



Infection Prevention and Control Manual



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1. Scope of Document

This Infection Prevention and Control Manual is a resource for infection prevention and control information and strategies in the delivery of health care in community settings in Nunavut.

Introduction

The Infection Prevention and Control Program in Nunavut enables health care providers and support workers in providing consistency in:

- Screening clients for infectious agents
- Risk assessment for possible exposure or spread of infectious agents and
- Risk reduction strategies.

The information in this guide will focus on strategies including clean hands, clean equipment, clean environment, client education as well as healthy workers and care providers.

For purposes of this manual, a health care provider is an individual who may have the potential to acquire or transmit an infectious agent during the course of his or her work providing and supporting health care.

The term “patient” is intended to include residents of health facilities, clients of Home Care and any person that is seeking or receiving health care in a community health setting in Nunavut.



Other Nunavut manuals that are associated and overlap with the goals of Infection Prevention and Control Program are:

- Communicable Diseases
- Tuberculosis
- Immunization
- Community Health Nursing Administration Manual

These manuals should be referred to as needed and are cross referenced throughout this manual.

2. Guiding Principles in Infection Prevention and Control

Consistent application of Routine Practices is expected for the care of all patients at all times across all levels of health care.

1. Infection prevention and control strategies are designed to protect patients and health care providers by following infection prevention and control practices at all times and use risk assessment, critical thinking and problem solving in managing clinical situations.
2. Microorganisms may be transmitted from symptomatic and asymptomatic individuals, emphasizing the importance of adhering to Routine Practices at all times for all patients in all health care settings.
3. Health care associated infections (HCAI) cause sickness and account for numbers of deaths. Many of these health care associated infections can be prevented by following infection prevention and control strategies to reduce the transmission of microorganisms in all health care settings.
4. A systematic approach to infection prevention and control requires each health care provider to protect everyone who accesses the health care system, in all of its many forms.
5. A systematic approach requires initial orientation for health care workers at beginning of job in the community health centre as well as ongoing refreshers and updates on prevention and control topics.
6. Individual components of Routine Practices are determined by a risk assessment at all times in all stages of care (e.g. an assessment of the task/ care to be performed, the patient's clinical presentation, the physical state of the environment and the health care setting, and the current state of health of individuals in the community).
7. Patients known or suspected to be infected or colonized with certain microorganisms will require Routine Practices plus Additional Precautions based on the modes of transmission of the microorganisms.



8. Additional Precautions should be used based on clinical presentation, not waiting for the microorganism identification. These precautions should be reviewed based on laboratory results.
9. Application of Additional Precautions may vary between acute care, continuing care, ambulatory care, pre-hospital care and home care settings. Current trends in illness in the community should be considered in the application of Additional Precautions.

References:

Ontario Ministry of Health and Long Term Care Infection Prevention and Control Core Competencies Program (2010)

Routine Practices and Additional Precautions: Preventing the Transmission of Infection in Health Care, Government of Manitoba (2012)

3. Chain of Infection

Certain conditions must be met in order for a microbe or infectious disease to be spread from person to person. This process, called the chain of infection, can only occur when all six links in the chain are intact. By breaking this chain at any of the links, the spread of infection is stopped.

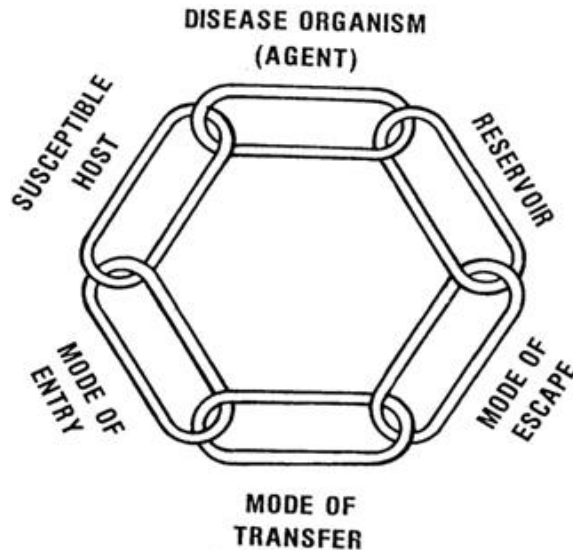


Diagram: The chain of infection

Links in the chain

- **Disease Microorganisms (Agent).** These are the pathogens that cause communicable diseases. Most commonly these are bacteria, virus, fungi or parasites.
- **Reservoir.** The reservoir (source) is a host which allows the pathogen to live, and possibly grow, and multiply. Humans, animals and the environment can all be reservoirs for microorganisms. Sometimes a person may have a disease but is not symptomatic or ill. This type of person is a carrier and she/he may be referred to as 'colonized'. Examples of reservoirs are standing water, a person with a common cold or syphilis, or a dog with rabies.
- **Mode of Escape.** This refers to the route by which the infectious microorganisms escape or leave the reservoir. For example, pathogens that cause respiratory diseases usually escape through the respiratory tract (coughing and sneezing).



Modes of Escape	Breaking the Link
Respiratory Tract. Microorganisms leave the body of the infected person by means of droplets exhaled as a spray when coughing, sneezing, talking, singing or just breathing. Microorganisms also escape through nose and throat secretions.	<ul style="list-style-type: none"> • Wear a mask • Do not talk directly into patient's face • Stay home if you are sick • Practice good cough etiquette (cover your coughs and sneezes) • Perform good hand hygiene
Gastrointestinal Tract. Microorganisms that leave the body of the infected person by means of body secretions (e.g. stool and vomit). For example hepatitis A virus is shed in the stool of the infected person.	<ul style="list-style-type: none"> • Handle and dispose of body secretions properly • Use personal protective equipment • Perform good housekeeping • Perform good hand hygiene
Skin. Microorganisms that leave the body of the infected person by wound drainage or through skin lesions.	<ul style="list-style-type: none"> • Dispose of wound dressings properly • Use personal protective equipment (PPE) • Perform good hand hygiene
Blood. Infection may occur when someone's blood gets into another person's system.	<ul style="list-style-type: none"> • Safe handling of sharps • Use gloves for procedures where there is risk of exposure to blood • Use care in obtaining, transporting and processing specimens • Perform good hand hygiene

• **Mode of Transmission.** Since microorganisms cannot travel on their own, they require a vehicle to carry them to other persons and places. See more detail in Section 4: Modes of Transmission.

• **Mode of Entry.** The path for the microorganism to get into a new host (the reverse of the portal of exit). The mode of entry refers to the method by which the pathogens enters the person.



Pathogens enter the body by:

- inhalation (e.g. respiratory tract)
- ingestion (e.g. GI tract)
- absorption (e.g. mucous membranes of eyes)
- break in skin (e.g. needle stick, cut)
- introduction by medical procedures (e.g. catheters)

Modes of Entry	Breaking the Link
<p>Respiratory Tract. Small particles that result from evaporation of droplets from the respiratory tract of infected persons remain suspended in the air of poorly ventilated spaces for periods of time. The infectious microorganisms can be inhaled by a well person who may then become infected with the disease.</p>	<ul style="list-style-type: none"> • Wear a mask/respirator • Maintain good ventilation • Isolate those with respiratory symptoms • Good respiratory hygiene/etiquette practices • Perform good hand hygiene
<p>Gastrointestinal Tract. Pathogenic microorganisms enter the body of a new host when food or water contaminated by feces is ingested (fecal/oral route).</p>	<ul style="list-style-type: none"> • Dispose of body excretions carefully • Careful food handling • Perform good housekeeping • Wear appropriate personal protective equipment • Perform good hand hygiene
<p>Mucous membranes. Absorption of microorganisms through exposed eyes, nose and mouth.</p>	<ul style="list-style-type: none"> • Protect eyes, nose and mouth with face shield during procedures likely to generate splashes or sprays • Carry out good housekeeping • Perform good hand hygiene
<p>Skin. Microorganisms enter the body when a person comes into contact with wound drainage or skin secretions.</p>	<ul style="list-style-type: none"> • Dispose of wound dressings carefully and properly • Wear personal protective equipment • Maintain healthy intact skin • Perform good hand hygiene



- **Susceptible Host.** The future host is the person who is next exposed to the pathogen. The microorganism may spread to another person but does not develop into an infection if the person's immune system can fight it off. They may however become a 'carrier' without symptoms, able to then be the next 'mode of transmission' to another 'susceptible host'. Once the host is infected, he/she may become a reservoir for future transmission of the disease.

Susceptible hosts abound in health care settings, as those accessing the health care system often have compromised immune systems. This may be due to other illnesses processes, treatments or medications. This ineffective immune system leaves them vulnerable to infectious agents that may be in the health care environment.

Susceptible Hosts	Control
<ul style="list-style-type: none"> • Children who are very young • People who are very old • People on inadequate diets • People who are chronically ill • People receiving medical therapy such as chemotherapy or high doses of steroids • People who are already ill • People with open wounds 	<ul style="list-style-type: none"> • Separate high risk individuals from persons with known or potential infections • Provide nutritional supplements to persons on inadequate diets • Vaccinate against vaccine preventable diseases • Maintain proper sanitation of air and environment • Diagnose and treat underlying disease

Opportunities to break the chain of infection

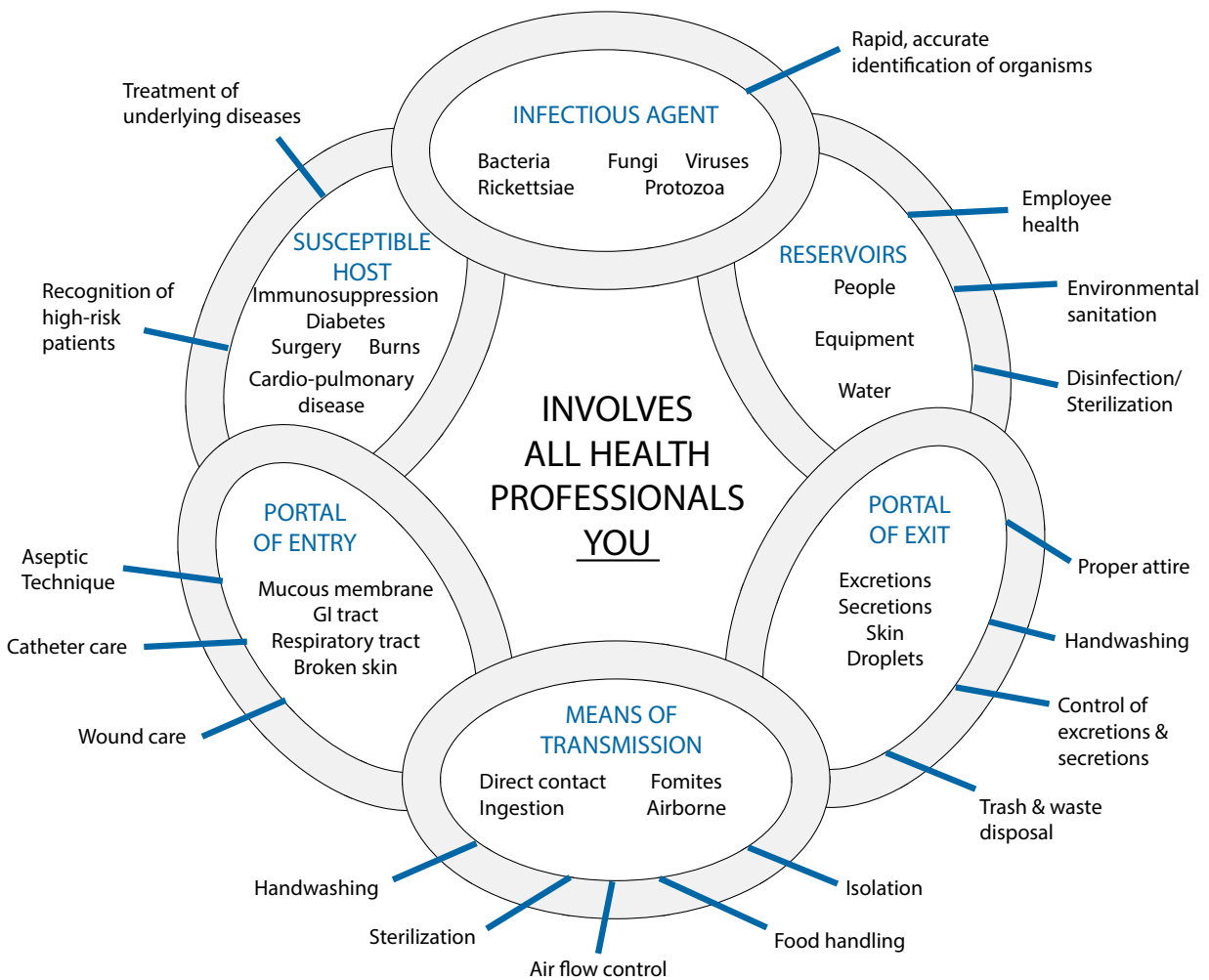
Transmission may be interrupted when:

- the infectious agent is eliminated, inactivated or cannot exit the reservoir
- the portals of exit are contained through safe infection control practices
- the transmission between objects or people does not occur due to barriers and safe infection control practices
- the portals of entry are protected
- other persons receiving health care are not susceptible.



Diagram: Breaking the Chain of Infection

If the chain is not broken the infectious organism is able to go on to develop disease in another person.



There are many opportunities to stop the spread of infection.



4. Modes of Transmission

Breaking the chain at the 'mode of transmission' is one of the most important ways to interrupt the spread of infection. This is where infection prevention and control strategies can be most successful.

Microorganisms are transmitted in health care settings by four main routes:

- Contact
- Droplet
- Airborne
- Common vehicle

Routine Practices are designed to reduce the risk of transmission.

Microorganisms vary by size, the length of time that they survive on surfaces or in the air and the method of getting around. These factors plus the variability in virulence, the complications of treatment and the complex symptoms may require special treatment of some patients. These 'Additional Precautions' are grouped, based on the mode of transmission of the infectious agent.

See:

Section 7: Additional Precautions

Section 9: Personal Protective Equipment.



Table of Survival Times of Microorganisms on Hard Inanimate Surfaces

Organism	Survival Time
Adenovirus	Up to 3 months
Clostridium difficile	Up to 5 months
Coronavirus	3 hours
E. coli	Up to 16 months
Influenza	1-2 days
MRSA	Up to 7 months
M. tuberculosis	Up to 4 months
Norovirus	Up to 7 days
RSV	Up to 6 hours

BMC Infectious Diseases 2006: 6: 130

Contact



Contact is the most frequent mode of transmission of health care associated infections and can be divided into: direct and indirect. An example of contact transmitted microorganisms is Noroviruses which are responsible for many gastrointestinal infections.

- Direct: involves direct body surface to body surface contact and physical transfer of microorganism between an infected or colonized person to another person by touch.
- Indirect: involves contact between a person and a contaminated object. This is often a result of unclean hands contaminating an object or environment. The microorganism remains on this surface to be picked up by the next person who touches it.

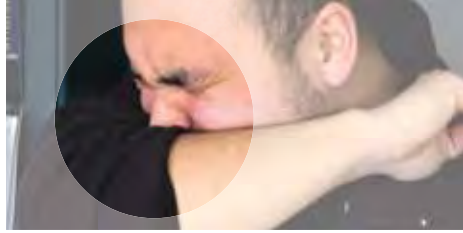
Droplet



Transmission occurs when droplets containing microorganisms generated during coughing, sneezing and talking are propelled through the air. These microorganisms land on another person, entering that new person's system through contact with his/her conjunctivae, nasal mucosa or mouth. These microorganisms are relatively large and travel only short distances (up to 6 feet/2 metres). However these infected droplets may linger on surfaces for long periods of time, so these surfaces (within the range of the coughing/sneezing person) will need additional cleaning. For this reason there may be both Droplet and Contact Precautions required at the same time.

Examples of microorganisms that are spread by droplet transmission are: influenza, colds, respiratory syncytial virus (RSV) and some organisms causing pneumonia.

Airborne



Airbone transmission of infectious agents occurs either by:

- Airborne droplet nuclei (small particles of 5 mm or smaller in size)
- Dust particles containing infectious agents.

Microorganisms carried in this manner remain suspended in the air for long periods of time and can be dispersed widely by air currents. Because of this, there is risk that all the air in a room may be contaminated.

Some examples of microorganisms that are transmitted by the airborne route are: *M. tuberculosis*, rubeola, varicella and hantaviruses.

Common Vehicle



Applies to microorganisms that are transmitted by contaminated items such as food, water, medications, medical devices and equipment.

To inhibit the transmission of microorganisms by this mode:

- Clean patient equipment between uses with different patients
- Handle, store and prepare food properly
- Careful store and draw up doses of medication from multidose medication vials.

5. Routine Practices

“All patients are potentially infectious (even when asymptomatic) and the same safe standard 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 to prevent the spread of organisms”.
PIDAC, Routine Practices and Additional Precautions in all health care settings, 2012.

Routine Practices is based on the concept that all blood and most body fluids (urine, feces, wound drainage, sputum) may contain infectious organisms (bacteria, virus, parasites or fungus).

The key to Routine Practices is to assess the risk of transmission of microorganisms before any interaction with the patient and the environment in which they are to receive health care.

The consistent use of Routine Practices will reduce the volume and frequency of exposures. This will reduce the risk of transmission of microorganisms to other workers, patients and visitors. A decrease in the spread of microorganisms will reduce the number of people exposed and thereby the reduce the number of colonized and infected people.

Routine Practices include:

- Hand hygiene
- Risk assessment
- Risk reduction strategies
- Education



Hand hygiene

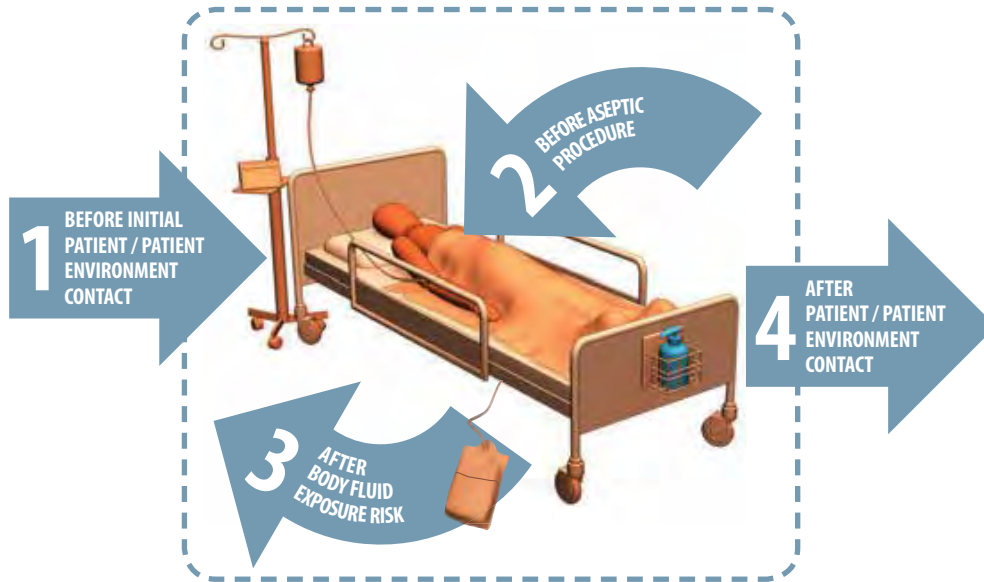
Hand hygiene is removing or killing microorganisms on the hands. When performed correctly, hand hygiene is the single most effective way to prevent the spread of communicable diseases and infections. In health care, hand hygiene is used to remove transient microorganisms that have been picked up via contact with patients, contaminated equipment or other surfaces in the health care environment. Hand hygiene uses soap and running water or alcohol-based hand sanitizer.

Although health care providers know the importance of hand hygiene, studies show health care providers perform hand hygiene only 40 to 60 % of the times that they should.

Hand hygiene should be performed:

- Before providing care to the patient
- Between dirty and clean activities with same patient
- Before aseptic procedures
- When personal protective equipment (PPE) is removed
- Before preparing, handling, serving or eating food or feeding a patient
- After assisting patients with personal care
- Before putting on and after taking off gloves
- After performing personal functions (e.g. using the toilet, blowing your nose)
- When hands come into contact with secretions, excretions, blood and body fluids
- When leaving the patient's care area.

Use soap and running water whenever hands are visibly soiled.



From: Canadian Patient Safety Institute, Canada's Hand Hygiene Campaign Toolkit, 2008

In health care, hand hygiene is required using either alcohol-based hand sanitizer (60-90% concentration ethyl or isopropyl alcohol) or hand washing with plain liquid soap and running water. Hand sanitizer is accepted as the most effective practice.

When should soap and water be used?

The mechanical action of washing, rinsing and drying removes transient microorganisms present on the hands. Hand washing with soap and running water must be performed whenever hands are visibly soiled.

When should alcohol-based hand sanitizer be used?

Use of alcohol-based hand sanitizers is the preferred method for decontaminating hands, providing they contain more than 60% alcohol. The alcohol destroys the cell walls of microorganisms leaving them non-infectious. These solutions are widely used in health care settings, or in situations where running water is not available. Using alcohol-based hand sanitizer is better than washing hands (even with an antibacterial soap) when hands are not visibly soiled.



The effectiveness of hand hygiene is influenced by a number of factors:

- Technique
- Skin condition
- Artificial nails and jewelry

Good hand washing technique removes microorganisms from your skin.

Technique

Hand washing:

1. Remove hand and arm jewelry and wet your hands with warm (not hot) running water.
2. Add soap from a pump container, and then rub your hands together, making a soapy lather. Rub for at least 15 seconds, being careful not to wash the lather away. Rub the front and back of your hands, between your fingers and under the end of your nails.
3. Rinse your hands well under warm running water, using a rubbing motion with the water running down your hands and off the tips of your fingers.
4. Gently pat hands dry with paper towel. Rubbing vigorously with paper towels can damage the skin, weakening the protective barrier that intact skin provides.
5. Turn off the taps using a paper towel so that you do not recontaminate your hands.
6. Dispose of the paper towel in a garbage container.

**Alcohol-based hand sanitizers should only be used
if no visible dirt is present on the hands.**

Good technique with alcohol-based hand sanitizer destroys microorganisms on your skin.

Alcohol-based hand sanitizer involves:

1. Remove hand and arm jewelry.
2. Apply enough alcohol-based hand sanitizer to cover all surfaces of your hands, including under the end of your nails (1-2 pumps).
3. Use a rubbing motion to evenly distribute the alcohol-based hand sanitizer over all surfaces of the hands, particularly between fingers, fingertips, back of hands and base of thumbs.
4. Rub hands until your hands feel dry (minimum 15-30 seconds).

Skin condition

Your skin is one of your most important personal protective barriers. Frequent hand washing and hand sanitizing dries your skin so use a skin moisturizer to maintain health intact skin. To prevent chafing, wet your hands before applying soap with warm water; pat rather than rub hands dry; and apply lotion liberally and frequently. Skin lotions should be chosen that will not interfere with glove integrity and be scent free.

Most alcohol-based hand sanitizers contain moisturizers to reduce the incidence of skin irritation. Frequent use of alcohol-based hand sanitizers actually lessens the incidence of skin breakdown. Hand sanitizer use does not subject hands to the friction and abrasion involved in hand washing and drying hands.

Liquid soap containers and alcohol-based hand sanitizer containers should be used until empty and then discarded. Containers must not be topped up, as there is a risk of contamination of residual liquid.



Nails and jewelry

- DON'T leave hand jewelry on when performing hand hygiene. Jewelry is very hard to clean and hides bacteria and viruses from the mechanical action of the washing/rubbing. Minimize hand jewelry when doing patient care.
- DON'T use artificial nails, and don't wear your nails long (>3-4 mm), as they trap bacteria and are difficult to keep clean.
- DON'T wear chipped nail polish, as bacteria may become trapped in the rough edges.

Risk assessment:

Any contact with patients should involve a quick risk assessment prior to a task. These tasks may include making appointments, registration or at time of admission or treatment.

Some possible issues to be considered:

- Do they have a cough and are not able to follow respiratory etiquette?
- Do they have a fever?
- Do they have drainage or leakage? Is it contained?
- Are they incontinent?
- How susceptible is the patient to infection? Is their immune system compromised (e.g. Are they very young or very old? Do they have invasive devices, open areas or auto-immune diseases?)
- What is the risk of exposure to blood, body fluids, mucous membranes, non-intact skin in the task about to be performed?
- How competent is the health care provider in performing this task?
- How cooperative will the patient be while the task is being performed?

Risk reduction strategies may include:

Patient Placement:

- Clinic Setting - maintain a six-foot (2 metres) distance until initial triage is completed. Sit beside the patient (instead of in front of them).
 - Segregate, if needed and where possible, in waiting rooms and if staying in the health centre for a period of time.
 - Book appointments for patients with known risk of being infectious at end of clinic to allow for segregation during visit and extra time for thorough cleaning after the appointment.
 - Consider PPE at first contact if patient is symptomatic (e.g. unable to control coughing and sneezing).
- Planning Home Care Visit - visit patients with uncontained draining wound, known MRSA etc. at the end of the day to reduce the risk of spreading to other patients.
- Long Term Care - place susceptible patients (with open skin areas or indwelling tubes) with low risk residents (continent, able to follow directions and maintain hygiene).

In Continuing Care Centres (CCC) it is important to assess and integrate residents into activities safely. The risk assessment will identify which residents interact with others, for example participating in a sing-song is acceptable for a resident with a covered wound as long as drainage is contained.

Personal Protective Equipment (PPE)

Protect yourself and others from body substances and mucous membranes. You will need to put on personal protective equipment whenever there is a risk of contact with non-intact skin, mucous membranes or body fluids.

Personal protective equipment may include:

- Gloves
- Gowns
- Masks or respirators
- Eye and face protection



Some examples of when to wear gloves:

When to wear gloves	When gloves are not needed
Changing a dressing	Feeding a patient
Changing diapers	Social touch
Cleaning up an incontinent patient	Pushing a wheelchair
Performing mouth care	Delivering meals, mail, laundry
Performing venipuncture	Providing care to patients with intact skin such as taking temperature

Safe handling of sharps: no recapping and immediate disposal by the person using the sharp. Use safety engineered sharps where possible.

Clean Patient Care Equipment: Health care settings require specific standards in cleaning of equipment.

Clean Environment: Health care settings require specific standards in housekeeping.

Sterile medicines: Avoid multi-dose vials if possible due to the potential risk of contamination.

Multi-dose vials must be labeled with the date, time and initials of when the vial was opened to ensure potency. Use sterile needles and clean the stopper prior to withdrawing medications to ensure the vial contents remains sterile. There have been cases of contamination of multi-dose vials when syringes or needles are re-used.

Single dose vials must be used for only one dose which is drawn for a single patient. These medications are often designed without preservatives and therefore, deteriorate once accessed, and contain no agent to combat possible contamination.

Medications, including vaccines that require refrigeration, must be stored in a manner that ensures they remain safe (e.g. maintaining Cold Chain). This requires daily monitoring and documenting of storage fridge temperature. A separate dedicated fridge is required for storage of medications and vaccines. Food and specimens must not be kept in these fridges.

Education:

Patients and Visitors: Education is required to ensure the public coming into the health care setting is aware of infection prevention and control strategies. Their awareness about hand hygiene, respiratory hygiene and Additional Precautions will help protect them. Thus decreasing the risk of introducing infections to the health centre environment, spreading it in the health centre or in the community.

Education can be provided through posters in public areas such as waiting areas (e.g. Nunavut Hand Hygiene and Cover Coughs and Sneezes posters). Infection prevention and control strategies can also be included in health teaching at the time of triage and during individual interviews and assessments.

Staff education: Education needs to be provided about risk assessment and how to make good decisions on risk reduction. Reinforcement of hand hygiene, use of personal protective equipment, Routine Practices and Additional Precautions need to be part of initial orientation and reviewed on an annual basis.

Audits of processes: Audits will determine needs for additional education. Audits can be done in housekeeping, reprocessing/sterilization and hand hygiene. Periodic hand hygiene audits are common in Canadian health care settings. Audits can be used as a vehicle for individual instruction on infection prevention and control practices.

Adapted from: PIDAC- Routine Practices and Additional Precautions in All Health Care Settings, November, 2012

See: Community Health Nursing Program Standards and Protocols 2011, 10-002, 10-004

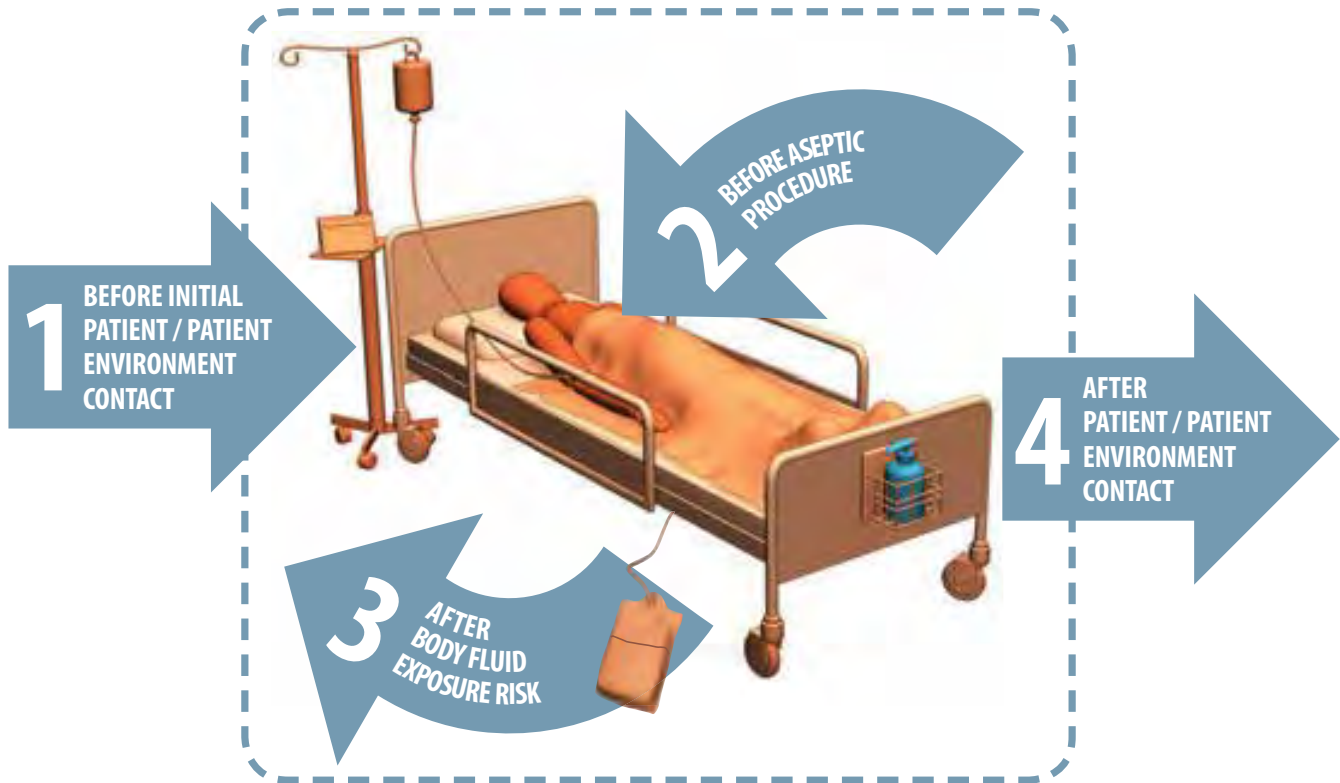
Appendices:

- Your 4 moments for hand hygiene
- 2014 Nunavut “Wash your hands” poster





Your 4 Moments for Hand Hygiene



1	BEFORE initial patient / patient environment contact	<p>WHEN? Clean your hands when entering:</p> <ul style="list-style-type: none"> • before touching patient or • before touching any object or furniture in the patient's environment <p>WHY? To protect the patient/patient environment from harmful germs carried on your hands</p>
2	BEFORE aseptic procedure	<p>WHEN? Clean your hands immediately before any aseptic procedure</p> <p>WHY? To protect the patient against harmful germs, including the patient's own germs, entering his or her body</p>
3	AFTER body fluid exposure risk	<p>WHEN? Clean your hands immediately after an exposure risk to body fluids (and after glove removal)</p> <p>WHY? To protect yourself and the health care environment from harmful patient germs</p>
4	AFTER patient / patient environment contact	<p>WHEN? Clean your hands when leaving:</p> <ul style="list-style-type: none"> • after touching patient or • after touching any object or furniture in the patient's environment <p>WHY? To protect yourself and the health care environment from harmful patient germs</p>

Wash your hands

Uaqlugit alगतit



1

WET HANDS
KINIPKAQLUGIT
ALRATIT



2

APPLY SOAP
INGMIUTMIK
ATUQLUTIN



3

RUB FOR 15 TO 20
SECONDS
UAKLUGIT 15 MIN 20
SECONDS NUT



4

SCRUB NAILS
UAKLUGIT KUKIIT



5

RINSE
IMAINNAQMIK
UAKLUGIT



6

DRY HANDS
PANIQTIQLUGIT
ALRATIT



7

TURN OFF WITH PAPER
QAMILLUGU ATUQLUTIN
TITIRAQMIK AALLARUNMIK

Wash your hands

Lavez-vous les mains



1

WET HANDS
SE MOUILLER LES
MAINS



2

APPLY SOAP
FAIRE MOUSSER LE
SAVON



3

RUB FOR 15 TO 20
SECONDS
FROTTER PENDANT 15
À 20 SECONDES



4

SCRUB NAILS
SE NETTOYER LES
ONGLES



5

RINSE
RINCER



6

DRY HANDS
SE SÉCHER LES MAINS



7

TURN OFF WITH PAPER
FERMER LE ROBINET
AVEC LE PAPIER

6. Respiratory (Cough and Sneeze) Etiquette

Respiratory etiquette should be reinforced with staff, patients and visitors as a personal practice that helps prevent the spread of microorganisms (e.g. colds and influenza).

It is important that you, your patients, and the visitors practice the following routine:

- Visitors should refrain from coming to the health care setting if they have an acute respiratory illness.
- Post signs in appropriate languages at all entrances reinforcing ways to contain coughs and sneezes. (See posters in appendices)
- Give the patient a procedure mask if they have uncontrolled coughing and sneezing.
- Provide procedure masks and/or tissues near entrances (masks with earloops will probably be used more than the ones with the tie straps).
- Turn your head away from others when you cough or sneeze.
- Maintain a 2 metres (6-foot) separation between those with respiratory illness and others.
- Cover your nose and mouth with a tissue when coughing or sneezing.
- Discard used tissues into a garbage container followed by washing hands or using hand sanitizer.
- If tissues are not available, sneeze or cough into your sleeve.
- Provide readily accessible hand sanitizer for staff and the public.
- Avoid touching your eyes or mucous membranes to help prevent germs from gaining access to your body by this route.
- If you have uncontrolled coughing or sneezing that comes on suddenly at work, put on a procedure mask.



- Protect personnel by installing a plexiglas barrier where practical (e.g. registration).
- If the patient finds it difficult to breathe with a mask on and is coughing/ sneezing, the health care worker should wear a procedure mask and eye protection.



Procedure mask



N95 respirator

If a tuberculosis infection is suspected, the health care provider must wear a fit-tested N95 mask during patient encounters and the patient must wear a procedure mask when outside of the isolation room.

If there is risk of a splash or a spray to the face then face/eye protection should also be worn.



Procedure mask with splash and spray face protection

Next page

Appendices:

- 2014 Nunavut "Cover your coughs and sneezes " poster
- Door signs

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Cover your coughs and sneezes



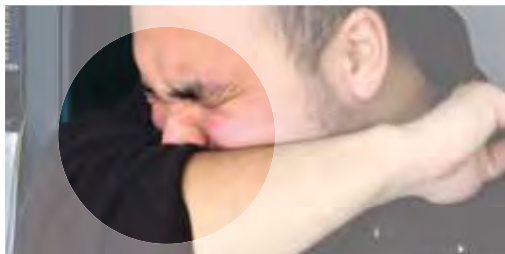
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Cover your mouth and nose with a
tissue.



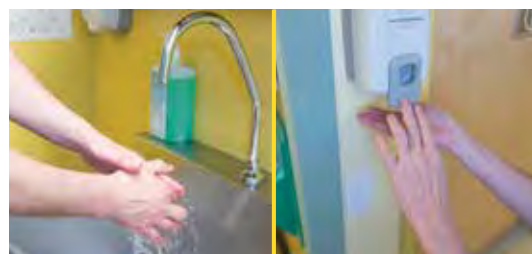
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Throw tissues in the trash.



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No tissue:
sneeze or cough in your sleeve.



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ᑖᑦᑖᑖᑖᑖᑖᑖᑖᑖᑖᑖᑖᑖᑖᑖᑖ.

Wash your hands or use hand sanitizer.

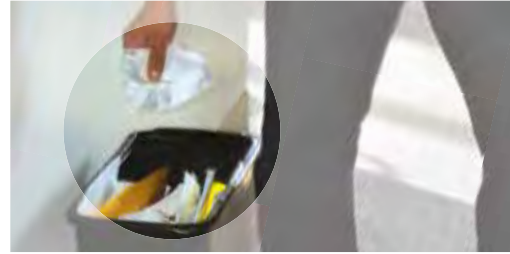
Cover your coughs and sneezes

Aiqnut qalakuqpaklutit tagyuliruvillu



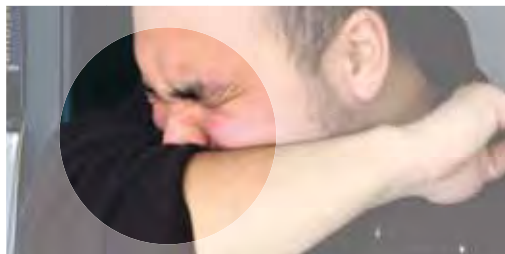
Cover your mouth and nose with a tissue.

Kakkiiyautimut matuvaklugu qan'ngit qingallu.



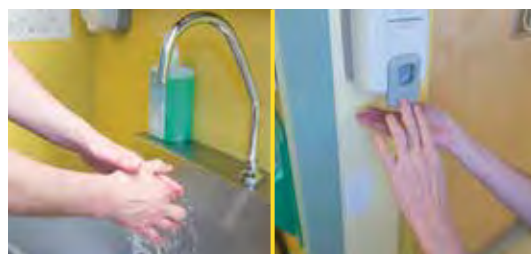
Throw tissues in the trash.

Igivaklugit kakkiiyautit iqqakuurvikmut.



No tissue:
sneeze or cough in your sleeve.

Kakkiiyautaitkuvit:
Tayuqpaklutit qalakuqpaklutit aiqnut.



Wash your hands or use hand sanitizer

Uaqpaklugit algakitit halummaqtirutimut.

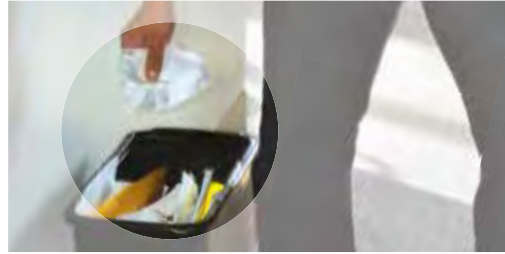
Cover your coughs and sneezes

Couvrez-vous la bouche et le nez lorsque vous tousssez et éternuez



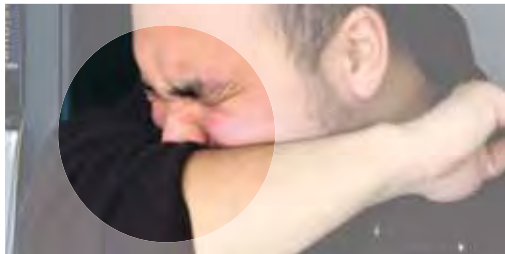
Cover your mouth and nose with a tissue.

Couvrez-vous la bouche et le nez avec un mouchoir.



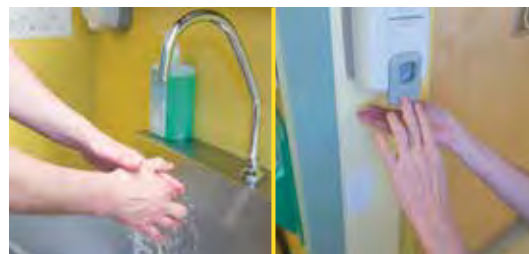
Throw tissues in the trash.

Jetez le mouchoir à la poubelle.



No tissue:
sneeze or cough in your sleeve.

Pas de mouchoir :
Toussez et éternuez dans votre manche.



Wash your hands or use hand sanitizer.

Lavez-vous les mains ou utilisez un désinfectant pour les mains.

STOP!

clean your hands



ᑭᑦᑲᑲᑲᑲ!

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If you are coughing and sneezing:

- Wear a mask
- Use a tissue and put it in the garbage
- Wash your hands

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NUTQARIT!

halummaqtiqlugit algatit

If you are coughing and sneezing:

- Wear a mask
- Use a tissue and put it in the garbage
- Wash your hands

Kalaliruvit takyuinnaliruvit:

- Matuhimalugu qingat qaninlu
- Atuqlutit kakkiiyautimik igitpaklugulu iqqakuuqvikmut
- Uaqpaklugit algatit



ARRÊT!
nettoyez-vous les mains

If you are coughing and sneezing:

- Wear a mask
- Use a tissue and put it in the garbage
- Wash your hands

Si vous tousssez ou vous éternuez :

- Portez un masque
- Utilisez un mouchoir et jetez-le à la poubelle
- Lavez-vous les mains

7. Additional Precautions

Additional Precautions are based on the mode of transmission of the causative organism.

Contact

Droplet

Airborne

Or combinations of the above

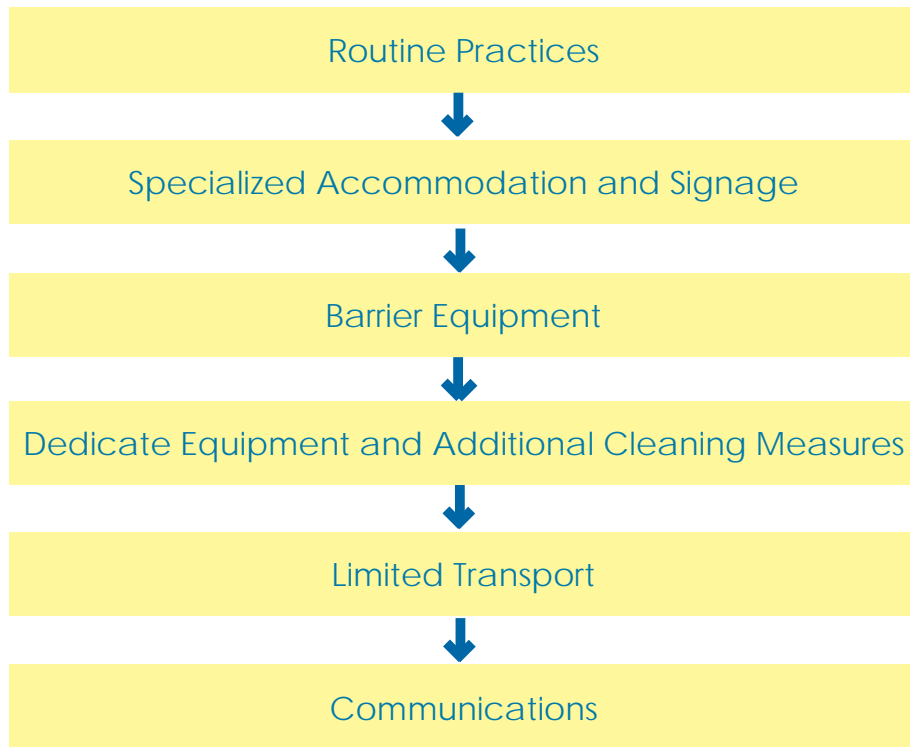
Additional Precautions are used as an adjunct to Routine Practices when microorganisms are:

- Highly infectious
- Known to create severe disease
- Difficult to treat (antibiotic resistant).

If a patient is showing symptoms that suggests an infection, start using appropriate Additional Precautions immediately. Waiting until lab confirmation or diagnosis may result in contamination of the environment or other people with the infectious agent.



Elements of Additional Precautions



Additional Precautions includes:

- Use of barriers (e.g. closed room doors)
- Use of personal protective equipment
- Control of the environment (e.g. negative pressure ventilation, restriction of visitors)
- Dedicated equipment
- Extra cleaning procedures.

Communication is also an important element in assuring that health care providers, support workers, family and visitors are aware of the precautions. Precautionary door signage on inpatient rooms (see Appendix A) reminds staff of personal protective equipment required and informs visitors of precautions.

This information needs to be reinforced and supplemented with verbal teaching by the health care staff to all those interacting with the patient including family and visitors.

Specialized engineering controls may be required (e.g. airborne isolation room for a patient with tuberculosis) or enhanced cleaning protocols for the patient environment (e.g. *Clostridium difficile*).

Contact Precautions

Infections spread by contact:

- Direct: skin to skin
- Indirect: skin to environmental

Contact Precautions are used for situations where the environment or skin may be contaminated, if there is:

- Diarrhea and vomiting
- Patient unable to control feces or vomit
- Infectious agents that spread easily in the environment (e.g. norovirus, rotavirus)
- Other microorganisms that may be transmitted by contact with intact skin or with contaminated environmental surfaces (e.g. MRSA, VRE, *C. difficile*).

Hand hygiene is particularly important with contact precautions as the infection is spread by touch and often on caregivers' hands.

Accommodation:

- Single room with a dedicated toilet and sink is necessary. If not available, the patient with these symptoms should use a dedicated commode chair and not share a toilet.
- The door may remain open. Limit patient movement from their room to reduce risk of contamination of others and the facility.



In Long Term Care and other residential settings, placement of residents requiring Contact Precautions should be reviewed on a case-by-case basis. A single room may not be available. Infection risk to other occupants of the room and facility must be considered when selecting roommates and activities for the resident. Consideration needs to be given to the immune status of other residents, the ability of the resident to comply with controlling secretions and the nature of the resident's symptoms.

In ambulatory settings, place patients who require Contact Precautions in an examination room or cubicle as soon as possible. Encourage the patient to perform good hand hygiene. If known to be infectious, appointments for these patients should be booked at the end of the day to allow for additional cleaning time and fewer patients being seen in that exam area over the balance of the day.

Personal Protective Equipment:

In acute care:

- **Gloves:** worn when entering patient's room or bed space; remove gloves and perform hand hygiene when leaving room or bed space.
- **Gown:** worn if skin or clothing will come in contact with the patient or the patient's environment; if there is risk of drainage or other contamination.

A gown is required:

- In rooms of children who are incontinent or too immature to comply with hygiene
- In rooms of adults who soil the environment
- In crowded rooms where there is a likelihood of coming into contact with contaminated furnishings or equipment
- When providing direct care, such as physical examination, checking vital signs, bathing or turning the patient, changing clothing, incontinent care, dressing changes, and care of open wounds.

A gown is not required:

- When delivering a food tray

- When doing a visual check of a patient
- If not touching anything in the patient room and just talking to the patient.

If a health care provider enters a room with a patient in a Contact Precautions room without a gown and is then required to perform an activity that requires a gown, one must remove and discard gloves, clean hands, put on a gown and apply fresh gloves before returning to provide care.

In non-acute settings:

- Gloves: worn when there is direct care activities or risk of hands being contaminated in patient care or activities in the patient's bed space.
- Gown: worn if skin or clothing will come in contact with the patient or the patient's environment. If there is risk of drainage or other contamination of skin or clothing.
- Gloves and gown: if worn, must be removed and hands cleaned immediately following the activity for which they were used.

Transport:

It is not appropriate for patients to wear gloves or isolation gowns while outside their room. Performing hand hygiene and assuring that body fluids are contained is sufficient for the patient.

Cleaning:

Routine cleaning practices are acceptable for most rooms where the patient is on Contact Precautions.

Exceptions:

- Antibiotic resistant organisms: additional environmental cleaning procedures and precautions when transporting patients.
- C. difficile: additional cleaning must include a sporicidal agent due the cell structure of C. difficile.
- Vomiting or diarrhea: if there is frequent and copious body fluids, more frequent housekeeping may be necessary.



- Outbreak situations: more frequent cleaning may be part of the intervention.

Visitors:

Visitors should be taught the importance of hand hygiene.

Personal protective equipment is required only if a visitor is providing direct care.

Droplet Precautions

Droplet Precautions are used in addition to Routine Practices for patients known or suspected of having an infection that can be transmitted by large respiratory droplets (e.g. colds and influenza).

When you hear coughs and sneezes, think Droplet Precautions.

Droplet Transmission:

Droplet transmission occurs when droplets carrying an infectious agent exit the respiratory tract of a person.

Droplets can be generated through:

- Talking
- Coughing
- Singing
- Sneezing
- Through some procedures performed on the respiratory system (e.g. suctioning, bronchoscopy or nebulized therapies).

Recent research suggests that droplets forcibly expelled by a cough or sneeze travel for up to six feet/two metres or more, depending on the amount of air movement in the immediate vicinity. Two metres has been accepted by Health Canada as the guideline for distance for Droplet Precautions.

Microorganisms contained in these droplets are then deposited on surfaces in the patient's immediate environment and some microorganisms remain viable

for extended periods of time. Therefore close and high touch surfaces may be contaminated with respiratory droplets requiring Contact Precautions to be implemented along with the Droplet Precautions.

Examples of microorganisms transmitted by droplet transmission include:

- Respiratory tract viruses (e.g. adenovirus, influenza and parainfluenza viruses, rhinovirus, respiratory syncytial virus (RSV), pertussis).
- Rubella
- Mumps.

Accommodation: A single room with a dedicated toilet and patient sink is necessary. The door to the room may remain open.

In Long Term Care, residents should remain in their room/bed space, with privacy curtains drawn.

Personal Protective Equipment (PPE):

- Procedure mask and eye protection must be worn within six feet/two metres of the patient
- Gloves should be worn if there is uncontrolled secretions in the patient environment
- Gown should be worn if there is risk of contamination of skin or clothing.

Transport:

In most cases, transport should be limited unless required for diagnostic or therapeutic procedures. The patient must wear a procedure mask while out of their room. If the patient cannot tolerate wearing a mask, the escorting staff should wear a mask and eye protection. The patient must perform hand hygiene before leaving his/her room.

Cleaning:

Routine cleaning in the patient room is sufficient with additional attention to high touch surfaces and within six feet/two metres of the patient's bed space. Additional cleaning during outbreaks is necessary. Additional cleaning may be necessary if there is copious secretions contaminating the environment .



Visitors:

Visitors should be taught the importance of hand hygiene. A procedure mask should be worn by visitors within two metres of the patient. For paediatrics, the household contacts of the ill child do not need to wear PPE, as they will have already been exposed in the household.

Airborne Precautions

Airborne transmission occurs when small particles, which can remain suspended in the air, travel on air currents, and are then inhaled by others.

This exposure may also occur:

- In a different room or area depending on the air currents
- In the same room after the patient has left if there have not been sufficient air exchanges.

These particles can travel throughout the facility unless there are ventilation controls to remove them. If ventilation controls (negative pressure with direct ventilation to the outside of the building) are not available in the facility then N95 respirators are required by those entering the room.

Some microorganisms transmitted by the airborne route are:

- Mycobacterium tuberculosis (TB)
- Varicella virus (chicken pox virus)
- Measles (rubeola) virus.

Controls for preventing the transmission of airborne infections include:

- Immunity against measles and varicella
- Early identification of potential cases
- Prompt isolation in an airborne isolation room
- Rapid initiation of appropriate treatment the patient
- Appropriate use of a fit-tested, seal-checked N95 respirator for staff
- Identification and follow-up of exposed patients and staff.

Accommodation in Airborne Precautions:

A single room with door closed with negative pressure ventilation is required. This requires exhausting the air from the room directly to the outside of the building. The room door must to be closed for this to work effectively.

Personal Protective Equipment:

An N95 fitted respirator is the principal personal protective equipment in airborne precautions. Gowns, gloves and facial protection are not required unless the patient in airborne precautions has copious and uncontrolled secretions.

N95 Respirators:

- A fit-tested, seal-checked N95 respirator must be worn by all staff when entering the room, transporting or caring for a patient with signs and symptoms or a diagnosis of active tuberculosis.
- An N95 respirator must also be worn if a non-immune staff or staff of unknown immunity, enters the room of a patient having symptoms of, or diagnosed with, measles or varicella.
- After the patient is discharged, N95 respirator must continue to be worn in the room until sufficient air changes have occurred to purge the room of airborne infectants.

See Section 9: Personal Protective Equipment



Transport:

Patients on airborne precautions should remain in the negative pressure room with the door closed. If they need to leave the room for diagnostics or treatment they should wear a procedure mask and those around them providing transport or treatment should wear a fitted N95 respirator.

Patients should perform hand hygiene before leaving the room.

Cleaning:

Additional cleaning is not required unless there is contamination of the environment with secretions. Terminal cleaning must include sufficient air exchanges to purge the air in the room of any possible remaining airborne infectious particles.

Visitors:

For TB patients:

- Household contacts should be assessed for active tuberculosis prior to visiting the facility. An N95 respirator is not required, as they have already been exposed in the household.
- Visitors, other than household contacts, should be discouraged from visiting. If visiting, they should be counselled about their risk and must wear an N95 respirator with good fit characteristics. Instruction should be given on how to perform a seal-check.

For varicella and measles:

- Household contacts of patients with measles or varicella are not required to wear an N95 respirator when visiting, as they have already been exposed. They should be assessed for active infection prior to visiting. They should have limited contact with the rest of the facility when visiting.
- Visitors who are known to be immune do not need to wear an N95 respirator to visit.
- Non-household contacts that are not immune should not visit.

If a negative pressure room is not available, transfer the patient to a facility with appropriate accommodation as soon as medically feasible.

[See: CANADIAN TUBERCULOSIS STANDARDS 2013](#)

Combinations of Additional Precautions

Most infectious agents have a primary mode of transmission but may also have a secondary mode of transmission. Where more than one mode of transmission exists for a particular microorganism, the precautions used must take into consideration both modes.

Example of combined Additional Precautions:

- Respiratory viruses may remain viable for extended periods of time in droplet form. These droplets may have settled on surfaces in the immediate environment of the patient and may be picked up on the hands of other patients or staff. These microorganisms then may be transmitted by Contact as well as by Droplet transmission and, therefore, both Contact and Droplet Precautions are required.
- If both tuberculosis and a respiratory virus are suspected in a single individual, a combination of Airborne, Droplet and Contact Precautions should be used.

PROTECTIVE ENVIRONMENT PRECAUTIONS

Immunocompromised patients can be cared for using carefully followed Routine Practices. It is important that health care providers and others who are acutely ill with a communicable infection do not enter the room of immunocompromised patients.

Adapted from: [PIDAC- Routine Practices and Additional Precautions in All Health Care Settings November, 2012](#)

See:

- Communicable Disease Manual for details in the Infection Control and Occupational Health sections in specific disease sections.
- Community Health Nursing Program Standards and Protocols 2011, 10-003



Appendix A: Isolation Door signs to be developed



Appendix B: Symptom Table for Additional Precautions Considerations

Symptoms	Type of precaution	Infective material	Room	Actions and when caring for patient
Abscess or wound draining • MRSA	Contact	Drainage	Single	<ul style="list-style-type: none"> • Contain drainage • Good housekeeping • Gloves, hand hygiene • Gown if risk of contamination of clothes or skin
Acute diarrhea and/or vomiting If suspected infectious • Norovirus • C Difficile • E Coli • Salmonella	Contact	Stool, Vomit	Single	<ul style="list-style-type: none"> • Gloves, hand hygiene • Increase cleaning of surfaces • Dedicated toilet and/or commode • Diapering if incontinent • Dedicated equipment
Acute respiratory infection with fever, fatigue and muscle pain • Influenza	Contact Droplet	Sputum	Single	<ul style="list-style-type: none"> • Gloves, hand hygiene • Procedure mask • Careful disposal of tissues • 2 metre separation of patients
Bleeding • Hepatitis B • Hepatitis C • HIV	Contact	Blood		<ul style="list-style-type: none"> • Contain bleeding • Gloves, hand hygiene • Gown if risk of contaminating clothes or skin

Symptoms	Type of precaution	Infective material	Room	Actions and when caring for patient
Cough/sneeze (uncontrolled) • Coronavirus • RSV • Pertussis	Droplet Contact	Sputum	2 meter separation	<ul style="list-style-type: none"> • Hand hygiene • Respiratory etiquette • Careful disposal of tissues • If uncontrolled then wear a procedure mask
Cough/weight loss/fever • Tuberculosis	Airborne	Respiratory secretions	Single-with negative pressure	<ul style="list-style-type: none"> • Isolate from others • HCWs to wear fitted N95 • Patients to wear procedure mask when outside the room
Meningitis (suspected) and or sepsis with a petechial rash	Droplet	Sputum	Single	<ul style="list-style-type: none"> • Staff to wear procedure mask when within 2 metres/6 feet
Rash, vesicular with drainage • Shingles	Contact	Drainage	No restriction if drainage contained	<ul style="list-style-type: none"> • Cover rash if draining
Rash without fever	Contact	Excretions	No restriction	<ul style="list-style-type: none"> • Hand hygiene • Gloves
Rash with fever • Rubella • Rubeola • Chicken pox • Mumps	Droplet or Airborne	Respiratory secretions	Single-with negative pressure	<ul style="list-style-type: none"> • Check immunization history of HCW • HCW to wear correct PPE for category of Additional Precautions • If non-immune to MMR and varicella, HCW should not enter room; if HCW must enter room then wear N95

8. Healthy Health Care Workers

Adherence of health care workers to recommended infection prevention and control practices will decrease the transmission of infectious agents in health care settings. This will protect the health care provider, co-workers in the health care setting, patients, and visitors.

An occupational health program in a health care setting should include:

- Reinforcement of hand hygiene practices
- Pre-employment assessment for vaccination and immune history
- Ensuring immunity to standard vaccine preventable infectious diseases and tracking of these vaccinations/immunities
- Tuberculosis screening (pre-placement and routine screening)
- Annual influenza immunization
- Management of health care providers with infections
- Management of latex and other possible sensitivities
- Prevention of exposure to blood and body fluid exposure including a sharps safety guideline
- A post exposure follow-up process
- A respiratory protection program
- Training on selection and use of personal protective equipment and Additional Precautions
- Training and awareness of WHMIS
- Cleaning and disinfecting of medical equipment and healthy care facility.



All health care workers have a responsibility:

- to know their relevant immunization status (see below)
- to adhere to Routine Practices and Additional Precautions including appropriate and correct use of PPE and hand hygiene
- to use safe handling of sharps and
- to report exposures and symptoms that put themselves at risk for transmission of infections.

Staff who consume food or beverages in care areas (e.g. patient environment, nursing station, charting areas) are at increased risk for acquiring serious foodborne gastrointestinal infections. Outbreaks in institutions involving staff have been reported, particularly with hepatitis A, cryptosporidiosis and norovirus.

It is good practice to wash your hands before eating and drinking in the workplace to reduce the risk of infectious or other substance exposure.

Hierarchy of Controls:

The most effective forms of prevention are in this order where possible.

1. At the source: elimination of exposure: for example, keep contagious persons away from shared clinical areas
2. Along the path: interruption of transmission: for example, putting a procedure mask on a coughing/sneezing person
3. At the exposed: individual interruption of exposure: for example, N95 respirator for the caregiver of a patient with TB

Hazards from infectious waste and sharps

Infectious waste may contain microorganisms which may enter the body by various routes:

- Through a break in the skin (puncture, abrasion or cut)
- Through mucous membranes
- By inhalation
- By ingestion from contaminated hands

Personal protective equipment should be selected and worn depending on the route of transmission of the infectious organism.

Immunity and exposure history:

Recommended immunization for health care workers includes the following:

- Hepatitis B (for those at risk of exposure to blood or body fluids)
- Influenza (annually)
- Measles, mumps and rubella (MMR)
- Tetanus, diphtheria and polio and pertussis (Tdap)
- Varicella.



Health care worker immune status: The immune status should be considered when assigning a health care provider to a particular patient (e.g. rubella, mumps, varicella, and hepatitis B immunity.)

Hepatitis A: The National Advisory Committee on Immunization (NACI) does not recommend routine immunization of HCWs.

Hepatitis B: Recommended for all susceptible HCWs who may be exposed to blood or body fluids, or who may be at increased risk of sharps injuries or bites. The schedule is 3 doses of hepatitis B vaccine given at 0, 1 and 6 months intervals.

Post immunization serologic testing for anti-HBs should be conducted 1-6 months after the third dose to determine immunity. If the HCW has completed HB immunization more than 6 months ago, testing for anti-HBs should still be done.

If anti-HBs is >10 mIU/mL and documented at any time, repeat serology or re-immunization is not required.

If anti-HBs is <10 mIU/mL, administration of additional doses with testing for response after each dose should be undertaken.

Those who fail to respond to three additional doses of vaccine are not likely to benefit from further immunization.

Influenza: Annual vaccination for influenza is essential for all as the circulating virus changes each year.

Measles: Documentation of 2 doses of live measles virus vaccine on or after the 1st birthday or laboratory evidence of immunity to measles.

Note: The previously accepted assumption of immunity in HCWs born before 1970 is no longer valid, due to recent cases of measles in Ontario in persons born before 1970. While this is an acceptable assumption for the general public, it is not sufficient for HCWs.

Meningococcal disease: Meningococcal vaccine is not routinely recommended for most health care workers. It is recommended that laboratory personnel who are routinely exposed to preparations or cultures of *Neisseria*

Tuberculosis: Tuberculosis exposure history should be obtained at time of hire. HCWs whose tuberculin status is unknown and those previously identified as tuberculin negative require a baseline two-step Mantoux skin test (TST) unless they meet one of the following criteria, in which case a single step test may be administered:

- Documented results of a prior two-step mantoux skin test
- Documentation of a negative TST within the last 12 months OR

A history of BCG vaccine is not a contraindication to TB testing. HCWs who have had previous BCG vaccine may still be at risk of infection.

The local Medical Officer of Health can advise on the need for routine testing depending on the prevalence of tuberculosis in your community.

See:

- [Canadian Tuberculosis Standards 2013](#)
- [Nunavut Tuberculosis Manual](#)

Staff education/orientation:

1. Staff in a health care setting should receive education on when to stay home from work due to illness.

This includes:

- Febrile respiratory illness.
- Vomiting and/or diarrhea of infectious or unknown origin. Stay off work until 48 hours after last episode.
- Dermatitis on hands.
- Shingles (with lesions that can't be covered).
- Diagnosis of a contagious illness.

2. Staff should be educated on the appropriate personal protective equipment (PPE) available, how to decide what PPE is appropriate and how to use it effectively.

3. Staff should be educated on recognizing the need for and initiating Additional Precautions. They should also be aware of the reporting of specific infectious type symptoms in patients.

[See: Nunavut Communicable Disease Manual.](#)

4. Staff should be provided with information at the time of hire about vaccination and TB skin testing recommendations/requirements.

5. Staff should be aware of post exposure follow-up: protocols.



9. Personal Protective Equipment

In addition to hand hygiene, the following items are barriers for prevention of exposure to blood and body fluids:

- Gloves
- Gowns
- Respiratory protection
- Face/eye protection.

Gloves

Gloves are the most commonly worn personal protective equipment. Choose the type of glove based on the risks for which you are wearing them. Wear them when there is likely to be hand exposure to blood and body fluids.

Gloves must be worn when:

- Touching blood or body fluids
- Touching non-intact skin
- The health care provider has open lesions on their own hands
- Handling equipment that has been soiled with blood or body fluids.

Perform hand hygiene when putting on clean gloves and immediately after glove removal.

Putting on PPE:

- Gown, first
- Mask and eye protection, second
- Gloves, last



Gloves must be changed when:

- Moving from dirty to clean procedures on the same patient or patient environment
- After contact with large amounts of blood and body fluids
- Between patients.

Gloves are not required for routine patient care activities where contact is limited to a patient's intact skin.

Remove gloves promptly after use and dispose of them. Perform hand hygiene before touching clean items and environmental surfaces, before touching your eyes, nose and mouth, and before going on to another patient.

Disposable gloves should not be washed. Washing will cause them to leak.

Gowns

Putting on the gown is the first step in putting on PPE, putting mask and eye protection is the second step. Gloves are always put on last.

- Long sleeved gowns must be worn during procedures likely to generate splashes or sprays of blood or body fluids that could contaminate exposed skin or clothing.
- When a gown is worn, it should be removed immediately after completion of the patient care activity. Perform hand hygiene after gown removal to avoid transfer of organisms to patients, the environment, and yourself.
- Each gown should be worn only once.
- Disposable gowns are discarded into garbage container after each use immediately after finishing the task.
- Cloth gowns are laundered after each use.

Procedural Masks

Procedure masks with ear loops are the easiest to put on and remove. Put on masks after putting on the gown and eye protection.

- Masks are worn to protect the mucous membranes of your nose and mouth
- Masks should be worn within 2 metres (6 feet) of a coughing/sneezing patient
- Change your mask when it gets wet as it will no longer be an effective barrier
- Discard the used mask into garbage container
- Perform hand hygiene immediately after mask removal
- Masks are never to be worn dangling around one's neck

Eye Protection

Splashes and sprays can be generated from a patient's behaviour (e.g. coughing or sneezing) or during procedures (e.g. suctioning, wound irrigation, or cleaning soiled equipment).

Eye goggles or a face shield must be worn to protect the mucous membranes of your eyes, nose and mouth during these type of procedures.

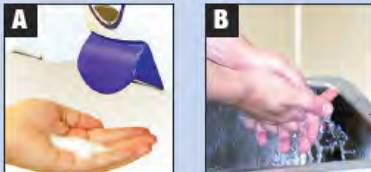
Choose eye protection that shields the eye from all directions. Prescription eyeglasses are not adequate protection. Goggles or face shields should fit over prescription glasses.

Eye goggles or a face shield must be worn whenever wearing an N95 mask.



Putting on (Donning) Personal Protective Equipment (PPE)

1 HAND HYGIENE



- A** Using an alcohol-based hand rub is the preferred way to **clean your hands**.
- B** If your hands look or feel dirty, soap and water must be used to wash your hands.

2 Gown



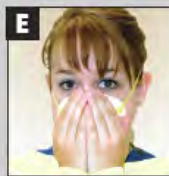
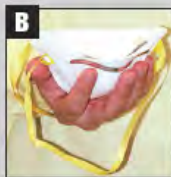
- A** Make sure the gown covers from neck to knees to wrist.
- B** Tie at the back of neck and waist.

3 Procedure/surgical mask

- ◆ Secure the ties or elastic bands around your head so the mask stays in place.
- ◆ Fit the movable band to the nose bridge. Fit snugly to your face and below chin.



N95 respirator



- A** Pre-stretch both top and bottom straps before placing the respirator on your face.
- B** Cup the N95 respirator in your hand.
- C** Position the N95 respirator under your chin with the nose piece up. Secure the elastic band around your head so the N95 respirator stays in place.
- D** Use both hands to mold the metal band of the N95 respirator around the bridge of your nose.
- E** Fit check the N95 respirator.

4 Eye protection or face shields



- ◆ Place over the face and eyes and adjust to fit.

5 Gloves



- ◆ Pull the cuffs of the gloves over the cuffs of the gown.



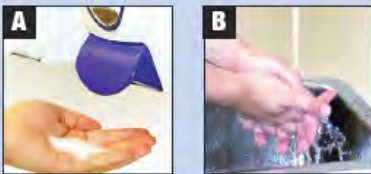
Taking off (Doffing) Personal Protective Equipment (PPE)

1 Gloves



- A** Grasp the outside edge of the glove near the wrist and peel away from the hand, turning the glove inside-out.
- ◆ Hold the glove in the opposite gloved hand.
- B** Slide an ungloved finger or thumb under the wrist of the remaining glove.
- C** Peel the glove off and over the first glove, making a bag for both gloves.
- ◆ Put the gloves in the garbage.

2 HAND HYGIENE



- A** Using an alcohol-based hand rub is the preferred way to **clean your hands**.
- B** If your hands look or feel dirty, soap and water must be used to wash your hands.

3 Gown



- A** Carefully unfasten ties.
- B** Grasp the outside of the gown at the back of the shoulders and pull the gown down over the arms.
- C** Turn the gown inside out during removal.
- ◆ Put in hamper or, if disposable, put in garbage.

4 HAND HYGIENE



- ◆ **Clean your hands.** (See No. 2)
- ◆ Exit the patient room, close the door and **clean your hands** again.

5 Eye protection or face shield



- ◆ Handle only by headband or ear pieces.
- ◆ Carefully pull away from face.
- ◆ Put reusable items in appropriate area for cleaning.
- ◆ Throw disposable items into garbage.

6 Mask or N95 respirator



- ◆ Bend forward slightly and carefully remove the mask from your face by touching only the ties or elastic bands.
- ◆ Start with the bottom tie, then remove the top tie.
- ◆ Throw the mask in the garbage.

7 HAND HYGIENE

- ◆ **Clean your hands.** (See No. 2)

Correct Sequence of Putting On and Removing Personal Protective Equipment

PUTTING ON personal Protective Equipment

1	 <p>Perform hand hygiene</p>
2	 <p>PUT ON gown</p>
3	 <p>PUT ON mask or N95 respirator</p>
4	 <p>PUT ON eye protection</p>
5	 <p>PUT ON gloves</p>

REMOVING personal Protective Equipment

1	 <p>REMOVE gloves</p>
2	 <p>REMOVE gown</p>
3	 <p>Perform hand hygiene</p>
4	 <p>REMOVE eye protection</p>
5	 <p>REMOVE mask or N95 respirator</p>
6	 <p>Perform hand hygiene</p>

Ordre correct dans lequel revêtir et retirer l'équipement de protection individuelle (EPI)
Iluqaqtumik Atilugu Mattaqlugu Inuup Aanniqtailidjutikhangit Atuqtaqhait







Revêtir l'EPI

Atilugu (PPE) Aanniqtailidjutikhangit ait

1	Se laver les mains Algakkit uaqattaqlugiik	
2	REVÊTIR la jaquette ATILUGU qaliqtaqhamik	
3	REVÊTIR le masque ou le respirateur N95 ATILUGU qannirmut mattu uvaluunnit N95	
4	REVÊTIR les lunettes de protection ATILUGIIK ilgaak	
5	REVÊTIR les gants ATILUGIIK algaak	

Retirer l'EPI

Mattaqlugu (PPE)
Aanniqtailidjutikhangit Atuqtaqhait

1	RETIRER les gants MATTAQLUGIIK algaak	
2	RETIRER la jaquette MATTAQLUTIT qaliqtaqhamik	
3	Se laver les mains Algakkit uaqattaqlugiik	
4	RETIRER les lunettes de protection MATTAQLUGIIK ilgaak	
5	RETIRER le masque ou le respirateur N95 MATTAQLUGU qannirmut mattu uvaluunnit N95 aannighaaktaut	
6	Se laver les mains Algakkit uaqattaqlugiik	

Appendix D:

Storage of Personal Protective Equipment

The storage area must be protected from damage. It must be neat, clean and free from fire hazards, dampness, rodents and insects.

Personal protective equipment (PPE) supplies must be stored in storage conditions which include:

- controlled temperature in the range of 15° to 30° C;
- relative humidity between 30% and 50%;
- equipment must be stored at least 15cm (6 inches) off the floor;
- equipment must not be piled closer than 3 ft. (91 cm or 36 inches) to any heat source or
- 18 inches (46 cm) from light fixtures and exterior walls; and
- Alcohol-based hand sanitizers should be kept away from fire or flame, including electrical outlets.

Recommended temperatures could vary if no temperature sensitive material is stored (e.g. gowns, face shields).

Special Requirements for Consideration

- The building and all service components must be kept in good operating condition to maintain satisfactory storage conditions.
- The storage area must be inspected periodically for any evidence of leakage, ground seepage, insect or rodent infestation, unauthorized removal of supplies and deterioration of any of the supplies.
- Rotate supplies, based on expiry dates, on a routine basis to prevent unnecessary wastage.



10. Respiratory Protection Program

In health care there are two main types of respiratory protection. The best choice depends on the risk assessment of the exposure.

Procedure mask:



Procedure masks are worn by health care workers as protective barriers in situations requiring Droplet Precautions or if there is risk of splashes or sprays to oral and nasal mucous membranes. Procedure masks are also used as a barrier in stopping the transmission of respiratory pathogens.

Procedure masks can be offered to people coming into the Health Care Centre with uncontrolled coughs and sneezes to reduce the risk of transmission to other people who come within 2 metres (6 feet).

N95 respirator:



The N95 respirator is worn for respiratory protection where Airborne Precautions are required.

A fit tested N95 respirator is required to protect the airways of the health care provider. It is intended to seal tightly to the face and filters small airborne particles that float in the air preventing them from being inhaled.

A fit tested N95 respirator should be worn by the health care workers when:

- The patient has a diagnosis or symptoms of an Airborne infection (e.g. tuberculosis, chickenpox, measles and herpes zoster)
- Performing aerosolizing procedures with a patient with a Droplet infection (e.g. open suctioning or nebulized medications)
- Directed by public health officials due to a new or emerging disease.

The N95 fit testing program must include:

- A health assessment – to ensure the HCW is able to tolerate wearing the respirator
- N95 respirator fit-testing - to ensure the proper respirator is determined
- Training – health care providers and other staff required to wear an N95 respirator must be educated regarding the proper way to perform a seal-check and to be aware that this is to be done each time she/he wears a N95 respirator.

Both the mask and the respirator are disposable and should never be worn around your neck.

The outside surface is contaminated once it has been used and when touched for removal.

A supply of N95 respirators in the models and sizes that the staff have been fit tested for must be available.

Discard used respirators into garbage container on leaving the Airborne Precaution area. Perform hand hygiene immediately after mask removal.

Seal-checking (also referred to as a 'fit-check') is a procedure that the health care provider must perform each time an N95 respirator is worn to ensure the respirator is placed on the their face correctly.

N95 respirator failure is usually due to poor fit and leakage around the face seal. Assuring a good fit through an approved fit-testing program and performing a seal-check each time a respirator is used are essential to ensure full protection.

Doing the Seal Check:

To do the seal check, the health care worker, after putting on the respirator and adjusting it, lays her hands gently on the surface of the respirator. When she breathes in and out there should be no air leakage felt around the respirator edges and the surface of the respirator should move slightly in and out with each inhalation and exhalation.

See: Community Health Nursing Administration Manual 2011, 10-005

[See: Canadian Tuberculosis Standards 2013](#)



11. Housekeeping and Laundry

Environmental cleaning is a very important part of infection prevention and control in a health facility. If housekeeping is not done systematically and regularly the health care setting can become a reservoir for infectious agents. Patients may spread microorganisms into the health care environment, particularly if they are coughing, sneezing or having vomiting or diarrhea. Bacteria and viruses may survive for weeks or months on surfaces in the environment of the patient. The purpose of environmental cleaning is to reduce the number and amount of microorganisms and therefore reduce the risk of infection to patients and staff.

As one of the essential components of infection prevention and control, environmental cleaning consists of:

- Routine cleaning and disinfection of the health facility using hospital grade cleaners
- Additional cleaning and disinfection of high touch surfaces and medical equipment and devices
- Ongoing education and training of environmental cleaning staff
- Auditing and feedback processes for quality assurance

Health care environmental cleaning principles must be included in all steps of the design and operation of the facility and the organization. This includes decision making about:

- Environmental surfaces and facilities during the design and renovation of health care settings
- Infection prevention and control requirements in the purchase of medical equipment and devices including purchase decisions regarding reusable items versus single use items.
- Staffing supplies and equipment to maintain the level of cleaning standards during routine conditions as well as enhanced cleaning needs during outbreaks e.g. influenza outbreak.



Hospital versus Hotel cleaning standards

Health care facilities may require two different levels of clean depending on what is happening in the area: hotel clean and hospital clean. Hospital clean (disinfected) is not achievable unless there has already been a hotel clean (tidy) established.

- Hotel component: applies to the area of the facility that is not involved in direct patient care, this may include public areas such as lobbies and waiting rooms, offices, corridors, elevators, stairwells, and service areas. These areas in a health facility usually do not require the same level of sanitation as the assessment, treatment and admission areas. However, in many community health facilities, it is recognized that various levels of patient care may occur in the same space and hence a higher level of cleaning needs to be carried out.
- Hospital component: this is the area of the facility that is involved in patient care. This includes patient units including nursing stations, procedure rooms, bathrooms, clinic rooms, and diagnostic, treatment and admission areas. Areas designated in the hospital component are cleaned with Hospital Clean detail.

Hotel Clean

- Floors and baseboards are free of stains, visible dust, spills and streaks
- Walls, ceilings and doors are free of visible dust, gross soil, streaks, and handprints
- All horizontal surfaces are free of visible dust or streaks (including furniture, window ledges, overhead lights, phones, picture frames, and carpets)
- Bathroom fixtures including toilets, sinks, tubs and showers are free of streaks, soil, stains and soap scum
- Mirrors and windows are free of dust and streaks
- Dispensers are free of dust, soiling and residue and replaced/restocked when empty
- Appliances are free of dust, soiling and stains
- Waste is disposed of appropriately
- Items that are broken, torn, cracked or malfunctioning are replaced

Hospital Clean is hotel clean plus...

- High-touch surfaces in patient care areas are cleaned and disinfected with a hospital-grade disinfectant (product has a DIN number)
- Medical equipment is cleaned and disinfected between patients
- Clean first and then disinfect: organic material de-activates disinfectant solutions
- Proper contact time: different products require varying 'wet' times to kill microorganisms
- Proper mixture: the concentration is strong enough to clean but not so strong to be harmful to staff and patients
- Frequent changes in cleaning equipment and solutions
- Use of the proper Personal Protective Equipment (PPE) to protect health care worker

'Hospital Clean' is important for both patient and staff safety.



Cleaning basics



There are three basic rules when cleaning a room or an area.

- 1** Work from the **highest point** in the room to the **lowest point** in the room. For example, environmental cleaning should start by cleaning any ceiling lights and fans, then move down to the objects closest to the floor.
- 2** Work from the **outside walls** of the room to the **center of the room**. For example, clean all the wall attached objects first before the horizontal objects such as counters and sinks. Then, finish up with items that come in contact with clients like chairs and exam tables.
- 3** Work from the **cleanest surfaces** in the room to the **dirtiest surfaces** in the **room**. For example, when cleaning a bathroom start cleaning the mirrors and lights switches, and then move onto cleaning the sink and finish up by cleaning the toilet and then the floor.

Cleaning Agents and Disinfectants

Cleaning is the removal of foreign material. This includes dust, soil, and organic material that may include blood, secretions and microorganisms. Cleaning physically removes rather than kills microorganisms, reducing the microorganism load on a surface.

Cleaning is accomplished with water, detergents and mechanical action. The key to cleaning is the use of friction to remove microorganisms and debris.

Routine cleaning is sufficient for most infectious organisms in a health care setting. More frequent cleaning may be required based on the risk assessment.

Thorough cleaning is required first for any equipment to be disinfected. Organic material may inactivate a disinfectant. Disinfection may be accomplished through a two-step process involving a cleaner followed by a disinfectant, but is more commonly accomplished in the health care setting through a one-step process using a combined cleaner/disinfectant product.

It is most important that a surface be free from visible soil and other substances that could interfere with the action of the disinfectant, before a disinfectant is applied e.g. adhesive products and body fluids. Most disinfectants lose their effectiveness rapidly in the presence of organic matter.

It is important that the selected disinfectant is:

- A hospital grade disinfectant with a DIN number (drug identification number)
- The manufacturer's instructions for dilution and contact time are followed.

Disinfection is a process used on inanimate objects and surfaces to kill microorganisms. Disinfection will kill most disease-causing microorganisms but may not kill all bacterial spores. Only sterilization will kill all forms of microbial life.

A hospital-grade disinfectant may be used for equipment that touches intact skin. Examples include intravenous pumps and poles, blood pressure cuffs, apnea monitors, electrocardiogram (ECG) machine/cables and crutches.



The contamination levels of the disinfectant solution and equipment used for cleaning can be minimized by:

- Starting the cleaning task by performing hand hygiene and wearing disposable gloves
- Ensuring proper mixing of the disinfectant
- Frequently changing the disinfectant solution
- Frequently changing the cleaning cloths, mop heads
- Not dipping a soiled cloth into the disinfectant solution (i.e. no 'double-dipping').

Disinfectant wipes can be used by the primary caregiver at point of care for quick disinfecting of patient equipment between patients. Disinfectant wipes should not be used as a routine cleaning/disinfectant product.

When using disinfectant wipes:

- The active ingredient must be an appropriate hospital-grade disinfectant
- Wipes must be used wet and discarded if they become dry
- Wipes must have an MSDS and be used according to the MSDS (e.g. wear gloves when handling)

Hospital Grade Disinfectants

Hospital grade disinfectants include:
Alcohols 60-90% ethyl or isopropyl alcohol
Chlorines Sodium hypochlorite (bleach) Calcium hypochlorite See Appendix A for mixing/dilution guidelines
Phenolics
Quaternary Ammonium Compounds (QUATS)
Iodophors
Accelerated Hydrogen Peroxides



CAUTION

Mixing different cleaners together may result in production of a dangerous solution or gas resulting in severe irritation to skin and lungs.

Frequency of Routine Cleaning

The frequency of cleaning and disinfecting individual items or surfaces in a particular area depends on:

- Whether surfaces are high-touch or low-touch
- The type of activity taking place in the area and the risk of infection (e.g. examining room vs. meeting room)
- The vulnerability of patients seen in the area
- If there is an outbreak in the facility or the surrounding community
- The amount of body fluid contamination surfaces in the area.

Storage of Cleaning Supplies and the Care of Utility Rooms

All chemical cleaning agents and disinfectants should be appropriately labeled and stored in a manner that eliminates risk of improper use, contamination, inhalation, skin contact or personal injury. Chemicals must be clearly labeled with Workplace Hazardous Materials Information System (WHMIS) information and a Material Safety Data Sheet (MSDS) must be readily available for each item in case of spills or over exposure.

[See: WHIS Information](#)

An automated dispensing system is helpful to ensure proper dilution and to eliminate the need for mixing of cleaning solutions. If transferring to another container, always use a clean, dry, appropriately sized bottle, label and date the product. The product should be discarded when past the expiry date for stability.

When choosing a tool for cleaning toilets, consideration should be given to equipment that will minimize splashing.

Do not top up bottles with cleaner, disinfectants or hand sanitizer as there is a risk of contamination of the solution.



General Cleaning Practices for All Health Care Settings

<p>Before Cleaning</p>	<ul style="list-style-type: none"> • Check for Additional Precautions signs. Follow precautions as indicated. • Remove clutter before cleaning. • Follow the manufacturer’s instructions for proper mixing and required contact time for disinfectant solutions. • Gather materials required for cleaning before entering the room. • Clean hands on entering the room.
<p>During Cleaning</p>	<ul style="list-style-type: none"> • Progress from the least soiled areas (low-touch) to the most soiled areas (high-touch) and from high surfaces to low surfaces. • Remove gross soil prior to cleaning and disinfection. • Dry mopping is done before damp mopping. • Minimize turbulence to prevent the mobilization of dust that may contain microorganisms. • Never shake mops inside to minimize dust/dirt in air. Ideally remove large pieces of dust and dirt with gloved hands then remove mop head to be laundered. • Do not “double-dip” cloths. • Change cloths/mop heads frequently. • Change cleaning solutions as per manufacturer’s instructions. Change more frequently in heavily contaminated areas, when visibly soiled and immediately after cleaning a blood and body fluid spill. • Containers for liquid soap and cleaners/disinfectants are disposable. The practice of ‘topping up’ is not acceptable as it can result in contamination of the container and solution. • Vacuum carpets using vacuums fitted with a HEPA filter. Maintain the filter according to the manufacturer’s instructions. • Be alert for needles and other sharp items. Pick up sharps using a mechanical device (if possible) such as tongs and place into sharps container. Report such incidents to the supervisor. • Collect plastic waste bags handling them from the top and do not compress. • Perform hand hygiene before putting on a clean pair of disposable gloves. • Change gloves frequently including when leaving a room or area. • Avoid spraying cleaning solutions onto a surface to reduce exposure to aerosolized cleaning chemical. Spray directly onto cleaning cloth instead.



After Cleaning	<ul style="list-style-type: none"> • Do not overstock rooms with supplies such as toilet paper and paper towels. • Equipment used for cleaning/disinfecting must be cleaned and dried between uses. • Launder mop heads daily with all washed mops heads being dried thoroughly in dryer before re-using. • Clean the housekeeping cart as well as the carts used to transport waste daily.
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Laundry

All linen that is soiled with blood, body fluids, or secretions should be handled using the same precautions as other linen regardless of source or health care setting.

Laundry Practices

See Laundry Procedure for further details on laundering patient linens (bedding and towels) and environmental cleaning equipment such as mop heads.

Laundry Staff Protection

Protection of staff handling laundry includes:

- Training for all health care providers and laundry staff in the procedures for handling of soiled linen that includes IPAC and WHMIS training
- Hand washing sink and alcohol hand sanitizer that is readily available in laundry areas
- The provision of appropriate personal protective equipment, (e.g. gloves, gowns and, face protection) to provide protection when handling heavily soiled linen
- Hand hygiene whenever gloves are changed or removed
- Disposal of sharps at point-of-use to ensure that there are no residual sharps in linen; laundry staff are at risk of injury from contaminated sharps, instruments or broken glass that may be accidentally in the laundry bags
- Immunization of laundry staff against hepatitis B due to the high risk of sharps injury and blood and body fluid exposure.



Appendix A: Preparing Household Bleach As a Disinfectant

The solution must be made fresh daily to preserve strength.

Standard household bleach solution ranges from 5% to 6% sodium hypochlorite solution (50,000 ppm available chlorine).

When to be used	Level required	Examples of mixing bleach solution
<p>Semi critical items: Items that may accidentally penetrate skin and come in contact with blood or body fluids.</p> <ul style="list-style-type: none"> • Blood, feces, body fluids and some items that may contact sterile items <p>Surface must be cleaned before disinfection.</p> <p>Contact time > 10 minutes</p>	<p>High-level Disinfection</p> <p>1:10 dilution of bleach</p> <p>5000 ppm</p> <p>1 part bleach to 9 parts water</p>	<p>50 ml bleach with 450 ml water</p> <p>or</p> <p>¼ cup bleach with 2¼ cups water</p>
<p>Semi critical items: Use on semi critical items that may accidentally penetrate skin and come into contact with blood and body fluids.</p> <ul style="list-style-type: none"> • manicure/pedicure items, foot tubs <p>Contact time > 10 minutes</p>	<p>Intermediate-Level Disinfection</p> <p>1:50 dilution of bleach</p> <p>1000 ppm</p> <p>1 part bleach to 49 parts water</p>	<p>10 ml bleach with 490 ml water</p> <p>or</p> <p>2 tsp. bleach with 2 cups water</p>
<p>Semi critical items: Use for semi critical items that may come in contact with mucous membranes.</p> <ul style="list-style-type: none"> • Toys <p>Contact time > 2 minutes</p>	<p>Intermediate-Level Disinfection</p> <p>1:100 dilution of bleach</p> <p>500 ppm</p> <p>1 part bleach to 99 parts water</p>	<p>80 ml with 8 litres of water</p> <p>or</p> <p>1/3 of a cup with 2 gallons of water</p>

When to be used	Level required	Examples of mixing bleach solution
Non critical items: • Laundry, mop heads and cleaning clothes Contact time: Full wash cycle	Low-Level Disinfection 1:100 dilution of bleach 500 ppm 1 part bleach to 99 parts water	80 ml with 8 litres of water Or 1/3 of a cup with 2 gallons of water
Non critical items and contact surfaces; • Combs, brushes, floors Items that come in contact but do not penetrate intact skin or those that do not ordinarily touch the patient.	Low-Level Disinfection 1:500 dilution of bleach 100 ppm 1 part bleach to 499 parts water	5 ml bleach with 2½ litres water or 1 tsp bleach with 10 cups water

Bleach concentration calculator: By entering the necessary numbers, the calculator below will give you the amount of bleach to add to water to achieve the concentration recommended for the disinfection task to be accomplished.

[See: Bleach Calculator](#)

To use the bleach calculator enter the:

1. Volume of solution required
2. Desired concentration of sodium hypochlorite
3. Concentration of bleach solution being used (found on the label of the bleach product)
4. Press “enter”

Adapted from:
 APIC Guidelines for Selection and use of Disinfectants
 Public Health Ontario



12. Safe Handling of Sharps

Safe handling of sharps reduces the risk of exposure to bloodborne pathogens.

Equipment that is capable of breaking the skin should be purchased incorporating a safety engineered design where possible. This safety engineered equipment is designed with mechanisms to reduce the risk of the user being injured during its use.

Approved sharps disposal containers must be readily available and accessible in all point-of-use areas. Safe placement of the sharps container is important in all health care settings.

Choose containers that are designed to make one handed disposal possible and easy. Dispose of sharps immediately after use in a clearly labeled, sharps disposal container. The person using the sharp instrument or device is responsible for its safe disposal.

Fill containers only to $\frac{3}{4}$ full, close the lid securely for disposal. Replace the used container with a new empty one.

The container should have a tightly fitting lid that seals and prevents leakage. This reduces risk to you, other health care providers, patients and others in the environment (e.g. waste disposal handlers).

Used sharps are considered biomedical waste. Dispose of used sharps containers in accordance with regulations from municipal and territorial authorities. The Community Health Centre may receive sharps containers from community members who have needles to dispose of at home (e.g. diabetics, and palliative care clients).

Needles and Syringes:

Follow Routine Practices, wear gloves:

- Do not remove needles from syringes or other devices; always dispose of them as a single unit.
- Do not recap needles prior to disposal. Most needle stick injuries occur during recapping.
- Do not bend or break needles after use.
- Discard needles and syringes directly into a sharps container immediately after use.
- Do not leave a sharp protruding from the sharps container.



- Do not pour any disinfectants into the sharps container.
- Scalpels must be left intact and discarded directly into the sharps container.
- Discard disposable razors directly into sharps container.
- Pick up and discard broken contaminated glass into the sharps container using forceps.

Home care: Never uncap a needle or sharp unless you know where you will dispose of it immediately after use. Always carry a small sharps container with you. For home care, follow municipal regulations for disposal.

Ensure the safety of waste handlers by only disposing of sharps in sealed puncture resistant containers.

See: [Ontario Safety Association for Community and Health Care website](#)

See:

- Community Health Nursing Standards, Policies and Guidelines 2011,10-009
- (Proposed) Occupational Health and Safety Regulations, WSCC Nunavut 2012 Volume 3 Part 31
- Housekeeping procedure for Handling and Disposal of Sharps



13. Biomedical Waste

Medical waste: refers to material generated as a result of the diagnosis or treatment of a patient, such as intravenous tubing or soiled dressings. These can be disposed of in regular waste.

Biomedical waste: Refers to a portion of the medical waste that requires special precautions due to the waste being:

- Infectious- anything grossly contaminated with blood or body fluids (i.e. dripping)
- Sharps- used needles, scalpels
- Cytotoxic- material used in chemotherapy
- Sensitive- due to the nature of the waste (i.e. human body parts).

Biomedical waste should be segregated from all other waste and handled with containment and storage requirements to prevent the exposure of possible infectants to patients and the health care workers.

Procedures for handling and disposal of biomedical waste will vary from community to community depending on availability of facilities. In all areas health care generated waste needs to be handled with caution and understanding of the risk of infection.

The handling and disposal of these items need special consideration due to their possible increased risk of both occupational and infectious exposure.

Waste handlers at all stages of disposal (including health care providers) should always be appropriately clothed and wear personal protective equipment so that harmful agents are prevented from contaminating skin or clothes, gaining access to open wounds, cuts or transmission through the skin.



14. Handling Laboratory Specimens

All clinical specimens are considered potentially infectious and must be handled carefully to prevent contamination. Consequently, there is no need to use "Caution" labels on specimens from patients with known infections.

The accuracy of the results depends on care in collecting and transporting the specimen to the lab. The quality of the results influences the diagnosis and treatment and therefore the clinical outcome.

The risk of the health care worker being exposed to an infectious agent or contaminating the health care environment depends on maintaining continuous infection control practices.

Collecting specimens

1. Gather personal protective equipment –depending on symptoms and history of the patient:

- Gloves- when handling any body fluids or risk of contaminating hands
- Masks/respirators- if respiratory symptoms or initiating a cough from the patient with specimen collection, aerosolized excretions, risk of splash or spray
- Goggles- if risk of splash or spray to eyes

2. Care should be taken when collecting and handling specimens to avoid contamination of the outside of the container.

3. Secure lids tightly to prevent leakage.

4. Place the specimen(s) into a plastic, zip-lock type bag. Requisition should be outside the pouch that the specimen is shipped in.

5. Hand hygiene must be performed following any direct contact with blood or body fluids, after the handling or transporting of laboratory specimens and after glove removal.

If airborne spread disease is suspected specimens should be collected in a negative pressure room, if available (e.g. TB). If there is no negative pressure room then a room with good air circulation or outdoors may be the best alternative. The collector of sputum for TB testing should wear an N95 respirator or separate themselves from the area where the person is providing the sputum specimen.



Even if the patient has a controlled or non-productive cough, the irritation of having a nasopharyngeal swab done could bring on a deeper, productive cough, increasing the risk of contamination of the person taking the swab. Respiratory protection should be worn.

Make sure you are aware of correct collection method, container (with or without stabilizing solution), storage and transportation so that the specimen will provide the most accurate results in which to base diagnosis and treatment decisions.

Handling specimens

1. Always wear gloves and any other indicated barrier protection when collecting and handling laboratory specimens.
2. Place each laboratory specimen in an appropriate leak-proof primary container (e.g. vacutainer tube, specimen cup, etc.). Care should be taken when collecting and handling specimens to avoid contamination of the outside of the container.
3. Insert the requisition slip(s) into the outside pocket of the bag.
4. Seal the bag before transporting it to the laboratory.
5. If specimens require refrigeration, they should be stored in a separate fridge from vaccines, medication and food items.

See :

- [Canadian Tuberculosis Standards, 7th edition](#)

15. Reprocessing of Medical Equipment: Cleaning, Disinfecting and Sterilizing

Routine Practices in reprocessing areas include:

- No eating/drinking, storage of food, smoking, application of cosmetics and handling contact lenses
- No storage of personal effects, including food and drink
- Hand hygiene facilities located at entrances of the reprocessing areas
- Hand hygiene training of staff
- No hand and arm jewelry or nail enhancements are to be worn
- Personal protective equipment to be available and education provided about selection and use of this equipment.

Hand hygiene to be done:

- Before beginning a task
- Before breaks
- Upon completion of work
- After going to the toilet, blowing nose and other personal body functions
- After removing gloves
- Whenever hands are contaminated with body fluids.



or



Soiling of the hands = Use soap and water

No visible soiling of hands = soap and water or
alcohol hand sanitizing

The Safe and Healthy Worker in Reprocessing Area

All staff working in reprocessing should be immune to Hepatitis B.

Personal protective equipment should be worn during cleaning and reprocessing of medical equipment due to the risk of blood and body fluid exposure. If a worker experiences an exposure, that is, a break in her skin or a splash to her face while reprocessing medical equipment, report immediately and be assessed by a clinician.

For Your Safety:

- Know manufacturer's recommendations for cleaning of equipment
- Know the manufacturer's recommendations for storage, dilution, use and disposal of the products
- Only use disinfectants with a DIN (Drug Identification Number) which indicates approval for use in Canada
- Have the Material Safety Data Sheets (MSDS) available for the products used and know where the information is on these sheets
- Use the recommended personal protective equipment

Basic Principles

Procedures for cleaning medical equipment shall be based on the manufacturer's instructions and must include the principles of Infection Prevention and Control, Occupational Health and Safety, Biomedical Engineering and Environmental Services.

Cleaning is always essential prior to disinfection or sterilization.
An item that is not clean cannot be disinfected or sterilized.

Gross soil (e.g. feces, sputum, blood) must be removed immediately at point-of-use, before transport to reprocessing area. Once the medical equipment has been received in the reprocessing area, it must be sorted and soaked.

A dedicated area for reprocessing is necessary. The layout of this area should facilitate the flow of clean to sterile without risk of recontamination of equipment. This one way workflow ensures that the work flows in “clean” direction. Each level of reprocessing (including cleaning, disinfection and sterilization) reduces the microbial load on the medical equipment being reprocessing.

Single use equipment is not designed for cleaning and reprocessing. It is designed for one use only and then disposal.

Factors Affecting the Reprocessing Procedure

Many factors affect reprocessing, especially when chemical reprocessing is used.

These factors include:

- Cleanliness of the surface of the equipment:
 - the greater the bio-burden, the more difficult it is to disinfect or sterilize the equipment
- Characteristics of equipment/device:
 - long, narrow lumens and channels are difficult to clean
 - rough or porous surfaces may trap microorganisms
- Type and concentration of the product:
 - products used for disinfection must be mixed according to the manufacturer’s recommendations.
 - dry the equipment after cleaning, before immersing in disinfectant, to prevent dilution of the disinfectant solution.



- check the expiry date before use and discard the solutions on or before expiry date; diluted products are unstable once mixed.
- follow the manufacturer's directions for duration of use.
- use chemical test strips for all high-level liquid disinfectants to assess their strength. During reuse the concentration of active ingredients may decrease as dilution of the product occurs and organic material accumulates.
- use the appropriate disinfectant for the task. Some microorganisms are more resistant to disinfection than others, this must be taken into consideration when choosing the product and the process.
- if the concentration of the disinfectant is too low, it will not achieve the level of disinfection required.
- Duration and temperature of exposure to the product:
 - use manufacturer's recommendations for temperature and exposure time that is required to achieve the desired level of disinfection/sterilization.
- Physical and chemical properties of the reprocessing environment:
 - water hardness can affect some disinfectants, use distilled water.

If the concentration is too high, it increases the risk of damage to the equipment and toxic effects on the technician.

Disinfection of Reusable Medical Equipment (see Appendix C)

Disinfection is the inactivation of disease-producing microorganisms. Disinfection does not destroy bacterial spores (e.g. *C. difficile*).

Disinfection of medical equipment falls into two major categories :

- Low-level disinfection
- High-level disinfection

The level depends on the purpose and use of the equipment.

See Spaulding Classification Appendix B for further details on categories.

Low-Level Disinfection (LLD)

Low-level disinfection eliminates bacteria, some fungi and enveloped viruses. LLD is used for non-critical medical equipment and some environmental surfaces.

The Non-Critical category of equipment includes equipment that touches only intact skin and not mucous membranes or does not directly touch the patient. Examples include commodes, blood pressure cuffs, exam tables and counters.

LLD is performed after the equipment is thoroughly cleaned, rinsed and is dry. Some cleaning products used in health facilities combine cleaning and disinfecting in one solution and thus reduces this to a one-step cleaning/disinfecting method. Virex 256 is one of these cleaner/disinfectant solutions.

The container used for disinfection must be washed, rinsed and dried when the solution is changed.



Non-critical medical equipment requires decontamination using a low-level disinfectant.

High-Level Disinfection (HLD)

High-level disinfection eliminates bacteria, enveloped and non-enveloped viruses, fungi, and mycobacteria (e.g. tuberculosis).

HLD is used for semi-critical medical equipment. This includes equipment that come in contact with non-intact skin or mucous membranes but do not penetrate them. Semi-critical medical equipment require decontamination using, at a minimum, high-level disinfection.

High level disinfectants use products that include one of these following:

- 2% glutaraldehyde,
- 6% hydrogen peroxide
- 0.2% peracetic acid
- 7% accelerated hydrogen peroxide
- 0.55% ortho-phthalaldehyde (OPA).

HLD is performed after the equipment is thoroughly cleaned, rinsed and dried.

**Sterilization is the preferred method of equipment decontamination.
Some equipment (i.e. scopes) cannot be autoclaved
so need high level disinfection.**

Liquid Chemical High Level Disinfection

When selecting a disinfectant for reprocessing medical equipment in the health care setting consider the following:

- Has a Drug Identification Number (DIN) from Health Canada
- Achieves the desired purpose
- Compatible with the equipment and surfaces to be disinfected
- Compatible with detergents, cleaning agents and disinfection and/or sterilization processes
- Intended use of the equipment after disinfection (see Spaulding Criteria Appendix B)
- Monitoring method of the product concentration/dilution
- Rinsing recommendations for rinsing (e.g. water quality, volume, time)
- Correct use of PPE
- Disposal, environmental safety and biodegradability.

The manufacturer's recommendations for chemical disinfectants must be followed.

Products must have a stated:

- Contact time
- Shelf life
- Storage instruction
- Appropriate dilution
- Required PPE

The process of high-level disinfection requires:

- Chemical test strips be used to determine whether an effective concentration of active ingredients is present, especially after repeated use
- Prepared solutions not be topped up with fresh solution
- For manual disinfection the container used for disinfection must be kept covered during use and washed, rinsed and dried when the solution is changed
- Rinsing of medical equipment following chemical disinfection needs three separate rinses of sterile water. The rinse solutions must be changed after each process.



Scopes are critical medical equipment. They require high level disinfection. This is done using specialized equipment and procedures.

Sterilization

Sterilization is the destruction of all disease-producing microorganisms including bacteria, viruses, spores and fungi (e.g. Clostridium and Bacillus species) and prions. Sterilization is used on critical medical equipment and, where possible, semi-critical medical equipment.



For equipment that cannot withstand heat sterilization chemical sterilants can be used. However to achieve chemical sterilization, the concentrations of chemical and time of exposure must meet standards.

Steam Sterilization (Autoclaving) is the preferred method of decontamination for semi-critical medical equipment.

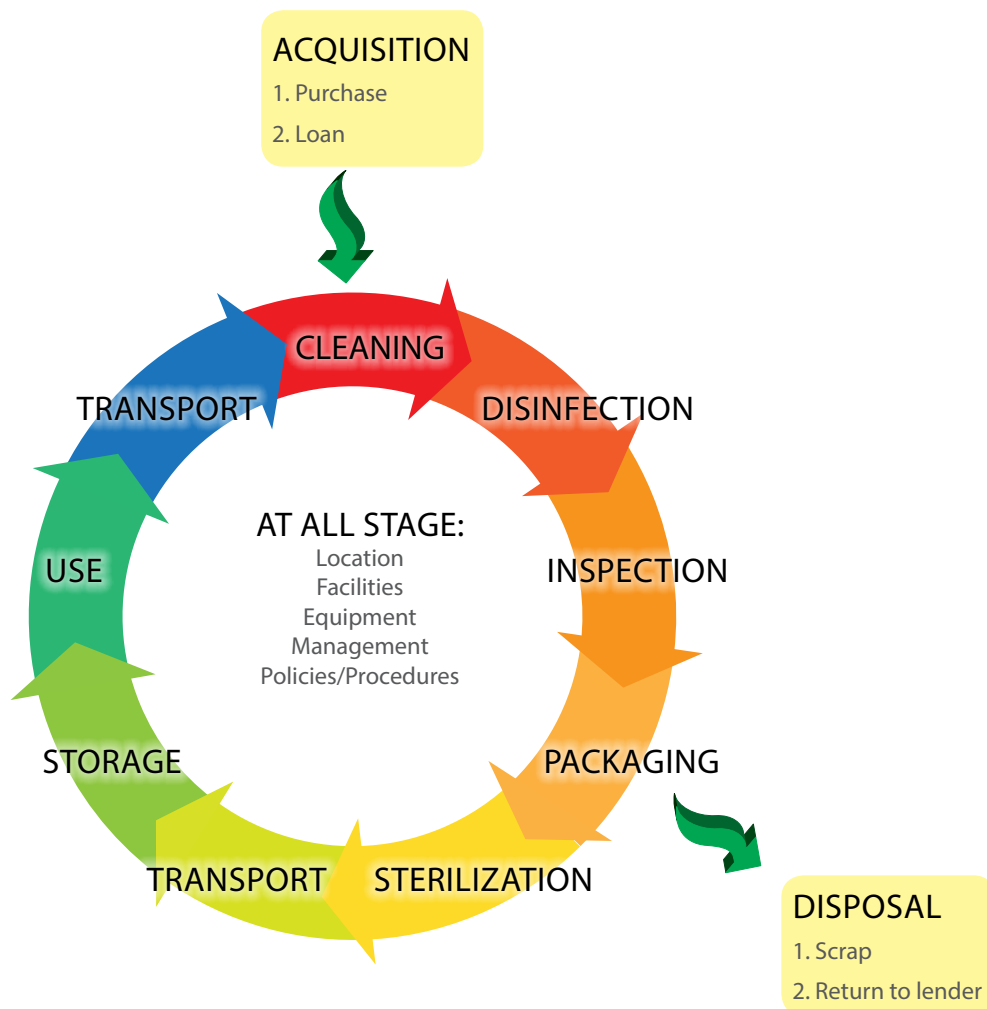
The Sterilization Cycle for Medical Equipment: (See Appendix D)

Medical equipment that has contact with sterile body tissues or fluids are considered critical items. All critical medical equipment must be sterilized.

Microbial contamination on critical equipment could result in transmission of severe disease.

Critical items include suture instruments, foot care equipment, biopsy forceps, ophthalmology equipment and dental equipment.

Steps in reprocessing critical medical equipment:



Steps to Sterilization:

1. Pre-Cleaning

Gross soil (e.g. feces, sputum, and blood) must be removed immediately at point-of-use. If cleaning cannot be done immediately, the medical equipment must be submerged in tepid water and detergent or enzymatic cleaner (e.g. Empower) to prevent any organic matter from drying. Soaking in bleach solution may damage the finish on the equipment.

Consider factors that affect the ability to clean medical equipment prior to cleaning.

a) Disassembly - if the instruments have parts, disassembly allows for the cleaning agent, disinfectant and/or sterilant to come in contact with all surfaces of the device.

b) Sorting – segregation of sharps and delicate equipment prevents injury to personnel and damage to the equipment.

c) Soaking – prevents soil from drying on equipment and makes it easier to clean. (Empower is in stock in warehouse, see stores list Appendix E).

2. Cleaning



Scrub with solution **with** stiff bristle brush → then wipe dry

The following procedures are included in the cleaning process:

a) Physical Removal of Organic Materials

- Completely submerge items that will tolerate fluids during the cleaning process to minimize aerosolization of microorganisms and assist in cleaning

- Remove gross soil using tools such as a wire bristle brushes and lint-free cloths

b) Manual Cleaning

- Clean equipment that have lumens with a brush, according to the manufacturer's instructions, then flush with a detergent solution (Empower) and rinse with water
- Use wire bristle brush to manually clean surfaces, hinges and tight spots

c) Care of Cleaning Tools

- Inspect brushes and other cleaning equipment for damage after each use
- Clean, disinfect, dry and store tools used to assist in cleaning (e.g. brushes, cloths)

d) Rinsing

- Rinse all equipment thoroughly after cleaning with water to remove residues
- Perform the final rinse for equipment containing lumens with commercially prepared sterile water

Rinsing following cleaning is necessary, as residual detergent may neutralize the disinfectant.

e) Drying

- Equipment may be air dried or dried by hand with a clean, lint-free towel
- Dry stainless steel equipment immediately after rinsing to prevent spotting

Drying is an important step that prevents dilution of chemical disinfectants.



3. Post Cleaning

Equipment which receives high-level disinfection should also be labeled, tagged or colour-coded to indicate that it has been reprocessed. Steam sterilized items may be identified using chemical indicators (CIs), such as autoclave tape, which changes colour during sterilization.

Keep cleaned equipment separate from dirty equipment to avoid recontamination and mixing up of instruments.

Wrapping/Packaging

Equipment that is to be sterilized requires wrapping prior to sterilization.

- Materials used for wrapping must be prepared in a manner that will allow adequate air removal, steam penetration and evacuation to all surfaces. Wrapping material must be the steri-peel pouch or blue wrap.

- Each package to be steam sterilized should include an indicator strip inside the pack and closed with autoclave tape (if blue wrapped) and heat sealed (if in a pouch).

Note the colour change with the indicator after autoclaving in the picture below.



See CSA Z314.3-09, 'Effective Sterilization in Health Care Facilities by the Steam Process' for information on packaging materials, containers and methods.

4. Sterilization

Autoclaving time and settings must be based on specifications for the autoclave that is being used. This time and temperature must be achieved to properly sterilize the equipment.

Steam sterilization must be done with distilled water. This controls mineral build up in the autoclave which will affect the function and reduce the lifespan of the machine.

Correct Preparation + Correct Time + Correct Temperature
= Effective Sterilization

5. Post steam sterilization and storage

Handling of the packages after sterilization include:

- Allow packages to dry so no moisture is visible on the outside, before removing from the autoclave and storing
- Check to make sure that the colour changes have occurred on the interior indicator strip and the indicator on the outside of the package

Sterilized packages must be transported in a way to prevent contamination i.e.: dry, clean and with no break in the wrapping.

Before



After



6. Maintaining Sterility

Maintaining the sterility of medical equipment until point of use is the purpose of the sterile process. This includes:

- Medical equipment purchased as sterile must be used before the expiration date
- Sterile packages that lose their integrity must be re-sterilized prior to use (i.e. soiled, wrapping broken, or seal broken)

Storage Areas

The area for storage of sterile equipment should be located adjacent to the sterilization processing area, preferably in a separate, enclosed, and with limited access area.

Requirements for this area include:

- Containers used for storage of equipment should be moisture-resistant and cleanable (i.e. cardboard boxes must not be used)
- Equipment is stored in a clean, dry, and dust-free area--not at floor level, and at least one meter away from debris, drains, and moisture to prevent contamination
- Equipment is stored in an area where they are not subject to tampering by either humans or vermin
- Equipment is handled and transported in a manner that avoids contamination or damage to the equipment
- Supplies and materials not used for reprocessing must not be stored in sterile processing areas.

Unacceptable Methods of Disinfection/Sterilization

The following methods of disinfection/sterilization are not recommended:

- Boiling
- Ultraviolet light
- Glass bead sterilization
- Microwave ovens
- Chemiclave

7. Using Sterilized Equipment

At point-of-use, upon opening the packaging and the equipment, must be checked for:

- Absence of change in colour of tape on outside of package and absence of change in colour on the internal indicator strip
- Discolouration or soiling on equipment that would indicate inadequate cleaning before sterilization
- Defective equipment
- Moisture on packaging or equipment.

If any of the above points, the equipment needs to be removed from service and reprocessed or replaced.

Quality Assurance

Reprocessing practice audits should be done to assure sterilization:

- Cleaning processes must be audited on a regular basis
- A quality improvement process must be in place to deal with any irregularities and concerns resulting from the audit.



References:

• [Best Practices for Cleaning, Disinfection and Sterilization in All Health Care Settings, Provincial infectious Diseases Advisory Committee \(PIDAC\), Ministry of Health and Long Term Care, Ontario May 2013](#)

Community Health Nursing Standards, Policies and Guidelines 2011 10-008

Applicable Canadian Standards Association :

CSA Z314.3-09 Effective Sterilization in Health Care Facilities by the Steam Process

CSA Z314.8-08 Decontamination of Reusable Medical Devices

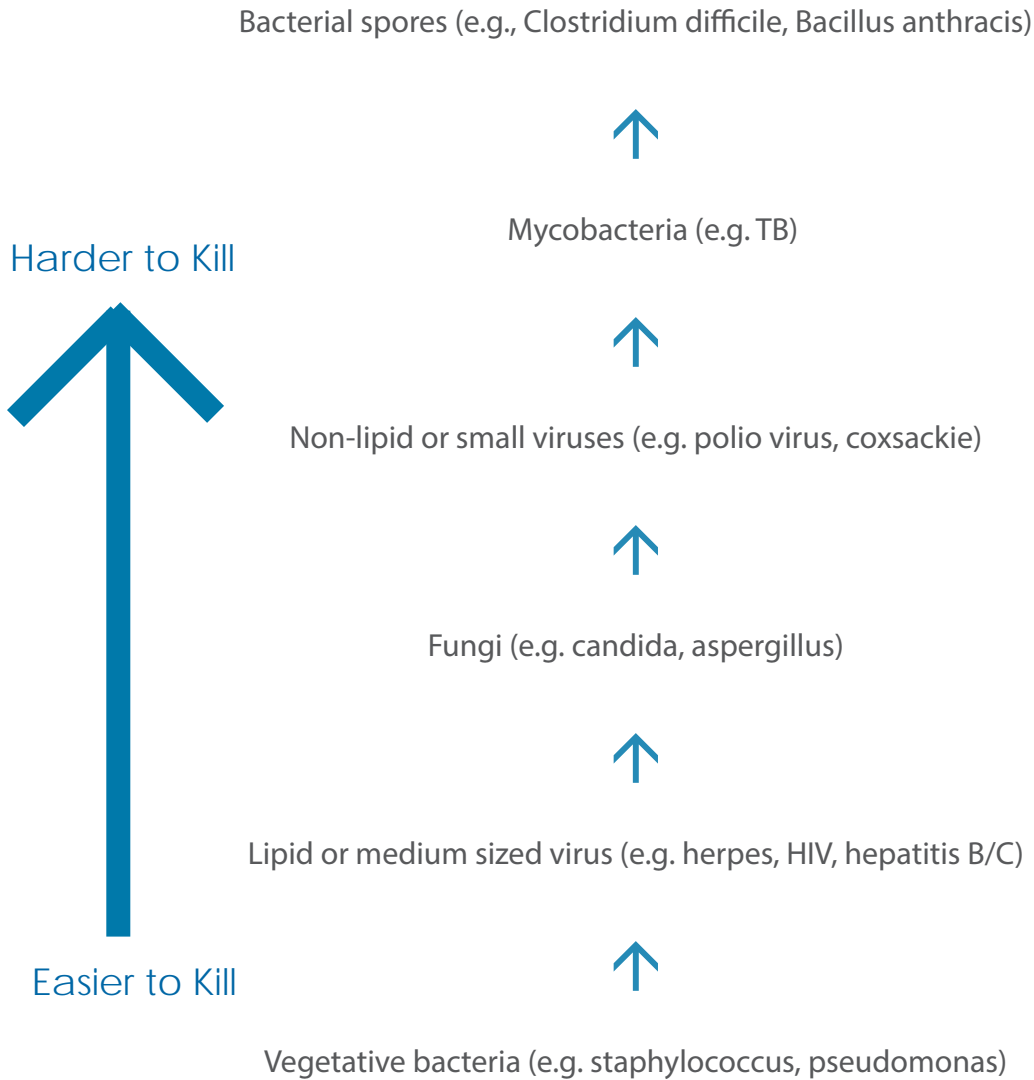


Scope cleaning Section : To be added at a later date



Appendix A:

Microbes in Order of Increasing Resistance to Disinfection and Sterilization



Appendix B:

Spaulding's Classification for Medical Equipment and Required Level of Processing/Reprocessing

The classification system developed by Spaulding divides medical equipment into three categories, based on the potential risk of infection involved in its use:

Classification	Definition	Level of Processing	Examples
Critical equipment	<ul style="list-style-type: none"> Equipment that enters sterile tissues, including the vascular system 	Cleaning followed by sterilization	Suture & surgical instruments Biopsy instruments Foot care equipment
Semi critical equipment	<ul style="list-style-type: none"> Equipment that comes in contact with non-intact skin or mucous membranes but does not penetrate them 	Cleaning followed by high level disinfection (as a minimum) Sterilization preferred	Respiratory therapy equipment Anesthesia equipment
Non-critical equipment	<ul style="list-style-type: none"> Equipment that touches only intact skin and not mucous membranes Equipment that does not directly touch the patient 	Cleaning followed by low level disinfection In some cases, cleaning alone is acceptable	ECG machine Blood pressure cuffs Oximeter Bedpans, urinals, commodes

Appendix C

High Level Disinfection of Medical Equipment



PURPOSE:

To provide safe equipment for re-use through disinfection

MATERIALS:

- Disposable gloves
- Enzymatic detergent (Empower)
- Disinfectant solution (Metricide 28)
- Lint-free towels
- Basins for soaking

If needed:

- Face shield
- Gown

CLEANING STEPS

1



Do a Risk Assessment

- Determine risk of exposure to germs and the Personal Protective Equipment (PPE) required for the task
- Wear the correct PPE to safely do the job

2



Soak immediately after use:

- Immerse immediately in soapy water or enzymatic detergent (Empower)

3



Clean

- Scrub all surfaces with steel bristle brush
- Use enzymatic detergent
- Check all sides for blood

4



Rinse with tap water

5



Drip dry

6



Immerse in high level disinfectant solution
(Metricide for 20 minutes)

7



Dry with lint-free cloth

8



Label as disinfected and ready to use

9



Storage

- Keep dry, dust free and prevent contamination

If possible high level disinfection is done by steam sterilization.

CLEANING STEPS

1



Do a Risk Assessment

- Determine risk of exposure to germs and the Personal Protective Equipment (PPE) required for the task
- Wear the correct PPE to safely do the job

2



Soak

- Immerse in soapy water or enzymatic detergent (Empower)

3



Clean

- Scrub all surfaces with steel bristle brush
- Use enzymatic detergent

4



Rinse with tap water

5



Dry with lint-free cloth or gauze

6



OR



Package

- Use surgical wrap with sterile indicator strips inside
- Close with autoclave tape

Package

- Put in peel pouch with sterile indicator
- Heat seal or peel'n' stick closure

7



Ready to autoclave

8



Insert package into autoclave for sterilization

9



- Autoclave: Set to manufacturer's settings
- Dry in the autoclave before removal



10



OK, when strip changes colour

11



Transport

- Assure packing is not contaminated

12



Storage

- Store in clean location.
- Keep dry and dust-free to prevent contamination

Appendix E:

Supplies for Reprocessing of Medical Equipment

Meditech number	Product Name	Uses	Comments
001450	Metricide 28	Chemical solution for high level disinfection	4 litre jug
003261	Metricide 28 test strips	For testing Metricide solution	
000606	Autoclave tape	To close blue wrap, stripes change colour when autoclave reaches temperature and time	
000595	Sterile indicator strips	To put in package, changes colour when the inside of the pack reaches temperature and time	
001423	Empower	Enzymatic detergent for soaking instruments before cleaning	
001459	Nitrile gloves (small)		
001460	Nitrile gloves (medium)		
001461	Nitrile gloves (large)		
000495	Omni wrap 24x24	For wrapping packages for steam sterilizing	
000494	Omni wrap 30x30	For wrapping packages for steam sterilizing	
000496	Omni wrap 45x45	For wrapping packages for steam sterilizing	
000633	Wrap dual peel tubing 3" x 100'	Clear plastic tubes for steam sterilizing	To be heat sealed
000632	Wrap dual peel tubing 4" x 100'	Clear plastic tubes for steam sterilizing	To be heat sealed
000631	Wrap dual peel tubing 6" x 100'	Clear plastic tubes for steam sterilizing	To be heat sealed
002168	Tote wipes	Disposable lint-free wipes	For drying and instruments
009712	Wire bristle brush	Removal of material from instruments	



16. Infections with Special Considerations

This section is for storage of resource information on specific microorganisms.

The Communicable Disease Manual has information about occupational health and infection prevention and control for specific infections.



17. Post Blood and Body Fluid Exposure

The effective management of a staff exposure requires the cooperation of Occupational Health, Infection Prevention and Control, and Communicable Disease staff (Public Health).

Protocols for blood and body exposure response is being developed for the Communicable Disease Manual.

Health care workers who are at risk of exposure to blood and body fluids are at risk of contracting Hepatitis B, Hepatitis C, HIV and many other communicable illnesses.

In the case of an exposure to blood or body fluids, the immediate response should be:

- If eye or mouth exposure, flush with copious amounts of water
- If break in the skin, wash with soap and water

When an exposure occurs in the health care setting, post-exposure follow-up needs to include:

- Report to supervisor
- Prompt first aid and triage for prophylaxis
- Restrict access and clean up of spill to prevent exposure to others

In order to do a risk assessment of a blood and body fluid exposure, gather the following information on the exposed person and the source of the exposure:

- Immunization and previous exposure history
- Details and analysis of nature and extent of exposure
- Identification of any other exposed staff



Next steps:

- Triage to assess need and urgency for post-exposure prophylaxis for HIV and Hepatitis B (if need assistance, call the Regional CDC Coordinator during business hours, or the Medical Officer of Health on call after hours)
- Follow up serology for Hepatitis B and HIV
- If required, tetanus booster and Hepatitis B vaccination
- Education and counselling of exposed person about time period while waiting results or prophylaxis
- Education regarding preventive actions that may be put into place to improve practices and prevent recurrence.

18. Water Restriction

Preparing for outage

Water Containers (Cleaning and Storage):

- Unopened commercially bottled water is the safest and most reliable emergency water supply
- Use of food-grade water storage containers, such as those found at camping supply stores, are recommended if you are preparing stored water yourself

Avoid using the following containers to store safe water:

- Containers that cannot be sealed tightly
- Containers that can break, such as glass bottles
- Containers that have ever been used for any toxic solid or liquid chemicals (e.g. old bleach containers)
- Plastic or cardboard bottles, jugs, and containers used for milk or fruit juices.

Before filling with safe water, use these steps to clean and sanitize storage containers:

1. Wash the storage container with dishwashing soap and water and rinse completely with clean water
2. Sanitize the container by adding a solution made by mixing 1 teaspoon of unscented liquid household chlorine bleach in one quart of water
3. Cover the container and shake it well so that the sanitizing bleach solution touches all inside surfaces of the container
4. Wait at least 30 seconds and then pour the sanitizing solution out of the container
5. Let the empty sanitized container air dry before use OR rinse the empty container with clean, safe water that already is available.



For proper water storage:

- Label container as “drinking water” and include storage date
- Replace stored water that is not commercially bottled every six months
- Keep stored water in a place with a fairly constant cool temperature
- Do not store water containers in direct sunlight
- Do not store water containers in areas where toxic substances, such as gasoline or pesticides, are present.

When Outage Happens

Water for oral consumption

Use only water that has been properly disinfected for drinking, cooking, making any prepared drink or brushing teeth.

1. Best option: If there is no bottled water, boil water to make it safe. Boiling water will kill most types of disease causing organisms that may be in the water. If the water is cloudy, filter it through a clean cloth and allow water to settle, and draw off the clear water for disinfection. Boil the water for one minute, let it cool and store it in clean containers with covers.

2. Secondary option: If boiling water cannot be done, disinfect it using household bleach. Bleach will kill some, but not all, types of disease causing organisms that may be in the water. If the water is cloudy, filter it through a clean cloth and allow it to settle, and draw off the clear water for disinfection.

Add 1/8 teaspoon (or 8 drops) of regular, unscented, liquid household bleach for each gallon of water, stir it well and let it stand for 30 minutes before using it. Store disinfected water in clean containers with covers.

Water for cleaning

If there is insufficient quantity of water to clean, use pop up wipes (Caviwipes) to sanitize surfaces.

If there is water but it is of unknown the quality, it can be boiled for one minute. If this cannot be done then bleach the water.

Bleaching water for cleaning:

- Add 10 drops per quart or litre of filtered and settled water.
- Double the amount of bleach for cloudy, murky or coloured water or water that is extremely cold.

Hand Sanitization When Clean, Running Water is Not Available

Washing hands with soap and water is the best way to reduce the number of microbes on them in most situations. If soap and water are not available, use an alcohol-based hand sanitizer that contains at least 60% alcohol. Alcohol-based hand sanitizers can quickly reduce the number of microbes on hands in some situations, but sanitizers do not eliminate all types of germs.

Hand sanitizers are not as effective when hands are visibly dirty or greasy. If clean water is not available, use sanitary hand wipes to remove any visible soiling and then use hand sanitizer that is at least 60% alcohol.

When Water Restriction Ends

Pipes in the facility may need to be flushed after the boil water advisory has been lifted to ensure that the water that has been sitting in the pipes has been purged and treated water is again available at the tap.

Ask your Environmental Health Officer for advice on this issue.

Sources of information:

1. Health Canada [Boil Water Advisories](#)
2. EPA [Emergency Disinfection of Drinking Water](#)
3. [Water Related Emergencies & Outbreaks](#)



19. Visitors

Visitors to health care settings should:

- Be aware of restrictions to visitation due to outbreak or other conditions within the facility. This may be communicated with door signs, public radio announcements or other means
- Be aware (through appropriate placement of signs) how and when to perform hand hygiene.
- Be directed to check with nurses when visiting a patient in a room with Additional Precautions.
- Receive education on how to wear PPE if visiting a patient in a room with Additional Precautions.



20. Care of the Deceased - To be added at a late date



21. Surveillance- To be added at a late date



22. Glossary of Terms

Additional Precautions: Infection prevention and control interventions that are carried out in addition to Routine Precautions for certain pathogens or clinical presentation based on the method of transmission (i.e. contact, droplet, airborne).

Aerosol: Particles of respirable size (less than 10um) generated by both human and environmental sources that can remain viable and airborne for extended periods.

Antibiotic Resistant Organism (ARO): a microorganism that has developed resistance to the action of several antimicrobial agents and that is of special clinical or epidemiologic significance due to the limitations of the treatment options. See 'MRO'

Asepsis: The absence of pathogenic (disease-producing) microorganisms. Can be further divided into:

- Aseptic technique - practices designed to render and maintain objects and areas free from microorganisms. Also called 'sterile technique'
- Clean technique - refers to practices that reduce the number of microorganisms and minimizes the risk of transmission from personnel or environment to the patient.

Bacteria: Commonly known as "germs". Bacteria are very small microorganisms only visible through a microscope. There are many varieties, only some of which cause disease. See 'microorganisms'.

Bioburden: The amount of microorganisms on a piece of medical equipment before cleaning and sterilization.

Carrier: An individual who is found to be persistently colonized (culture-positive) for a particular organism, at one or more body sites, but may have no signs or symptoms of infection. See 'colonization'.

Chemical indicator (CI): A monitoring device that is designed to respond with a chemical or physical change during the sterilization process. CIs do not verify sterility but they do assist in the detection of potential sterilization failures.



Cleaning: The physical removal of foreign material from an object or item using water and mechanical action, with or without detergents. Cleaning removes rather than kills microorganisms.

Colonization: Presence of microorganisms in or on a host, with growth and multiplication but without tissue invasion or cellular injury. See 'carrier.'

Contamination: The presence of microorganisms on inanimate objects (e.g. clothing, surgical instruments) or microorganisms transported transiently on body surfaces such as hands, or in substances (e.g. water, food, milk).

Decontamination: To remove disease-causing microorganisms and leave an item safe for further handling.

Drug identification number (DIN): A number assigned to a product by Health Canada identifying that it has been approved for use in Canada.

Disinfection: The inactivation of disease producing microorganisms on non-living items. It rarely kills all bacterial spores. It is divided into low/medium/high level depending on the use of the object before and after the disinfection process. See Spaulding Classifications.

Droplet: Small particles of moisture generated when a person coughs or sneezes, or when water is converted to a fine mist by an aerator or pump spray. They can be a means of carrying infectious microorganisms. They quickly settle out of the air and therefore are only an infectious concern for those in close proximity (6 feet/ 2 metres) to the source.

Flora: The human body contains a large number of bacteria, most of them performing tasks that are useful or even essential to human survival. Normal flora under normal circumstances do not cause disease.

Fungus: An organism that is filamentous or thread like in structure and reproduces through spores (e.g. yeast, mushrooms).

Health care associated infections (HCAI): Infections related to and attributable to interaction with some form of health care.

Health care worker (HCW): An individual providing or supporting health care services that will put them in contact with patients. This also means they will be exposed to germs in the workplace and may carry germs to other people in the workplace and home after work.

Infection: The entry and multiplication of an infectious agent in the tissues of the host:

- Inapparent (asymptomatic, subclinical) infection: an infectious process running a course similar to that of clinical disease but below the threshold of clinical symptoms.
- Apparent (symptomatic, clinical) infection: one resulting in clinical signs and symptoms (disease).

Infectivity: The ability of a pathogen to establish an infection.

Immune: Having a resistance to infection by a specific pathogen.

Mask: surgical/procedure mask is a disposable paper mask worn on the face to create a barrier to limit exposure to mucous membranes and inhalation of microorganisms into the respiratory tract. The protection may be for the wearer or for those in the health care environment when droplet transmitted organisms may be present or if there is risk of splashes or sprays to the face.

Microorganism: An organism that can be seen only with the aid of a microscope and that typically consists of only a single cell. Microorganisms include bacteria, protozoans, and certain algae and fungi, also called germs. See 'bacteria'.

MRSA: Methicillin Resistant Staphylococcus Aureus

Multi-Drug Resistant Organism (MDRO): Bacteria that have developed or acquired resistance to numerous antibiotics. See 'ARO'.

Nosocomial Infection: Infections where acquisition can be related to hospitalization. An infection occurring in a hospitalized or discharged patient, 72 hours or more after a hospital admission (with no evidence that infection was present or incubating at the time of admission).

Patients: For purposes of this manual, 'patients' refers to persons receiving care in acute care settings, clients in home care and residents in continuing care facilities.

Parasite: An organism that grows, feeds and is sheltered on or in a different organism while contributing nothing to the survival of its host.

Pathogenic: Having the capacity to cause disease.



Personal Protective Equipment (PPE): Equipment worn to protect a person from exposures to workplace hazards. In health care settings these exposures include blood and body fluids. Personal protective equipment in infection prevention and control in health care includes gloves, aprons, gowns, face shields, respirators and masks.

Respirator: N95 respirators block 95% of the small particles that cause infections transmitted by the airborne route when properly fitted and used.

Routine Practices: Basic standards in infection prevention and control that are required for safe patient care. It is based on the concept that all patients are potentially infectious, even when showing no symptoms. Routine practices is a standard to be used when there is any risk of contact with blood, body fluids and secretions, mucous membranes or non-intact skin.

RSV: Respiratory Syncytial Virus

Single use disposable device: A device that has been designed by the manufacturer for single-use only.

Sterilization: A validated process that kills all pathogenic microorganisms, including bacteria, fungi, viruses and spores.

Susceptibility: Likelihood to be affected with a disease, infection or condition.

Virulence: A measure of the strength of a microorganism. A factor that determines whether infection occurs and how severe the resulting disease symptoms may be. The degree of virulence is also an indicator for how rapidly and extensively the organism is likely to spread.

Virus: An infectious organism that in most cases cannot be seen through a standard lab microscope. It is a parasite dependent on nutrients inside the host cells for its metabolic and reproductive needs.

23. Resource List

Best Practices for Environmental Cleaning for Prevention and Control of Infections, Provincial Infectious Diseases Advisory Committee (PIDAC), Public Health Ontario 2012 [http://www.publichealthontario.ca/en/eRepository/Best Practices Environmental Cleaning 2012](http://www.publichealthontario.ca/en/eRepository/Best_Practices_Environmental_Cleaning_2012)

Best Practices for Infection Prevention and Control Programs in Ontario In All Health Care Settings, Provincial Infectious Diseases Advisory Committee (PIDAC), Public Health Ontario 2012 [http://www.publichealthontario.ca/en/eRepository/BP IPAC Ontario HCSettings 2012.pdf](http://www.publichealthontario.ca/en/eRepository/BP_IPAC_Ontario_HCSettings_2012.pdf)

[Best Practice Guidelines for Reducing Transmission of Antibiotic Resistant Organisms \(AROs\) In Acute & Long Term Care Settings, Home Care & Prehospital Care, For Healthcare Professionals, Department of Health and Wellness, Nova Scotia, 2012](#)

Division of Emergency and Environmental Health Services, National Center for Environmental Health (NCEH), Office of Noncommunicable Diseases, Injury and Environmental Health, National Center for Emerging and Zoonotic Infectious Diseases

Donning and Doffing Personal Protective Equipment, Infection Prevention and Control, Alberta health Services

EPA http://www.epa.gov/safewater/faq/pdfs/fs_emergency-disinfection-drinkingwater-2006.pdf

Infection Prevention and Control Best Practices for Long Term Care, Home and Community Care including Health Care Offices and Ambulatory Clinics, The Canadian Committee on Antibiotic Resistance, 2007 [http://www.gov.ns.ca/health/ccs/ltc/IPC Best Practices.pdf](http://www.gov.ns.ca/health/ccs/ltc/IPC_Best_Practices.pdf)

Infection Prevention and Control Field Manual, First Nations and Inuit Health Manitoba Region, Health Canada 2010

Northwest Territories Infection Prevention and Control Manual, Government of Northwest Territories 2012 <http://www.hss.gov.nt.ca/sites/default/files/nwtinfectioncontrolmanual.pdf>

PIDAC website: <http://www.publichealthontario.ca/en/BrowseByTopic>



[Occupational Management of Communicable Disease Exposure and Illness in Healthcare Workers, For Healthcare Professionals, Department of Health and Wellness, Nova Scotia, 2012](#)

Qikiqtani General Hospital, Infection Prevention and Control Manual Routine Practices and Additional Precautions: Assessment and Educational Tool, Public Health Agency of Canada 2012

Routine Practices and Additional Precautions: Preventing the Transmission of Infection in Health Care, Government of Manitoba. <http://www.gov.mb.ca/health/publichealth/cdc/docs/ipc/rpap.pdf>

[Stop: Clean Your Hands, Canada's hand Hygiene Campaign Toolkit, Canadian Patient Safety Institute 2007](#)

Acknowledgements:

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