to prevent exposure by creating a barrier between microorganisms and your eyes, nose, mouth, lungs, skin and clothing. The type of PPE you wear depends on the situation and the level of risk, which helps decide what is needed to prevent the spread of infection.

PPE should be put on just before you have contact with the client. As soon as the task is finished, PPE should be removed immediately and disposed of properly (e.g., after placing a client into the back of the ambulance or before sitting in the driver's seat).

Gloves

- Gloves must be worn when there is a chance that hands may come into contact with mucous membranes, broken skin, tissue, blood, body fluids, secretions, excretions, or any equipment or surfaces contaminated by these substances
- Gloves are **task-specific** and **single-use**

Other Key Points about Gloves

- Wearing gloves does NOT replace hand hygiene
- Extra pairs of gloves should always be available in different sizes
- When choosing gloves, consider dexterity, durability, and fit for the task being performed
- When there is a risk of coming into contact with a lot of blood, gloves should fit tightly around the wrist so blood cannot leak into the hands at the cuff
- For multiple trauma victims or multiple clients, gloves must be changed between each client
- Gloves should be removed immediately after completing a task and never worn when driving a vehicle

Gowns

Gowns protect the skin and clothing or uniform from contamination. They should be worn when there is a chance that clothing or uncovered skin may come into contact with body fluids.

- The type of gown selected is based on:
 1. Nature of interaction
 2. Degree of contact with infectious material
 3. Potential for blood and body fluid penetration
- Use water-resistant gowns if significant soaking is anticipated

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- Gowns should be cuffed, long-sleeved, and provide full coverage of the front of the body, from the neck to mid-thigh or lower
- Do not re-use gowns between clients

Masks

- Masks protect the mucous membranes of the nose and mouth (e.g., surgical/procedural masks with ear loops or ties)
- Masks must meet ASTM F2100 performance standards. The level selected must match the point-of-care risk assessment (e.g., Level 1 for basic protection during low-risk, routine activities)
- Remove the mask immediately after completing the task, or sooner if it becomes soiled, wet or damaged. Discard it into an appropriate waste receptacle

Respirators

- N95 respirators protect the respiratory tract from airborne infectious pathogens
- A respiratory protection program is required for staff who will be required to wear an N95 respirator. The program must include:
 - A health assessment
 - N95 Respirator fit-testing
 - Training – staff must be educated regarding the proper way to perform a seal-check
- Mask fit-testing checks how well a specific respirator (brand, model and size) fits an individual, using either a qualitative or quantitative method. It must be done regularly, at least every two years, and anytime the respirator type changes or there is a change in the wearer's physical condition that could affect the fit
- Seal-checking is a procedure that the wearer must perform each time an N95 respirator is worn to ensure the respirator fits the wearer's face correctly to provide adequate respiratory protection

Goggles/Face Shields

- Goggles or face shields should be used whenever there is potential for splashes or sprays of the eyes
- Prescription eyeglasses and/or sunglasses are not acceptable for eye protection
- Eye protection may be disposable, or reusable if cleaned and disinfected and stored appropriately prior to re-use

Proper Procedures for Putting on and Taking off PPE

Put On PPE (donning) in the Following Order	Remove PPE (doffing) in the Following Order*
1. Hand hygiene	1. Gloves
2. Gown	2. Gown
3. Mask	3. Hand hygiene
4. Goggles/Face Shields	4. Goggles/Face Shields
5. Gloves	5. Mask
	6. Hand hygiene

*Use caution when removing and disposing PPE to minimize the risk of self-contamination. If you think your hands may have become contaminated at any point during PPE removal, perform hand hygiene immediately.

ENVIRONMENTAL CONTROLS

The physical environment of a setting can contain many microorganisms that may cause infections in people who are more vulnerable. Maintaining a clean and safe environment is an essential component of IPAC and is integral to the safety of clients and staff.

Routine Environmental Cleaning

Routine environmental cleaning and disinfection must be performed based on risk of exposure during emergency response activities. When determining the appropriate frequency of cleaning and disinfection, consider:

- High-touch surfaces and items require more frequent cleaning and disinfection (e.g., ambulance stretchers, radios, vehicle door handles, grab bars)
- Surfaces and items near vulnerable client populations require more frequent cleaning and disinfection (e.g., client areas in ambulances, holding cells, interview rooms)
- Heavily contaminated surfaces, items and equipment require more frequent cleaning and disinfection (i.e., visible blood, body fluids, vomit, feces)

Cleaning means removing dirt and microorganisms like dust, soil, and organic material (such as blood) from a surface. This is done using water, cleaning products and physical wiping.

Cleaning must always be done before disinfecting. Cleaning products must be used according to the manufacturer's instructions

Disinfection is a process to kill microorganisms on surfaces and objects. Disinfectants should have a Drug Identification Number (DIN) on the label, except for chlorine bleach.

- Use a low-level or "hospital-grade" disinfectant for surfaces and equipment that only touch intact skin or do not directly touch clients

- Examples of low-level or “hospital-grade” disinfectants are sodium hypochlorite (bleach) at 1000 ppm, 3% hydrogen peroxide, 0.5% improved hydrogen peroxide, quaternary ammonium compounds, iodophors and phenolics
- Use a high-level disinfectant/hypochlorite (5.25%) solution for blood spills: 1:10 solution or 5000 ppm with a 10-minute contact time
- It is important, prior to use, to ensure the chosen disinfectant is compatible with the surface to be disinfected to avoid corrosion, surface breakdown, etc.
- The appropriate contact time depends on the type and concentration of disinfectant – always follow the manufacturer’s recommendations

Cleaning Blood and Body Fluid Spills

1. Identify what PPE should be worn and know the location of the equipment and supplies required
 - Wear gloves during the cleaning and decontaminating process
 - If the possibility of splashing exists, wear a gown, mask and eye protection
 - Change PPE if torn or soiled
2. Determine what cleaners and disinfectants will be used
3. Confine and contain the spill and clean the area of organic matter (e.g., blood, vomit). Surfaces must be cleared of visible organic material before applying a disinfectant, as the presence of blood or other organic matter can significantly reduce the effectiveness of disinfectants
 - Wearing PPE, wipe up the spill using either disposable towels or a product designed for this purpose
 - Discard the towels into a plastic-lined regular waste receptacle, unless the soiled materials are so wet that blood can be squeezed out of them, in which case they must be placed in biomedical waste (i.e., yellow bag)
4. After the area has been cleaned, disinfect the entire area and allow it to stand for the time recommended by the manufacturer (i.e., contact time)
5. After the appropriate contact time has lapsed, wipe the area again using disposable towels and discard them into regular waste. Avoid splashing or aerosol generation when cleaning up
6. Remove PPE in the correct sequence and perform hand hygiene

*Note: If the spill is on carpet/fabric, follow the above steps then arrange for the carpet/fabric to be cleaned with an industrial carpet cleaner as soon as possible or removed and discarded.

Cleaning, Disinfecting and Sterilizing Equipment/Devices

- Follow the Spaulding Classification to determine the required level of reprocessing based on the intended use of the equipment

- Non-critical equipment (touches only intact skin [but not mucous membranes] or does not directly touch the client) – cleaning and low-level disinfection
 - Semi-critical equipment (comes in contact with non-intact skin or mucous membranes but ordinarily does not penetrate them) – cleaning and high-level disinfection
 - Critical equipment (enter sterile tissues, including the vascular system) – cleaning and sterilization
- Always clean equipment first using friction, water and detergents to remove debris prior to disinfection or sterilization
 - Disinfect equipment according to required level based on the Spaulding Classification
 - Sterilize critical equipment using validated and monitored methods
 - Ensure manufacturer's instructions for use are followed

ADMINISTRATIVE CONTROLS

Administrative controls are measures in place to protect workers and clients from infection. Administrative controls include, but are not limited to:

- IPAC policies and procedures must be developed, implemented, and followed. The policies and procedures must include, at a minimum:
 - Indications for when hand hygiene should be performed
 - Availability and use of hand hygiene supplies (e.g., alcohol-based hand rub, hand soap) in vehicles and stations
 - Selection and use of PPE based on risk assessment
 - Storage, availability, and disposal of PPE in vehicles and stations
 - Routine, post-call, and scheduled cleaning of vehicles, equipment and stations
 - Use of approved cleaning and disinfectant products consistent with manufacturer's instructions for use and equipment compatibility
- Staff education and training – IPAC education should be provided to workers on hire, yearly, and on an ongoing basis
- Healthy workplace policies and initiatives (e.g., immunization and sharps management)

Additional Precautions

Additional precautions are used in addition to routine practices for clients known or suspected to be infected or colonized with certain microorganisms. These precautions are based on the method of transmission (e.g., contact, droplet, airborne). Additional precautions include the use of barriers, PPE and control of the environment.

Route of Transmission	Description	Examples of Microorganisms/Diseases	Precautions to be Taken
Contact	<p>Direct contact: Microorganisms are passed from an infected person to another person through physical touch.</p> <p>Indirect contact: Microorganisms are transferred to a person through contaminated objects, equipment, or surfaces in the environment rather than through direct touch with an infected individual</p>	<ul style="list-style-type: none"> • Antibiotic resistant organisms (AROs) • <i>Clostridioides difficile</i> • Norovirus (gastroenteritis) 	<ul style="list-style-type: none"> • Hand hygiene • Gloves • Gown
Droplet + Contact	<p>When a person coughs or sneezes, droplets containing microorganisms are released into the air. These droplets usually travel only a short distance (about 2 metres) before landing in another person's nose or mouth.</p> <p>The droplets can also land on nearby surfaces or objects. If someone touches these contaminated surfaces and then touches their face, the microorganisms can spread through contact.</p>	<ul style="list-style-type: none"> • COVID-19 • Rhinovirus (common cold) • Influenza (seasonal) • Viral Hemorrhagic Fevers - stable • MPOX • IGAS (invasive Group A Streptococcus) 	<ul style="list-style-type: none"> • Hand hygiene • Mask (surgical) • Eye protection
Airborne/Novel Infections	<p>When people cough, sneeze, laugh, talk, or breathe, tiny particles containing microorganisms can be released into the air.</p> <p>These particles can stay in the air for a long time and travel over distances with air movement.</p> <p>A person becomes infected when they breathe in these airborne microorganisms.</p>	<ul style="list-style-type: none"> • Tuberculosis • Chickenpox • Measles • MERS (Middle Eastern Respiratory Syndrome) • Influenza (avian – H5N1, H7, H9 strains) • Viral Hemorrhagic Fevers - unstable 	<ul style="list-style-type: none"> • Hand hygiene • Respirator (N95) • Negative pressure room • Room/door closed

Resources

- Provincial Infectious Diseases Advisory Committee (PIDAC) – [Routine Practices and Additional Precautions in All Health Care Settings, 3rd edition, June 2025](#)
- Provincial Infectious Diseases Advisory Committee (PIDAC) – [Best Practices for Environmental Cleaning for Prevention and Control of Infections in All Health Care Settings, 3rd edition, November 2025](#)
- Provincial Infectious Diseases Advisory Committee (PIDAC) – [Best Practices for Cleaning, Disinfection and Sterilization of Medical Equipment/Devices in All Health Care Settings, 3rd edition, May 2013](#)

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