Infection Prevention and Control
Policies & Procedures

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Introduction and purpose

There exists a two-tiered system for the prevention and control of nosocomial infections. They are Routine Practices and Transmission-Based Precautions.

i. Routine Practices (RP)

- Routine practices are based on the premise that all clients/patients/residents are potentially infectious, even when asymptomatic, and that the same safe standard should be used routinely with all clients/patients/residents to prevent exposure to blood, body fluids, secretions, excretions, mucous membranes, non-intact skin or soiled items and to prevent the spread of microorganisms.

- The consistent and appropriate use of RP by all health care workers with all patient encounters will lessen microbial transmission in health care settings and reduce the need for additional Transmission-Based Precautions.

- Health care providers MUST ASSESS THE RISK of exposure to blood, body fluids and non-intact skin and identify the strategies that will decrease exposure risk and prevent transmission of microorganisms.

- The goals of RP are to prevent the spread of microorganisms from:
  - Patient to patient
  - Patient to staff
  - Staff to patient
  - Staff to staff

ii Transmission-Based Precautions (TBP)

- Use these precautions, in addition to RP, with a patient suspect or known to have a communicable disease spread by the airborne, droplet, contact, airborne/contact or droplet/contact routes

- Transmission-based precautions include the use of barriers, such as personal protective equipment (PPE), and additional environmental controls that are put in place for encounters with the client/patient/resident or their immediate environment.
• The application of TBP may differ depending on the health care setting and the needs of the client/patient/resident, particularly in long-term care and the community.

**Components**

The components for successful implementation of RP and TBP are as follows:

• Policies and Procedures
• Risk assessment
• Hand Hygiene program
• Audits of compliance with feedback
• Education and training
• Immunization
• Healthy workplace
• Respiratory etiquette
• Easily accessible PPE
• Environmental controls

Please find details of each component in the policy # PHU-IPC-002, “Components of Routine Practices”.

**Types and Use of Personal Protective Equipment (PPE)**

To be effective, routine practices and transmission-based precautions depend on the correct use of PPE: gloves, gowns, surgical masks, respirators (i.e., N95), and goggles or face shields.

*Follow Attachment I - Procedure for Donning and Removal of PPE.*

**References**

**Donning and Removal of Personal Protective Equipment**

Personal protective equipment (PPE) is designed to protect health care providers in health care settings from exposure to potentially infectious material, when providing care to patients, these products protect the skin and mucous membranes of the eyes, nose, and mouth from exposure to blood, body and respiratory secretions. Always perform hand hygiene immediately before donning and after removing PPE.

Always don your PPE before contact with patients.

**Sequence for donning PPE**

- perform hand hygiene
- gown (if applicable)
- mask
- eyewear
- gloves (if applicable)

1. **How to don a gown**
   - opening is in the back
   - fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
   - secure at neck and waist
   - if gown is too small, use two gowns: the first ties in front, the second ties in back

2. **How to don a mask**
   - secure on head with ear loops/ties
   - place over nose, mouth, and chin
   - fit flexible nose piece over bridge
   - adjust fit – snug to face and below chin

3. **How to don eye protection/face shield**
   - position eyewear over face and secure to head using head band

4. **How to don gloves**
   - don gloves last
   - insert hands into gloves
   - extend gloves over gown cuffs (if wearing gown)

5. **How to use gloved hands**
   - keep gloved hands away from face
   - avoid touching or adjusting other PPE
   - remove gloves if they become torn; perform hand hygiene before donning new gloves
   - limit surfaces and items touched
   - all items must be removed and discarded carefully

**Sequence for removing PPE**

- perform hand hygiene after gloves/gown removal, before your hands go near your face (for removal of masks and eye protection) and after completion of PPE removal, and *any time you suspect your hands are contaminated during PPE removal.*

1. **Glove removal**
   - outside of glove is ‘dirty’
   - grasp outside edge near wrist
   - peel away from hand, turning glove inside out
   - hold in opposite gloved hand
   - slide ungloved finger under wrist of remaining glove, peel off from inside, creating a bag for both gloves
   - discard

2. **Gown removal**
   - gown front and sleeves are ‘dirty’; handle by inside/back of gown
   - unfasten ties
   - peel gown away from neck and shoulder
   - turn contaminated outside surface toward the inside
   - fold or roll into a bundle
   - place in laundry hamper if reusable/discard if disposable

3. **Perform hand hygiene**

4. **Eyewear/Face Shield removal**
   - outside of eyepiece is ‘dirty’; handle by head band
   - grasp head band with ungloved hands
   - pull away from face
   - place in designated receptacle for reprocessing or discard

5. **Mask removal**
   - front of mask is ‘dirty’; handle by ear-loops/ties
   - remove from face, in a downward direction, using ear-loops/ties
   - discard

6. **Perform hand hygiene immediately after removing PPE.**
**Introduction and purpose**

Routine practices are used with all clients/patients/residents to prevent exposure to blood, body fluids, secretions, excretions, mucous membranes, non-intact skin or soiled items and to prevent the spread of microorganisms.

**Components of Routine Practices (RP)**

A. **Risk Assessment** of the client/patient/resident and the health care provider’s interaction with the client/patient/resident

B. **Hand Hygiene** – Refer to Policy and Procedure for Hand Hygiene

Hands are the most common vehicles for transmitting infections. Any staff that comes in contact with clients must understand and practice the 4 moments for hand hygiene in a health care facility

**Always perform hand hygiene before and after any patient contact**

- Hand hygiene is a term used to cover both hand washing using soap and water, and cleaning hands with alcohol-based hand rub.
- Proper hand hygiene significantly reduces the spread of infectious diseases
- If hands are visibly soiled use a plain (non-antimicrobial) soap for routine hand washing.
- If hands are not visibly soiled and for specific circumstances (e.g., control of outbreaks or before invasive procedures), use a waterless alcohol-based hand rub
- Wash hands with soap and water after touching blood, body fluids, secretions, excretions, and contaminated items, whether or not gloves are worn
- Minimize unessential contact with patients and their immediate environment

C. **Environmental Controls**, including:

i. **Appropriate placement and bed spacing**, as well as toileting facilities for clients/patients/residents who soil the environment

ii. **Cleaning of equipment** that is being used by more than one client/patient/resident between uses according to **Minimum Requirements for Disinfection and Sterilization Processes**
   - Linen – all linens should be handled as though contaminated to the highest degree, regardless of whether client/patient/resident is on additional precautions
   - Waste Management – disposed of according to **Guidelines for Waste Management**; Sharps are to be disposed of in appropriate sharps containers located at point of care. Any exposures to sharps injuries are to be managed according to **Blood and Body Fluid Exposure Protocol**
   - Equipment – all equipment shared among patients (i.e., stethoscopes, blood pressure cuffs)

iii. **Cleaning of the health care environment**, including safe handling of soiled linen and waste (e.g. sharps) according to **Guidelines for Routine Cleaning, Sanitizing, and Disinfecting in Health Care Settings**
iv. **Engineering controls**, such as well-maintained heating, ventilation, and air conditioning (HVAC) systems with sufficient air changes per hour.

v. **Point of Care** sharps containers, hand hygiene product dispensers and adequate dedicated hand washing sinks.

D. **Administrative Controls**, including:

i. **Policies and Procedures** to ensure staff are able to deal effectively with transmission risks associated with infectious illnesses

ii. **Staff education** to heighten awareness of how to prevent transmission

iii. **Healthy workplace policies** that exclude staff from working when ill with a communicable disease

iv. **Immunization programs** for staff and clients where applicable

v. **Respiratory etiquette** for both staff and clients/residents/patients

vi. **Monitoring of complainant with feedback**, including hand hygiene

vii. **Sufficient staffing levels** to ensure health care providers to comply with infection preventions and control policies and procedures.

E. **Sufficient, easily accessible and appropriate PPE**

i. **Gloves - See Policy for Glove Use**

- Wear clean, non-sterile medical gloves when touching or coming into contact with blood, body fluids, secretions or excretions
- Apply gloves just before touching mucous membranes or contacting blood, body fluids, secretions, or excretions
- Because gloves are not completely free of leaks and hands may become contaminated when removing gloves, hands must be cleaned BEFORE putting on gloves for an aseptic/clean procedure and AFTER glove removal. Wash hands immediately after removing gloves
- Gloves must be removed immediately and discarded into a waste receptacle after the activity for which they were used and before exiting a client/patient/resident environment.
- Vinyl or nitrile gloves may be worn (recommendation for latex FREE).
- Change gloves when visibly soiled, torn or punctured

*refer to the Policy for Selection and Use of Gloves*

ii. **Gown**

- Protects against soiling of clothing during activities that may generate splashes or sprays of blood, body fluids, secretions and excretions
- Apply gown prior to performing such activities
- Wear when contamination of clothing with potentially infectious material is possible. Gown should fully cover the torso, fit close to the body and cover the arms to the wrists.
- Choose a gown appropriate to the situation:
  - Disposable vs. re-useable (requires laundering. Do NOT hang gowns for later use).
  - Fluid-resistant vs. non fluid-resistant.
  - Sterile vs. clean.

iii. **Mask and Respirators (i.e., N95)** – respiratory protection
• Protects nose and mouth (mucous membranes) from exposure to sprays or splashes of blood, body fluids, secretions and excretions, as well as from inhalation of small infectious particles

• Apply appropriate personal protective equipment prior to performing activities where splashing is anticipated

• N95 respirators are used to prevent inhalation of small particles that may contain infectious agents transmitted via the airborne route. They should also be worn for aerosol-generating procedures that have been shown to expose staff to undiagnosed tuberculosis, including:
  a) Sputum induction
  b) Diagnostic bronchoscopy
  c) Autopsy examination

The following Aerosol generating procedures have also been associated with a documented increased risk of pathogen transmission:
  a) Intubation and related procedures, e.g. manual ventilation
  b) Respiratory and airway suctioning (including tracheostomy care)
  c) Nasopharyngeal aspiration
  d) Cardiopulmonary resuscitation
  e) Bronchoscopy

Other Aerosol generating procedures with a possible increased risk of pathogen transmission are:
  a) Nebulisation
  b) Non-invasive positive pressure ventilation
  c) Bi-level positive airway pressure (BPAP)
  d) High frequency oscillating ventilation

• Disposable masks must NOT be re-used after use, but disposed of immediately after task. They should NOT be folded up or put in pocket for later use, nor should they be allowed to hang or dangle around neck. Masks should be changed if they become wet!

*Follow Attachment I - Procedure for Donning and Removal of PPE.

iv. Eye protection – goggles, face shields

• Eye protection must be worn EVERY TIME respiratory protection is worn, in order to provide full protection for eyes, nose and mouth when it is anticipated that a procedure or care activity is likely to generate splashes or sprays of blood, body fluids, secretions or excretions, or within 2 meters of a coughing client/patient/resident.
• A face shield should cover the forehead, extend below the chin and wrap around the side of the face.
• Goggles cover front and side of eyes to protect from sprays, splashes and airborne particles

**NOTE: Prescription eye glasses are NOT acceptable by themselves as eye protection; they may be worn underneath face shields and some types of protective eye wear.

References:
Introduction and purpose

Adherence to hand hygiene recommendations is the single most important practice for preventing the transmission of microorganisms in health care and directly contributes to patient safety. Hand hygiene is the responsibility of all individuals involved in health care.

Recommendations for Hand Hygiene

A. Wash hands with plain soap and water before eating and after using the bathroom, when hands are visibly dirty or soiled with blood, or other body fluids, excretions, secretions, or after touching non-intact skin and mucous membranes or if exposure to spore-forming bacteria (e.g. C. difficile) is suspected or proven.

B. Use an alcohol-based hand rub (ABHR) for routine hand hygiene in all other clinical situations below, if hands are not visibly soiled. ABHR are especially useful when time for hand washing or access to sinks is limited. Alternatively, wash hands with soap and water.

C. Reduce the frequency of hand hygiene required by minimizing unnecessary direct contact with patients and their immediate environments. This can be accomplished by organizing care activities and avoiding actions such as leaning on bed rails.

D. Hand washing sinks and supplies (towels, soap) and hand sanitizers should be in sufficient numbers and placed so as to be readily accessible.

1. ALCOHOL-BASED HAND RUB (ABHR)

Alcohol-based hand rub is the preferred method for decontaminating hands when hands are not visibly soiled, they:

• provide for a rapid kill of most transient microorganisms
• contain a variety of acceptable alcohols in concentrations from 60 to 90%; 70 to 90% is preferred for health care settings
• are not to be used with water
• contain emollients to reduce hand irritation
• are less time-consuming than washing with soap and water
• If running water is not available, use moistened towelettes to remove the visible soil, followed by ABHR
2. HAND WASHING

Hand washing with soap and running water must be performed when hands are visibly soiled. Antimicrobial soap is not required and not recommended. Bar soaps are not acceptable in health care settings except for individual client/patient/resident personal use.

YOUR 4 MOMENTS FOR HAND HYGIENE

1. Before initial client/patient/resident or environment contact

When? Clean your hands when entering:

- before touching client/patient/resident or before touching any object or furniture in the client/patient/resident’s environment.

2. Before aseptic procedure

When? Clean your hands immediately before any aseptic procedure.

3. After body fluid exposure risk

When? Clean your hands immediately after an exposure risk to body fluids (and after glove removal).

4. After client/patient/resident or environment contact

When? Clean your hands when leaving:

- after touching client/patient/resident or after touching any object or furniture in the client/patient/resident’s environment.

FACTORS THAT REDUCE THE EFFECTIVENESS OF HAND HYGIENE

- Nails: Long nails are difficult to clean, can pierce gloves and harbor more microorganisms than short nails. Nails must be kept clean and short. Artificial nails or nail enhancements are not to be worn by those giving care. See indications for nail care (below).

- Jewelry: Hand and arm jewelry hinder hand hygiene. Rings increase the number of microorganisms present on hands and increase the risk of tears in gloves. Arm jewelry, including watches, should be removed or pushed up above the wrist before performing hand hygiene.

- Products must be dispensed in a disposable pump container that is not topped-up, to prevent contamination.
NAIL CARE

There are reports in the literature of a strong association between artificial nails and/or long nails and nosocomial infections.

The recommendations for nail care are as follows:

   a) Keep natural nails clean and short

   b) Fresh clear nail polish is acceptable

   c) Wearing chipped nail polish may harbor organisms and is to be avoided.

   d) Healthcare workers should not wear artificial nails or extenders when having direct contact with patients and that the natural nails should be kept short (less than 0.5 cm long)

References


2. Centers for Disease Control and Prevention, CDC, Guidelines for Hand Hygiene in Health-Care Settings MMWR 2002, Vol.51, no.RR16

3. WHO Guidelines on Hand Hygiene in Health Care (May 2009)

4. Canadian Patient Safety Institute Stop! Clean your hands campaign
Procedure for washing hands with soap and water

1. Turn on taps for water and wet hands.
2. Apply enough dispensable soap to cover all surfaces of hands (backs, palms, fingers).
3. Interlace fingers to clean spaces in between, then clean underneath the finger nails.
4. Using a rotational motion vigorously wash the backs of hands and palms; rub lathered hands together for a minimum of 10-15 seconds.
5. Rinse all surfaces of hands under running water.
6. Dry hands thoroughly with a single use paper towel.
7. Use a paper towel to turn off the tap/faucet.
8. Use a paper towel to open the bathroom door.
9. Drop paper towel into wastebasket.

(Duration of entire procedure: 40-60 second)

Hand Hygiene technique using an alcohol based hand sanitizer

1. Apply enough of the product in the palm of your hand to completely cover all surfaces of your hands (backs, palms, fingers).
2. Rub hands together, covering all surfaces.
3. Continue rubbing as above until all the surfaces of your hands are dry.
4. Do not rinse your hands.

(Duration of entire procedure: 20-30 sec)

References

2. Centers for Disease Control and Prevention, CDC, Guidelines for Hand Hygiene in Health-Care Settings MMWR 2002, Vol.51, no.RR16
3. WHO Guidelines on Hand Hygiene in Health Care (May 2009)
4. Canadian Patient Safety Institute Stop! Clean your hands campaign
5. PAPHR (Prince Albert Parkland Health Region) infection control policies and procedures manual.
**Introduction:**
Toys in waiting rooms, ambulatory care and outpatient areas may become contaminated with substances such as respiratory secretions or faeces and be a source of potentially infectious organisms. If proper infection prevention and control practices are not followed when dealing with toys, they can be a source of outbreaks for infections such as MRSA, shigellosis and influenza.

**Purpose:**
To prevent transmission of infections by cleaning toys routinely and when visibly soiled.

**Policy**
1. Toys should be non-porous, smooth and able to withstand frequent cleaning and disinfection.
2. Toys should have parts that are easy to clean.
3. There should be an adequate system in place for the daily inspection, cleaning and disinfection of toys; if none exists the toys should be removed from the waiting rooms.
4. To prevent transmission of infections, clean and disinfect toys between uses.
5. Stuffed toys should not be used unless they belong to a single child, not shared with others and sent home or discarded when the child leaves the facility. Stuffed toys should not be used even for décor enhancement in common rooms such as waiting areas and halls.
6. Toys that retain water should not be used.
7. Any contaminated toy should be removed until properly cleaned and disinfected.
8. A regular schedule for cleaning and disinfecting toys should be established.

**Procedure**
- Inspect toys for any cracks or other features that prevent safe usage. Unsafe toys should be discarded.
- Clean in accordance with the manufacturer’s instructions e.g. wash with soap using friction, disinfect, rinse with water and then air dry. Ensure toys are completely dry before use or storage.
- Disinfecting options include: A hospital grade low level disinfectant approved for this purpose (Follow the manufacturer’s recommendations for dilution and contact times), a commercial dishwasher / cart washer cycle (must reach 82 °C), Bleach (Sodium hypochlorite) with a dilution of 1/100, Alcohol (70%) for small and/or minimally soiled toys that are mouthed or contaminated.
- Phenolics should not be used for cleaning toys.

**References**
2. PAPHR (Prince Albert Parkland Health Region) infection control policies and procedures manual.
3. APIC Text of Infection Control and Epidemiology, © 2009
Environmental cleaning checklists

Washroom

Clean at least once daily and as needed throughout the day. Emergency room washrooms should be cleaned at least every four hours and more frequently as needed.

- Perform hand hygiene and don appropriate Personal Protective Equipment.
- Gather materials required for cleaning. Ensure an adequate supply of materials is available before starting. Any preparations of cleaning products or disinfectants must be done according to manufacturer’s instructions.
- Caution people by placing a safety sign in a visible location.
- Check the floor and remove any soiled linen and debris.
- Check for spills and wipe if any.
- Remove the soiled gloves, perform hand hygiene and put on clean gloves.
- Remember to work from least soiled areas to those most soiled and from high to low surfaces. Allow the solution to sit for the manufactures’ approved contact time. Change cloths and mop heads frequently.
- Use dust mop to clean ceiling vents, light fixtures and other highly placed objects.
- Clean doors, door handles and any other touched areas.
- Spot-clean walls as required.
- Clean and polish glass, mirrors and other reflective surfaces.
- Clean light switches, dispensers, other wall mounted items and surrounding wall areas.
- Pour disinfectant solution to the toilet and allow it to sit for the recommended contact time.
- While the above solution sits in the toilet bowl, clean the counter, faucets, sink, plumbing and fixtures if applicable. Scrub as required to remove scum. Clean the toilet after the recommended contact time with disinfectant.
- Empty waste cans including sanitary containers and clean them. Garbage will be transported to the designated location.
- Dry mop and then wet mop the floor.
- After the floor is completely dry, remove safety sign.
- Remove gloves and any other PPE and perform hand hygiene.
- Replenish all dispensers and supplies as required.
Treatment room

Clean at least once daily, and more frequently as needed.

- Perform hand hygiene and don appropriate Personal Protective Equipment.
- Gather materials required for cleaning. Ensure an adequate supply of materials is available before starting. Any preparations of cleaning products or disinfectants must be done according to manufacturer’s instructions.
- Check the floor and remove any soiled linen and debris.
- Check for spills and wipe if any.
- Remove the soiled gloves, perform hand hygiene and put on clean gloves.
- Remember to work from least soiled areas to those most soiled and from high to low surfaces. Allow the solution to sit for the manufactures’ approved contact time. Change cloths and mop heads frequently
- Use dust mop to clean ceiling vents, light fixtures and other highly placed objects.
- Spot-clean walls as required.
- Clean and polish glass, mirrors and other reflective surfaces.
- Clean light switches, dispensers, other wall mounted items and surrounding wall areas.
- Check privacy curtains and replace them if soiled.
- Clean counters, chairs, tables, sinks and other horizontal surfaces and furnishings.
- Clean any items that have been used by clients (examination beds, tables, chairs etc.).
- Empty waste receptacles, remove soiled linen bag if full. Clean linen bags and garbage hampers. Garbage will be transported to designated location.
- Check sharps containers and replace as required.
- Place a safety sign in a visible location as you get ready to clean the floor
- Dry mop and then wet mop the floor.
- After the floor is completely dry, remove safety sign.
- Remove gloves and any other PPE and perform hand hygiene.
- Replenish all supplies and dispensers and as required.
Waiting room

*Clean according to your facility’s fixed schedule and more frequently as needed.*

- Perform hand hygiene and don appropriate Personal Protective Equipment.
- Gather materials required for cleaning. Ensure an adequate supply of materials is available before starting. Any preparations of cleaning products or disinfectants must be done according to manufacturer’s instructions.
- Check the floor for debris and clutter and remove.
- Check for spills and wipe if any.
- Remove the soiled gloves, perform hand hygiene and put on clean gloves.
- Remember to work from least soiled areas to those most soiled and from high to low surfaces. Allow the solution to sit for the manufactures’ approved contact time. Change cloths and mop heads frequently.
- Use dust mop to clean ceiling vents, light fixtures and other highly placed objects.
- Spot-clean walls as required.
- Clean and polish glass, mirrors and other reflective surfaces.
- Clean light switches, dispensers, other wall mounted items and surrounding wall areas.
- Check curtains and replace them if dirty.
- Wipe down surfaces like counter tops, tables, chairs, etc.
- Clean toys according to the recommendations for toy cleaning.
- Place a safety sign in a visible location as you get ready to clean the floor.
- Dry mop the floor, moving any movable furniture as required. This enables cleaning of hidden surfaces. Then perform wet mopping.
- After the floor is completely dry, remove safety sign.
- HEPA-filter vacuum all areas with carpets and walk off mats.
- Empty garbage cans and clean them.
- Remove gloves and any other PPE and perform hand hygiene.
- Replenish all supplies and dispensers as required.
- Transport garbage to designated location.
**Rationale:**

Appropriate cleaning, sanitizing, disinfecting and sterilization practices in Healthcare Facilities are necessary to:

i) Provide an esthetically pleasing environment.

ii) Reduce soil and microbial load on all environmental surfaces including client-care equipment and thereby reducing the potential for infections.

**Policy:**

1) Products for cleaning and disinfecting environmental surfaces should be selected and used appropriately.

2) **Environmental Services policies and procedures** are to be followed by all staff when cleaning and disinfecting areas in a health care facility.

**Definitions:**

i. **Cleaning** – the physical removal of foreign material (e.g. dust, soil) and organic material (e.g. blood, secretions, microorganisms). Cleaning physically removes rather than kills microorganisms. It is accomplished with water, detergents and mechanical action.

ii. **Sanitizing** – a process which results in a reduction in the microbial population on an inanimate object to a safe or relatively safe level as judged by public health requirements (a sanitizer is a chemical that kills 99.999% of the specific test bacteria in 30 seconds under the conditions of the test)

iii. **Disinfection** – the inactivation of disease-producing microorganisms. Disinfection does NOT destroy bacterial spores. Medical equipment/devices must be cleaned thoroughly BEFORE effective disinfection can take place

   1. **High-level disinfection** – kills bacterial spores when used in sufficient concentration under suitable conditions. It is therefore expected to kill all other microorganisms
   2. **Low-level disinfection** – will kill most vegetative bacteria (except tubercle bacilli), lipid viruses and some non-lipid viruses and fungi, but not bacterial spores.
   3. **Germicide** – disinfectant chemical that destroys pathogenic microorganisms, used on inanimate objects

iv. **Antiseptic** - Substance that prevents or arrests the growth or action of microorganisms by inhibiting their activity or destroying them. The term is used specifically for a preparation applied topically to living tissue.

v. **Sterilization** - a process by which all forms of microbial life including bacteria, viruses, spores and fungi are destroyed. For Example, steam sterilization, ethylene oxide.

vi. **Drug Identification Number (DIN):** This is provided by Health Canada prior to marketing and is required by the Food and Drugs Act and Regulations. A DIN ensures
that labelling and supporting data have been provided and that the Therapeutic Products Directorate has established that the product is effective and safe for its intended use.

**Procedure:**

1) **Selection**

Equipment and surfaces in the health care setting must be cleaned with hospital-grade cleaners and disinfectants. Visit Health Canada’s Drugs and Health Products web page. [http://webprod5.hc-sc.gc.ca/dpd-bdpp/index-eng.jsp](http://webprod5.hc-sc.gc.ca/dpd-bdpp/index-eng.jsp)

Detergents remove organic material and suspend grease or oil.

Disinfectants rapidly kill or inactivate most infectious agents.

A variety of products from a number of suppliers can be used to achieve effective cleaning. It is important to follow the manufacturer’s instructions when using cleaning agents. Consider the following factors when choosing a disinfectant:

a) The disinfectant must have a drug identification number (DIN) from Health Canada.
b) Should be approved in consultation with the Infection Prevention & Control Representative.
c) The nature of the item to be disinfected.
d) The disinfectant must be appropriate to the level of reprocessing that is required for the medical device.
e) Occupational Health & Safety.
f) The innate resistance of the microorganisms verses the inactivating effects of the disinfectant.
g) Protection of the environment.

2) **Use**

Equipment cleaning/disinfection should be done as soon as possible after items have been used.

Disinfectants are only to be used to disinfect and must not be used as general cleaning agents, unless combined with a cleaning agent as a detergent-disinfectant (e.g. Accel- Prevention Disinfectant). **Skin antiseptics must never be used as environmental disinfectants.**

Disinfectant/detergent formulations registered by Health Canada are used for environmental surface cleaning. Actual physical removal of microorganisms and soil by wiping or scrubbing is as important, as any antimicrobial effect of the cleaning agent used.

When using a disinfectant, it is most important that:

a) An item or surface be free from visible soil and other items that might interfere with the action of the disinfectant.
b) The disinfectant be used according to manufacturer’s instructions for dilution and contact time.
c) The disinfectant must be used according to the product’s Material Safety Data Sheet (MSDS).
d) Contamination of disinfectant solution should be minimized by ensuring proper dilution of the disinfectant, frequent changes of solution and avoiding “double dipping” of soiled cloth into disinfectant solution.
e) Personal protective equipment must be worn appropriate to the product(s) used.
f) For high level liquid disinfection, there should be a system in place to ensure the efficacy of the disinfectant e.g. the use of chemical indicator test strips.

References:


3. HICPAC Guidelines for Environmental Infection Control in Health-Care Facilities 2003
**Purpose:**

Disinfection and sterilization are essential for ensuring that medical and surgical instruments do not transmit infectious pathogens to patients. Because sterilization of all patient-care items is not necessary, health-care policies must identify, primarily on the basis of the items' intended use, whether cleaning, disinfection, or sterilization is indicated.

The goals of safe reprocessing of medical equipment/devices include:

a) Preventing transmission of microorganisms to personnel and clients/patients/residents; and

b) Minimizing damage to medical equipment/devices from foreign material (e.g., blood, body fluids, saline and medications) or inappropriate handling.

**Policy:**

All reprocessing of medical equipment/devices, regardless of source, must meet this guideline whether the equipment/device is purchased, loaned, physician/practitioner-owned, used for research or obtained by any other means, and regardless of where reprocessing occurs.

**Definitions:**

i. **Cleaning** – the physical removal of foreign material (e.g. dust, soil) and organic material (e.g. blood, secretions, microorganisms). Cleaning physically removes rather than kills microorganisms. It is accomplished with water, detergents and mechanical action.

ii. **Sanitizing** – a process which results in a reduction in the microbial population on an inanimate object to a safe or relatively safe level as judged by public health requirements (a sanitizer is a chemical that kills 99.999% of the specific test bacteria in 30 seconds under the conditions of the test)

iii. **Disinfection** – the inactivation of disease-producing microorganisms. Disinfection does NOT destroy bacterial spores. Medical equipment/devices must be cleaned thoroughly BEFORE effective disinfection can take place

1. **High-level disinfection** – kills bacterial spores when used in sufficient concentration under suitable conditions. It is therefore expected to kill all other microorganisms
2. **Low-level disinfection** – will kill most vegetative bacteria (except tubercle bacilli), lipid viruses and some non-lipid viruses and fungi, but not bacterial spores.
3. **Germicides** – disinfectants chemicals that destroy pathogenic microorganisms, used on inanimate objects
4. **Antiseptics** - Substance that prevents or arrests the growth or action of microorganisms by inhibiting their activity or destroying them. The term is used specifically for preparation applied topically to living tissue.
iv. **Sterilization** - a process by which all forms of microbial life including bacteria, viruses, spores and fungi are destroyed. For example, steam sterilization, ethylene oxide.

References

**Introduction**

This policy should be read together with the procedure on steam sterilization of medical devices that follows it.

Steam Sterilization is a type of medical device reprocessing that uses saturated steam under pressure to destroy all forms of microbial life including bacteria, viruses, spores and fungi. It is the type of sterilization used for critical medical equipment which are medical devices that enter sterile tissues, for example the vascular system. Examples of critical medical devices include but are not limited to needles, foot care equipment, implantable equipment/devices, and biopsy forceps.

**Rationale**

Following proper sterilization procedures helps to prevent the occurrence of infections after operations and other medical procedures.

**Policy**

All re-usable critical medical equipment must undergo steam sterilization following proper procedure before use on another client.

Personnel performing sterilization shall don appropriate Personal Protective Equipment as determined by the activity/stage of the reprocessing process they are carrying out.

The sterilization method used, in this case steam sterilization shall be compatible with the type of device as shown by the manufacturer’s instructions.

Before being put to use i.e. at installation, a new sterilizer must pass at least 3 consecutive cycles with the appropriate challenges (Physical, chemical, biological), in an empty sterilizer as well as at least one cycle challenged with a full test load. Operational requalification there after shall be performed annually and in the following circumstances:

- Major repairs
- Relocation or construction in the area
- After unexplained sterility failures

The sterilizer shall be operated and maintained according to the manufacturer’s instructions and these should be readily available and accessible.

The reprocessing process shall undergo assessment or auditing at a regular pre-determined frequency to enable quality assurance and improvement.

While purchasing medical equipment, consideration must be given to their sterilizing requirements.
The reprocessing area

A designated area with adequate space should exist solely for reprocessing. The area should have restricted access from other areas in the health care setting.

Functional work zones should be separated by walls or partitions, particularly the decontamination work areas from clean areas so that there is a one way work flow. One way work flow enables reprocessing to occur in one direction from the dirtiest to the cleanest essentially reducing the possibility of recontamination. In case physical separation is not possible, spatial separation should be done. A designated sink for hand washing should exist.

A double compartment sink to aid in the cleaning process should be available, one for “decontamination”, the other for rinsing.

The reprocessing area should have surfaces that can be easily cleaned and disinfected. It should have a slip – proof flooring that can withstand disinfected products. Carpet is strongly discouraged.

The storage site should be in a separate enclosed limited access area. The area should be clean and dry and not affected by moisture, dust and vermin. The temperature should be between 18°C and 23°C and the relative humidity between 30% and 60%. If either of these is increased then the environment may become favorable for microbial growth.

Staff requirements

Staff responsible for reprocessing should be trained/ educated in the process so that they are knowledgeable of what they are doing. They should review the policies and procedures pertaining to reprocessing of medical equipment and adhere to them. Upon appointment they should receive the relevant orientation in the reprocessing department.

Monitoring

Facilities should ensure that the sterilization procedure is well monitored and proper documentation of the process is done. Physical, chemical and biological monitoring shall be done as elaborated in the procedure section.

Devices should not be released for use until results of biological monitoring are available.

If a failed chemical indicator occurs, the process shall be assessed and the devices of that package shall be reprocessed.

If a failed biological indicator occurs:

- Investigate the cause by review of charts to confirm that correct procedure was followed.
- Review of indicator to see if it was correctly handled and interpreted.
- Inform the relevant personnel.
If some instruments were released before the results of the biological indicator were available, there should be a system to track and recall them since they were not adequately sterilized.

Repeat the BI test. Sterilizer not to be used until results of BI have returned.

If the repeat results show a pass and all reviews show the sterilizer is functioning well, the sterilizer may be placed back in service but reprocess the contents of the load on which the failure was recorded.

If the repeat test fails:

- Sterilizer not to be used until corrective action is done. The sterilizer should have a sign indicating that it shouldn't be put to use.
- All instruments that were reprocessed since the last negative test (pass) must be re-called and reprocessed.
- The relevant personnel should be informed.
- The relevant clients and physicians should be notified.
- The recall should be in writing.
- Before being put back to use after a positive BI, the sterilizer must undergo 3 testing cycles with a biological indicator.
- If it is believed that the failure is due to malfunction, a qualified service provider as suggested by the manufacturer shall be contacted.

Shelf Life

The shelf life of sterilized medical devices is event related meaning that if there is nothing to compromise the integrity of the package, the contents will remain sterile almost indefinitely if they were sterilized according to proper procedure.

Use of reprocessed medical devices

Check the integrity of the package

Validate results of the chemical tape and internal monitors

Inspect the instruments and reassemble if necessary.

Maintenance

The manufacturer`s recommendations should be followed when performing the scheduled and non-scheduled maintenance.

References


3. 3M Attest™ Biological Monitoring system, Technical Product Profile, Technical service publication.


5. PAPHR (Prince Albert Parkland Health Region) infection control policies and procedures manual. Reprocessing patient care equipment, February 2009.

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Adopted from MLTC - 2009
1. **Personal Protective Equipment**

Appropriate personal protective equipment (PPE) should be worn for cleaning and handling contaminated equipment/devices.

- impermeable gown or water proof apron
- mask
- protective eyewear or face shield
- utility gloves – long enough to cover wrist and be tear resistant
- do not wear watch or rings
- do not eat or drink, store food, smoke, apply cosmetics or handle contact lenses while in the reprocessing area
- recommended that all personnel involved in reprocessing be immune to Hepatitis B

Donning and removing PPE Sequence

**PUT ON:** hand hygiene, gown, mask, eye protection, gloves
**TAKE OFF:** remove gloves, gown, hand hygiene, eye protection, mask, hand hygiene

***Remember that hand hygiene is a critical step in infection control***

2. **Collection, Containment and Transport**

Remove all sharps and dispose in sharps container at point of use.

Gross soil should be removed immediately after use if the cleaning process cannot be completed immediately after use. This prevents organic material from drying on the instruments.

Soiled medical equipment must be transported to the reprocessing area in a covered container that can be easily cleaned.
3. Cleaning

Reusable medical equipment must be thoroughly cleaned before sterilization.

Cleaning must be done in an area that is separate from the storage of sterilized equipment and according to manufacturer’s instructions.

Perform either manual cleaning (i.e., using friction) or mechanical cleaning (e.g. with ultrasonic cleaners)

The process of manual cleaning includes the following steps:

A. Disassemble devices prior to cleaning unless otherwise recommended by the manufacturer.

B. Soak all items in an enzymatic instrument detergent to help soften organic material and make the item easier to clean.

C. Physically remove all organic material in the following manner:

- Completely submerge items during the cleaning process.
- Remove soil by rubbing, scrubbing, and brushing or wiping using soft bristle brushes. (Do not use wire brushes). Pay attention to serrated edges and other hard to reach places.
- Keep instruments under water completely when cleaning to prevent aerosolization of organic materials.
- Use brushes appropriate for the size of instruments, lumens, channels or connectors.
- Place items that are cleaned and waiting to be rinsed in a second sink or wash basin.
- Discard cleaning solution after one use.

D. Separate dissimilar metals (stainless steel, carbon steel etc.). Mixing will result in the oxidation of these metals.

E. Clean and disinfect all items used in the cleaning procedure such as brushes, basins, sinks etc.
4. **Rinsing**

Rinsing of instruments should be done in a second sink. A plastic wash basin will work if you do not have double sinks.

Rinse all equipment/instruments thoroughly with water to remove *all* detergent residues.

Rinse equipment containing lumens with sterile water or as the manufacturer suggests.

Disinfect sink or basin after each use.

5. **Drying**

Dry stainless steel instruments immediately after rinsing to prevent spotting.

Instruments/equipment may be air dried or dried with a clean *lint free* cloth.

Always follow the manufacturer’s instructions for drying if applicable.

6. **Inspecting Equipment**

It is important that you visually inspect all items for cleanliness and integrity of the instruments by checking for dents, bends and other features. *Devices that are not clean must re-cleaned.*

Check hinged instruments for ease of opening and alignment of jaws and teeth.

Items with moveable parts need to be lubricated to prevent rusting, pitting or eroding. Follow the instructions on the lubricating solution bottle for mixing and use guidelines.
7. **Wrapping Equipment**

A. Instruments must be in an *open and unlocked* position.

B. Equipment that you have disassembled to clean should remain disassembled during the wrapping and sterilization process.

C. Choose a wrapping material that is appropriate (wrapping or pouch).

D. If using plastic pouches, ensure the pouch is large enough for the instruments.

E. Wrap the instruments in a manner that will allow adequate steam penetration and drying of the pack.

F. Instruments must be evenly distributed in the package.

G. Insert a *Comply™ steam chemical integrator* indicator into **each wrapped pack or pouch**. Place in area of the pack that is the hardest for the steam to infiltrate.

H. Apply external chemical indicator tape to seal the package, if the package itself does not have an indicator on the outside.

I. Record date, load #, pack # and initials on external chemical indicator tape on the wrapped pack or the sealed seam of the plastic pouch. Use a permanent soft tipped marker. *DO NOT* write on the paper side of the pouch as the ink will leach during sterilization.

   **Example – Apr 20/09 Load 21 pack 1 CR**

J. Record individual pack numbers and other information pertaining to the load on the Autoclave Log. Ensure that the “load number on your packs corresponds with the load number on your Autoclave.
8. **Loading the Sterilizer**

1. Follow manufacturer’s instructions while loading and the same for specific details of operation.
2. Fill reservoir with distilled water.
3. Ensure the water reservoir is filled with *distilled or demineralized water* only. *Never use tap water.*
4. Load sterilizer to allow for free movement of steam/air circulation, evacuation of steam and drying.

**Pay particular attention to the following details:**

- **Paper/plastic packages, linen wrapped packs and metal basin sets** MUST be placed on their side. If this is not possible then they can be laid flat but cannot have any other packs on top. If using paper/plastic packages, ensure the plastic side is facing downward.

- **Empty containers** should be placed upside down to prevent accumulation of water.

- **Use Pouch racks to separate packs.** Packs should have a minimum of ¼ inch space between each other and away from all sterilizer surfaces. Ensure that the packs do not touch the chamber wall.

- **Paper/plastic pouches** must be placed with plastic surface of the pouch facing the paper surface of the next pouch.

- **Do NOT overload** the sterilizer.
9. **Sterilizing**

1. Follow manufacturer’s instructions for the specific details of operation during the sterilization process. These depend on the type of sterilizer at the health facility.

10. **Monitoring the Sterilizer**

**Complete all of the following for quality assurance of load sterility**

1. Mechanical monitoring of the time, temperature and pressure (the print out) must be reviewed by a nurse or dental therapist after each load to ensure that the set parameters of the cycle have been met.

   The printout from each load must be kept for quality assurance purposes. Place in a plastic document protector sleeve that is kept with the autoclave log.

   Document the load #, Description of contents (pack # is sufficient), etc. on the autoclave log. This is important to be able to track a failed load.

2. External chemical indicator tape must be checked on each pack ensuring that the stripes have appeared dark.

3. Internal “Comply™ Steam Chemical Integrator” indicator has been placed in each individual pack. Upon opening of the pack ensure that the black line has moved into the “accept” window of the Integrator.

4. Autoclave BI test (using “Attest™ Biological Indicators”) done with the first load of each day. Do not release the load for use until you have the results of your BI test after 48 hours of incubation time.

   - *On installation the autoclave must pass 3 consecutive cycles with Biological Indicator tests before it can be put into regular use.*

   - The Autoclave shall not be approved for use if the Biological Indicator Test fails.
Biological Indicator (BI) Testing
Directions for Use

Following based on the Attest™ 1262P Biological Indicators (brown cap vials)
As well as the Attest™ 116 Incubator 56±2°C (133±3°F)

1) Remove two B.I. vials from the same box. They must have the same lot # and expiry date. Label one vial with the date, time and Load #, place this vial into a pouch or wrapped tray. Label the other vial with the date and “C” for “Control”

2) Place the test package or pouch in with the load in the most challenging area for the steam to infiltrate. This is generally the bottom shelf near the door, over the drain. Place your “control” vial next to the incubator while you wait for the “processed” vial to come out of the autoclave.

3) Process the load.

4) After the autoclave cycle has been completed, open the door fully for 5 minutes (this allows the vial to further cool before handling.) Put safety glasses and gloves on prior to handling test vial.

5) While wearing safety glasses and gloves remove test vial pack or pouch from the autoclave and allow cooling for a further 10 minutes.

6) Remove the autoclaved BI test vial from the package and check that the strip on the outside of the vial turned from a rose color to brown. This indicates the vial was exposed to steam but does not indicate that sterilization occurred.

7) For the procedure of incubation of the test and control BI, follow the manufacturer’s instructions.

8) Allow both test and control BI to incubate for 48 hours.

You must have an autoclaved (processed) vial as well as a “control” (unprocessed) vial incubating at the same time to ensure the integrity of the Biological Indicators themselves.

9) Examine the incubator at regular intervals of 12, 18, 24 and finally 48 hours for any color change in the autoclaved test vial. A change from purple to yellow in the autoclaved vial should be acted upon immediately as this indicates that the sterilization process failed and those instruments must be processed again. It is possible in a failed process to have color changes occurring as early as 12 hours.

10) The appearance of a yellow color in the autoclaved BI vial demonstrates bacterial growth and a failure of the sterilization process.

Adopted from MLTC - 2009
A final reading of both vials after 48 hours should show:
→ the control vial has changed to yellow
→ the autoclaved vial remains purple

You may release your load of instruments for use if the above two conditions have been met.

11) Record both the “Control” BI test result and the “Autoclaved / Processed” BI test result on the Autoclave log.

12) Dispose of all BI vials into sharps container.

13) The sterilization process is considered a success when biological indicators’ results are negative after incubation, chemical indicators have reached the end point as per manufacturer’s instructions, and the physical parameters are within the ranges specified by the manufacturer as normal during the process of sterilization.
11. Storage of Sterilized Equipment

Sterility must be maintained until point of use.

1) Reprocessed medical equipment shall be stored in a clean, dry location in a manner that minimizes contamination or damage.

   a) Store items in a clean, dry, dust free area (closed shelves) with limited traffic.

   b) Store items on shelves that are at least 25 cm from the floor, 46 cm from the ceiling and 5 cm from the walls.

   c) Handle the items in a manner that prevents recontamination of the item.

   d) Protect the packages from tears, crushing, puncturing or compression.

   e) Store equipment where it is not subject to tampering.

   f) Rotate the instrument packs using the first in-first out system.

   g) Containers used to store packages must be moisture resistant and cleanable.  (Cardboard boxes must not be used)

   h) Relative humidity should be between 35% and 50%.

   i) Temperature of room should be no higher than 21°C.

2) At point of use the reprocessed medical equipment must be checked for:

   a) **Integrity** of the packaging and the device.

   b) **Validate results** of both the external chemical tape and internal Comply™ Steam Chemical Integrator (ensure that the line has crossed the “accept” threshold)

   c) **Visually inspect** the equipment for discoloration or soil. If present remove for reprocessing.

   d) Check for **defective** equipment and remove if found.

   e) If package has become **wet or damp** it should be reprocessed.

   f) **Reassemble** equipment if necessary.
12. Care and Maintenance of Sterilizer

Please refer to your Operation and Maintenance Manual for a detailed description on the care and maintenance.

References:

5. 3M™ Comply™ (SteriGage™) Steam Chemical Integrator Technical Information
6. 3M Attest™ Biological Monitoring system, Technical Product Profile, Technical service publication.
10. Canadian Standards Association CSA standards. Z 314.3-09. “Effective sterilization in Health Care facilities by the Steam process”. Mississauga, ON.
# Autoclave Log

**Name of Health Facility:**

**Autoclave:** Brand and Model

**Serial number**

<table>
<thead>
<tr>
<th>Date</th>
<th>Description of Load Contents</th>
<th>Load #</th>
<th>Type of Cycle Selected</th>
<th>Biological Indicator (BI) Result</th>
<th>Comply Integrator Control Result</th>
<th>Door Gasket</th>
<th>Maintenance Performed</th>
<th>initials</th>
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<tr>
<td>Feb 09/13</td>
<td>Total of 8 packs Biological Indicator placed in incubator at 10:35 a.m.</td>
<td>11</td>
<td>Wrapped</td>
<td>Incubation</td>
<td><em>Positive</em></td>
<td></td>
<td></td>
<td>CR</td>
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* Test (autoclaved) BI should be negative (remains Purple)

Control BI (do not autoclave) should be positive (turns yellow)

If the Test BI turns Yellow, this indicates an autoclave failure and all packs must be re-processed

**MAINTENANCE SCHEDULE**

Refer to Manual provided by the manufacturer for instructions on maintenance.
Introduction:

1. This policy applies to clients with signs and symptoms of undiagnosed respiratory infections. Facilities should ensure that infection control standards are followed during the prompt management of potentially infectious clients.
2. This policy does not deal specifically with infections potentially transmitted through the airborne route. Information on infection prevention when dealing with such infections (for example, tuberculosis, measles or chicken pox) can be found in the section on respiratory protection (components of routine practices policy), the NITHA Respiratory Protection Program document and the NITHA Sensitivity and Tight Fitting Particulate Mask (TFPM) Fit Testing Procedure.

Policy

1. Health centres should have signs in places easily seen by clients. The posted signs should have instructions to clients with symptoms of a respiratory infection to cover their mouths/noses when coughing or sneezing, use and correctly discard tissues and to perform hand hygiene after hands have been in contact with respiratory secretions.
2. Provide tissues and no touch receptacles for tissue disposal.
3. The hand hygiene facilities should be easily accessible with clear instructions on how to use them.
4. Masks should be easily accessible to coughing clients and other symptomatic patients upon entry to the health facility. Clients should be instructed on how and when to use them.
5. Education of health workers on infection prevention should be done. They should take precautions when examining such patients.
6. Clients with symptoms of respiratory infections should be encouraged to sit as far away from others as possible, ideally in a separate area.
7. Selection of the masks used by staff is based on a risk assessment of the patient’s illness, type and duration of the health worker’s interaction with the client and the likelihood of contact with droplets/aerosols.
8. If transfer is necessary, appropriate infection control measures should be followed, the transporting agency and accepting facility should also be informed of the suspected infection.

Other useful resources:
- Pandemic influenza plan.
- Canadian Tuberculosis Standards.
References

NITHA Respiratory Protection Program
For Health Care Employers/Employees

NUMBER: PHU-IPC-011

Revised:
5/17/2013
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Overview

It is an Occupational Health and Safety (OH&S) and Canadian Standards Association (CSA) requirement that any employer that may require staff to wear a respirator, (tight fitting particulate mask (TFPM), N95 type mask) must have in place a Respiratory Protection Program. In compliance with the Canadian Labor Code - Occupational Health and Safety regulations section 12 and the CSA standard Z94.4-11. Find below an extraction of the regulations and a guide to produce a Respiratory Protection Program as it relates to tight fitting particulate masks (TFPM) or N95 and equivalent masks.

History

As a result of the Canadian Conference on Personal Protective Equipment (COPE) in 1978, the COPE Technical Resource Group on Respiratory Protection was formed to prepare requirements covering good TFPM practice. Subsequently, in 1980, the task of preparing a standard was shifted to the newly formed CSA Technical Committee on Selection, Care, and Use of Respirators and the Subcommittee for the Fire Service.

In developing this Standard it was recognized that circumstances will occur where air contaminants cannot be controlled through available engineering or administrative means. In these instances, tight fitting N95 or equivalent style particulate respirators (masks) will have to be worn to prevent injury, illness, or even death.

Respiratory Protection Program

Section 1.1 Employer Responsibilities

The employers of Health Care Workers who may in the performance of their duties be exposed to infectious airborne particles have the following responsibilities as stated by the CSA standard.¹

(a) The employer shall be responsible for the preparation and implementation of written operating procedures for a respiratory protection program.

(b) The employer shall ensure that program roles are assigned to qualified persons.

(c) The employer shall ensure that the program is effective.

¹ Section 4.2 Canadian Standards Association Z94.4-11 Selection, use, and care of Respirators © CSA international.
Section 1.2 Employees/ Users` responsibilities

Employees of a company or service that may be exposed to infectious air borne particles and who have been fitted for a tight fitting particulate mask have the following responsibilities under the CSA standard;²

(a) The employee shall use the TFPM provided in accordance with the instructions and training received.

(b) Not to have anything on them that will interfere with the seal of the TFPM.

(c) Report to the supervisor any condition that impairs their ability to safely use the respirator.

Section 2 Mandatory Respiratory Protection Program Contents

A Respiratory Protection Program must consist of the following components:³

(a) Program Administration
(b) Hazard Identification
(c) Selection of the Appropriate Tight Fitting Particulate Mask
(d) Tight Fitting Particulate Mask Facial Fit
(e) Training
(f) Use of Tight fitting Particulate Masks
(g) Cleaning, Maintenance, and Storage of Tight Fitting Particulate Masks
(h) Health Surveillance of Tight Fitting Particulate Mask Wearers
(i) Program Evaluation

Section 3 Program Content Overview/Explanation

Section 3.1 Program Administration

The program administrator shall be an individual who is aware of the respiratory hazards and the work practices of the employees who may become exposed to infectious airborne particles. The administrator shall have the appropriate training and background so that, with consultation of the appropriate areas of expertise - questions, concerns and quality assurance may take place to ensure the Respiratory Protection Plan is appropriate and effective. The administrator also ensures that the program is administered according to required standard and regularly updated.

² Section 5.2 Canadian Standards Association Z94.4-11 Selection, use, and care of Respirators © CSA international.
³ Section 4.3 Canadian Standards Association Z94.4-11 Selection, use, and care of Respirators © CSA international.
Section 3.2 Hazard Identification

All respiratory hazards within the workplace that would constitute the necessity of donning a tight fitting particulate mask shall be identified and listed. Examples would be, but not limited to, SARS (Severe Acute Respiratory Syndrome), chicken pox, tuberculosis, measles and pandemic influenza.

Section 3.3 Selection of the Appropriate Tight Fitting Particulate Mask

Only NIOSH approved or equivalent tight fitting particulate masks shall be used. See 3.4.3(2) for guidelines. (NIOSH = National Institute for Occupational Safety and Health)

Section 3.4.1 Tight Fitting Particulate Facial Fit Test Overview

The degree of protection afforded by a mask that requires a tight facial seal depends on many factors and can be dependent on design, facial features of the wearer, or interference of other personal protection equipment and relate to the following;

(a) The effectiveness of the seal to the facial skin
(b) The efficiency of the filter material

Efficiency and capacity of masks are defined by the manufacturers and their instructions and recommendations shall be closely followed to ensure optimal performance and safety.

Section 3.4.2 Fitting Tests - General

A qualitative or a quantitative TFPM fitting test shall be used to determine the ability of each TFPM wearer to obtain a satisfactory fit. Qualitative will be the method of choice here in.

Please Note the Following;

(a) The wide range of face dimensions requires more than a single size of mask to be available during fit testing.
(b) A fitting test(s) shall be used to select a specific make or model of mask to be used by each individual.
(c) A fit test(s) shall be carried out at least annually or whenever work conditions necessitate a change in the type of TFPM worn. A fit test should also be carried out when a user has changes to their physical condition that could affect the fit of the respirator, when there is significant discomfort persists during use or a user seal check can’t be successfully completed.

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4 Section 9.1 Canadian Standards Association Z94.4-11 Selection, use, and care of Respirators © CSA international.
5 Section 9.1.6 Canadian Standards Association Z94.4-11 Selection, use and care of respirators. © CSA international
(d) Under no circumstances shall a person wear a TFPM for which a satisfactory facial fit has not been obtained.

Section 3.4.3 Qualitative Fit Testing (QLFT)

Bitrex™ is routinely used as a taste aversion agent in household liquids and is endorsed by the American Medical Association, the National Safety Council, and the American Association of Poison Control Centers. The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test. Please see attached MSDS sheets provided. (Section 5)

(1) Taste Threshold Screening Procedure

The Bitrex™ taste threshold screening, performed without wearing a TFPM, is intended to determine whether the individual being tested can detect the taste of Bitrex™. The following procedure is reflective of most manufacturer recommendations and is provided for an overview of the procedure. Care must be taken to ensure that the manufacturer recommendations for the test equipment you have are followed. When in discrepancy between your NIOSH approved test equipment and these instructions the recommendations of your test equipment shall prevail.

(a) During threshold screening as well as during fit testing, subjects shall wear an enclosure about the head and shoulders that is approximately 12 inches (30.5 cm) in diameter by 14 inches (35.6 cm) tall. The front portion of the enclosure shall be clear from the TFPM and allow free movement of the head when a TFPM is worn. The test enclosure shall have a ¾ inch (1.9 cm) hole in front of the test subject’s nose and mouth area to accommodate the nebulizer nozzle. Users should be informed that discomfort may arise from wearing a respirator with a fit test hood due to elevated inspired carbon dioxide levels and decreased inspired oxygen levels. This requires withholding the test so as to remove the TFPM and hood.

(b) The test subject shall don the test enclosure. Throughout the threshold screening test, the test subject shall breathe through his or her slightly open mouth with tongue extended. The subject is instructed to report when he/she detects a bitter taste.

(c) The test conductor shall spray the Threshold Check Solution into the enclosure. This Nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer. To produce the aerosol, the nebulizer bulb is firmly squeezed so that the bulb collapses completely, and is then released and allowed to fully expand. Correct use of the nebulizer means that approximately 1 ml of liquid is used at a time in the nebulizer body. An initial ten squeezes are repeated rapidly and then the test subject is asked whether the Bitrex™ can be tasted. If the test subject reports

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tasting the bitter taste during the ten squeezes, the screening test is completed. The taste threshold is noted as ten regardless of the number of squeezes actually completed.

(1) If the first response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the Bitrex™ is tasted. If the test subject reports tasting the bitter taste during the second ten squeezes, the screening test is completed. The taste threshold is noted as twenty regardless of the number of squeezes actually completed.

(2) If the second response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the Bitrex™ is tasted. If the test subject reports tasting the bitter taste during the third set of ten squeezes, the screening test is completed. The taste threshold is noted as thirty regardless of the number of squeezes actually completed.

(d) The test conductor will take note of the number of squeezes required to solicit a taste response. If the Bitrex™ is not tasted after 30 squeezes (step 10), the test subject is unable to taste Bitrex™ and may not perform the Bitrex™ fit test.

(e) If a taste response is elicited, the test subject shall be asked to take note of the taste for reference in the fit test.

(2) Mask Selection

(a) The test subject shall be allowed to pick the most acceptable TFPM from a sufficient number of TFPM models and sizes so that the TFPM is acceptable to, and correctly fits, the user.

(b) Prior to the selection process, the test subject shall be shown how to put on a TFPM, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit. A mirror shall be available to assist the subject in evaluating the fit and positioning of the TFPM.

(c) The test subject shall be informed that he/she is being asked to select the TFPM that provides the most acceptable fit. Each TFPM represents a different size and shape, and if fitted and used properly, will provide adequate protection.

(d) The test subject shall be instructed to hold each chosen face-piece up to the face and eliminate those that obviously do not give an acceptable fit.

(e) The more acceptable face-pieces are noted in case the one selected proves unacceptable; the most comfortable mask is donned and worn at least five minutes to assess comfort. Assistance in assessing comfort can be given by discussing the points in the following item (f). If the test subject is not familiar with using a particular TFPM, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.

(f) Assessment of comfort shall include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the TFPM:

   (1) Position of the mask on the nose
(2) Room for eye protection
(3) Room to talk
(4) Position of mask on face and cheeks

(g) The following criteria shall be used to help determine the adequacy of the TFPM fit:
   (1) Chin properly placed
   (2) Adequate strap tension, not overly tightened
   (3) Fit across nose bridge
   (4) TFPM of proper size to span distance from nose to chin
   (5) Tendency of TFPM to slip
   (6) Self-observation in mirror to evaluate fit and TFPM position

(h) The test subject shall conduct a user seal check, either the negative and positive pressure seal checks recommended by the TFPM manufacturer. Before conducting the negative and positive pressure checks, the subject shall be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another face-piece shall be selected and retested if the test subject fails the user seal check tests.

(i) The test shall not be conducted if there is any hair growth between the skin and the face-piece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the TFPM sealing surface. Any type of apparel which interferes with a satisfactory fit shall be altered or removed.

(j) If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician or other licensed health care professional, as appropriate, to determine whether the test subject can wear a TFPM while performing her or his duties.

(k) If the employee finds the fit of the TFPM unacceptable, the test subject shall be given the opportunity to select a different TFPM and to be retested.

(l) Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test procedure. The description of the process shall include a description of the test exercises that the subject will be performing. The TFPM to be tested shall be worn for at least 5 minutes before the start of the fit test.

(m) The fit test shall be performed while the test subject is wearing any applicable safety equipment that may be worn during actual TFPM use which could interfere with TFPM fit.

(3) Fit Test Procedure.

   (a) The test subject may not eat, drink (except plain water), smoke, or chew gum for 15 minutes before the test.
   (b) The fit test uses the same enclosure as that described in 3.4.3 (1) (a) above.
   (c) The test subject shall don the enclosure while wearing the TFPM selected according to section 3.4.3(2). The TFPM shall be properly adjusted prior to donning the enclosure.
   (d) A second Inhalation Medication Nebulizer or equivalent is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer.
   (e) As before, the test subject shall breathe through his or her slightly open mouth with tongue
extended, and be instructed to report if he/she tastes the bitter taste of Bitrex™.

(f) The nebulizer is inserted into the hole in the front of the enclosure and an initial concentration of the fit test solution is sprayed into the enclosure using the same number of squeezes (either 10, 20, or 30 squeezes) based on the number of squeezes required to elicit a taste response as noted during the screening test.

(g) After generating the aerosol, the test subject shall be instructed to perform the following exercises.

(4) Test Exercises

The test subject must perform the following test exercises;

(a) **Normal breathing.** In a normal standing position, without talking, the subject shall breathe normally.

(b) **Deep breathing.** In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.

(c) **Turning head side to side.** Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.

(d) **Moving head up and down.** Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).

(e) **Talking.** The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song.

Rainbow Passage

*When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.*

(f) **Grimace.** The test subject shall grimace by smiling or frowning. (This applies only to QNFT testing; it is not performed for QLFT)

(g) **Bending over.** The test subject shall bend at the waist as if he/she were to touch his/her toes. Jogging in place shall be substituted for this exercise in those test environments such as shroud type QNFT or QLFT units that do not permit bending over at the waist.

(h) **Normal breathing Repeated**

  **Each test exercise shall be performed for one minute except for the grimace exercise which shall be**
Respiratory Protection Program

**performed for 15 seconds.** The test subject shall be questioned by the test conductor regarding the comfort of the TFPM upon completion of the protocol. If it has become unacceptable, another model of TFPM shall be tried. The TFPM shall not be adjusted once the fit test exercises begin. Any adjustment voids the test, and the fit test must be repeated. **Every 30 seconds the aerosol concentration shall be replenished using one half the number of squeezes used initially (e.g., 5, 10 or 15).** The test subject shall indicate to the test conductor if at any time during the fit test the taste of Bitrex™ is detected. If the test subject does not report tasting the Bitrex™, the test is passed. **If the taste of Bitrex™ is detected, the fit is deemed unsatisfactory and the test is failed.** A different TFPM shall be tried and the entire test procedure is repeated (taste threshold screening and fit testing).

(5) Fitting Test Records

Records of TFPM fitting tests shall be made and kept for at least the duration of employment. The records shall include, but are not limited to;

(a) The name of person tested
(b) The date and time of tests
(c) The specific make, model, style, and size of TFPM
(d) The type of fitting test and test agent used
(e) The results of fitting tests
(f) Comments on test difficulties, interference by clothing, protective equipment that needs to be worn in conjunction with the TFPM, personal fitting problems, e.g., eye-glasses, dentures, unusual facial features, or facial hair
(g) Name of person administering the test

Section 3.5 Training

Employees assigned to jobs requiring particulate respirators will be instructed by their supervisor relative to their responsibilities in the Respiratory Protection Program. Fit testing is provided at least **every 12 months after initial fitting. If the employee would only be required to don a TFPM in rare cases of emergency, fit testing shall be carried out at least every 24 months.** In regards to instructor training the Canadian Center for Occupational Health and Safety directs to the CSA standard that states the following;  

6

(1) Fit Testing

The Fit Tester should be competent in the respiratory protection program requirements and Fit test procedure and follow the program protocols in managing the overall fit testing process.

(2) Training of TFPM Wearer

A minimum training program for every person required to wear a TFPM shall consist of:

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6 Section 8 Canadian Standards Association Z94.4-11 Selection, Use, and Care of Respirators © CSA international.
(a) Nature, extent, and effects of respiratory hazards to which the person may be exposed.

(b) Explanation of the operation, limitations, and capabilities of the selected TFPM(s);

(c) The policies and procedures for the program.

(d) Instruction in procedures for inspection, donning and removal, checking the fit and seals, and in wearing of the TFPM. Sufficient practical experience should be provided to enable the person to become thoroughly familiar and confident with the use of the TFPM;

(e) Explanation of the procedure for maintenance and storage of the TFPM;

(f) Instruction in how to deal with emergency situations involving the use of different TFPMs or the malfunction of TFPMs;

(3) Training of Supervisor

Supervisory training shall include all of the items listed above and in addition:

(a) Selection, fitting, issuance, and inspection of TFPM; and

(b) Monitoring of TFPM use.

Section 3.6 Use of Tight Fitting Particulate Masks

Tight fitting particulate masks will be used when in the clinical judgment of the practitioner there is a risk of disease transmission through the particulate pathway. N95 or equivalent masks will also be used when indicated by local protocols (eg, SARS, Tuberculosis, Pandemic Influenza). The following points will also be noted;

(a) Persons who are required to wear a TFPM shall be clean-shaven where the face-piece seals to the skin.

(b) Corrective lenses necessary to the person wearing a TFPM shall not interfere with the seal of the face-piece to the face of the wearer.

(c) No covering shall be used that passes between the sealing surface of a TFPM face-piece and the wearer’s face.

(d) Other personal protective devices or equipment shall not interfere with the seal of the face-piece to the face of the wearer.

Section 3.7 Cleaning, Maintenance, and Storage of Tight Fitting Particulate Masks

As the scope of this respiratory protection program is only in the use of disposable N95 (or equivalent) particulate respirators and surgical masks, cleaning and maintenance will not be included. However each employee will be notified of the storage location of the appropriately sized TFPM with in their clinical environment and will be reflected within the fitting/training documentation held on file in
Section 3.8 Health surveillance of TFPM wearers

Where there is doubt about the fitness or ability of a person to wear a TFPM, that person shall seek medical advice from a physician who is knowledgeable about the work and the conditions of work of that person. The physician shall inform the administrator as to the fitness or ability of that person to wear a TFPM; however, details of any medical history and examination shall not be disclosed unless consent has been obtained from the worker so examined.

Section 3.9 Program evaluation

The effectiveness of the respiratory protection program shall be periodically evaluated to ensure that wearers are being provided with adequate respiratory protection. Necessary corrective actions indicated shall be taken immediately, including the reporting of all pertinent data. This evaluation should be conducted annually or more often where required and will ensure that:

(a) The proper types of TFPM are selected
(b) The wearers are properly trained
(c) The correct TFPM are issued and used
(d) The TFPM are worn properly
(e) The TFPM are properly maintained

Wearer acceptance of tight fitting particulate masks is an important matter to be considered in evaluating the effectiveness of the respiratory protection program. Tight fitting particulate mask wearers should be consulted periodically about the following factors:

(a) Comfort
(b) Resistance to breathing
(c) Fatigue
(d) Interference with vision
(e) Interference with communications
(f) Interference with job performance
(g) Confidence in the tight fitting particulate mask`s effectiveness
Section 4 References

The following documents were referenced in the production of this document;

3. Canadian Standards Association Z94.4-11 Selection, use, and care of respirators © CSA international August 2011.
6. Centers for Disease Control and Prevention (CDC) NOISH, Frequency of Mask fit testing.
NITHA Sensitivity and Tight Fitting Particulate Mask (TFPM) Fit Testing Procedure
For use by Health Care Providers

NUMBER: PHU-IPC-011P

Revised:
5/20/2013
Section 1.1 Employee Record

Please fill in the appropriate areas as indicated during the sensitivity and fit testing procedure. Please also fill out the employee card upon completion of the testing. This card is given to the test subject after the testing procedure. The information that is gathered for this fit testing is mandatory and required to be held on file at least as long as the person remains employed by the testing employer. All information is confidential and will be handled in accordance to the H.I.P.A. Act.

1) Date of Fitting: ___________________________________________
2) Employer Name: ___________________________________________
3) Employee Name: __________________________________________
4) Testers Name: _____________________________________________
5) Test solution used: _________________________________________
6) Sensitivity (number of squeezes): _____________________________
7) Mask Model Number that Passed Fit Testing: _________________

Section 1.2 Declaration of Medical Fitness (Please don’t offer medical information)

1.2.1 Use of Bitrex

Option 1

I hereby declare that to my best knowledge I do not have an allergy to Bitrex®. I have never reacted adversely to Bitrex® in the past. I have had the procedures of sensitivity testing and fit testing explained to me. I have been asked if I would like/need to consult a medical professional prior to taking part in TFPM testing and fitting. I have decided that talking to a medical professional prior to testing and fitting is not required and all statements above are true.

Signature of test subject: _______________________________________

Signature of Test Administrator to witness: _________________________

Option 2

I hereby declare that to my best knowledge I do not have an allergy to Bitrex®. I have never reacted adversely to Bitrex® in the past. I have had the procedures of sensitivity testing and fit testing explained to me. I have been asked if I would like/need to consult a medical professional prior to taking part in TFPM testing and fitting. I have decided that it may be in my best interest/safety to discuss the sensitivity and fit testing procedures with a medical professional prior to proceeding with the testing. I understand that doing so means that I will have to return with a signed declaration from the medical professional stating that it is in fact safe for me to continue with the testing.

Signature of test subject: _______________________________________

Signature of Test Administrator to witness: _________________________
1.2.2 Ability to safely use a respirator (Answer YES or NO. Don’t provide medical information) \(^1\)

Are you aware of any condition that could prevent you from safely using the respirator? . ____________

Have you ever experienced any difficulty when using a respirator? ____________

Are you concerned about your future ability to use a respirator? ____________

If the test subject answered yes to any of the above questions, further assessment is required by a health care professional.

Signature of test subject: ________________________________

Signature of Test Administrator to witness: ________________________________

Section 2

In order to complete this procedure the person administering the test as well as the participant must initial beside each section acknowledging that the section is completed to the satisfaction of the procedure as well as to the administrator and the person receiving the fit test. Also note that if the instructions enclosed in your NIOSH approved test equipment differ from these procedures the manufacturers recommendations will prevail. This procedure is consistent with 3M FT-30 test kits.

Section 2.1 Pretest

1) I have read the Respiratory Protection Program.

2) I have discussed the following hazards that I may come into contact with while performing my duties and how they pertain to the respiratory protection program.

- 
- 
- 
- 

I also understand that not all risks can be foreseen and using my best clinical judgment will don a TFPM when I am of the opinion that the risk of communicable disease transmission through the respiratory route is present.

\(^1\)Annex E, Canadian Standards Association Z94.4-11 Selection, Use, and care of respirators
3) I understand that I have the following responsibilities under this program.²

   a) The employee shall use the TFPM provided in accordance with the instructions and training received.

   b) Not to have anything on them that will interfere with the seal of the TFPM.

   c) Report to the supervisor any condition that impairs their ability to safely use the respirator.

²Section 5.2 Canadian Standards Association Z 94.4-11 Selection, use and, care of respirators.
Section 2.2 Mask Selection

1) The following masks have been laid out to try during this mask fit session.
   a) 
   b) 
   c) 
   d) 

2) From the list above, by holding the mask up to my face and eliminating the ones that obviously are too big or too small I have chosen (a) (b) (c) (d). (Circle one).

3) I have been shown and given the opportunity to don and doff the TFPM until I feel comfortable with its use.

4) I have been shown how and given the opportunity to practice setting the strap tension until I feel comfortable with tightening the chosen TFPM.

5) A mirror has been provided to me so that along with the fit tester I can visually inspect the chosen TFPM for fit and position.

6) In regards to Fit and Position I am satisfied with all of the following;
   a) My chin is properly placed.
   b) The straps are not uncomfortable tight.
   c) There are no visual gaps across the bridge of my nose.
   d) The mask I have chosen spans the distance from my nose to my chin.
   e) The mask stays in place and doesn’t have a tendency to slip.
7) I understand that a TFPM must be as comfortable as possible to ensure they are donned when appropriate or indicated. The mask I have chosen;
   a) is comfortable on the bridge of my nose, cheeks and face.
   b) has room for eye protection.
   c) has room to talk.

8) I have located the NIOSH endorsement for the mask that I have chosen.

9) I understand that the efficiency of a TFPM is dependent on the effectiveness of the seal between my facial skin and the mask as well as the material that the mask is made from.

10) I have read the manufacturer’s instructions for the mask that I have chosen and confirmed that it is a NIOSH approved N95 mask or equivalent.

11) I have had the fit screening and fit testing procedure explained to me as follows. Sign section 1.3 when complete.

   a) Screening Procedure – Explained

   We must first find out if you are able to detect the taste of bitrex®. It is a very distinct bitter taste. To determine this I am going to place this pre cleaned hood over your head. I am going to ask you to breathe normally with an open mouth and your tongue extended. I will then pump bitrex® into the hood in a controlled fashion. I need you to tell me the instant you taste the bitrex®. If after 30 pumps of bitrex® into the hood enclosure you cannot detect the taste of the bitrex® you are unable to be fit tested by this method.

   b) Testing Procedure – Explained

   Once we have determined that you can in fact detect the taste of bitrex® you will be allowed to have a drink of plain water. This is to wash the taste of the bitrex® out of your mouth. Once you can no longer taste the bitrex® from the screening procedure you will don the chosen mask in the manner recommended by the manufacturer and as practiced. I will then place the pre cleaned hood over your head again and release
bitrex® in to the enclosure in a controlled fashion. You will be asked to perform the following exercises for a duration of one minute each and you are to tell me the moment you detect the taste of bitrex®. Again breathing with your mouth open and tongue protruded.

1) Normal Breathing – standing, no talking and breathing normally.
2) Deep Breathing – standing breathing slow and deep taking care not to hyperventilate
3) Turning Head Side to Side
4) Moving Head up and Down
5) Talking
6) Jogging in Place
7) Normal Breathing Again

If at the end of the exercises you do not detect the taste of bitrex® the mask you have chosen has passed the test for you.

Section 3.1 Test equipment setup

Please note the following necessary equipment. Please assemble the nebulizer unit as per the manufacturers recommendations and ensure both plugs are unplugged before use.

a) Stop watch or countdown timer
b) Testing hood ensure with no damage and wiped clean with supplied wipes
c) Hood collar
d) One “sensitivity” labelled nebuliser
e) One “test solution” labelled nebuliser
f) One bottle Bitrex® sensitivity solution
g) One bottle Bitrex® test solution
h) Mirror
i) Basin or sink to rinse mouth after screening and testing.
Section 3.2 Bitrex® sensitivity screening test

1) I (test subject) confirm that I have not eaten smoked or drank (accept for plain water) in the 15 minutes prior to be fit tested.

2) Without the TFPM selected in section 1.1 and 1.2, don the enclosure (hood) as per the manufactures recommendation/guidelines.

3) Fit tester will now attach the collar to the hood and place it over the test subjects head so that it rests on their shoulders and that there is about six (6) inches of space between the subjects face and the window of the Hood.

4) Instruct test subject to breathe through their mouth with tongue extended and to notify you the moment they taste bitrex®.

5) Using the nebulizer labelled “sensitivity test” instill 1-4cc of “sensitivity” solution into the nebuliser. Through the hole in the hood nebulise ten squeezes of the bulb, fully collapsing the bulb with each squeeze and allowing it to fully expand between squeezes. Visualise nebulised bitrex®.

6) Ask the test subject if they can detect the bitter taste of the solution. If they can record the number ten in the box provided at the bottom of this section.

7) If the test subject does not detect the bitrex® inject an additional ten squeezes into the hood. Repeat as necessary to a maximum of thirty squeezes. Record the appropriate multiple of ten depending on when the bitrex® was detected.

8) If after thirty squeezes the test subject does not detect the bitter taste of bitrex® they are not able to be fit tested with bitrex®. The qualitative sensitivity procedure may be repeated with the “sweet” solutions with the same procedure. If the same results are yielded the subject cannot be qualitatively tested and must be quantitatively tested which is out of the scope of this program.

9) Remove the test hood and allow the test subject a few minutes to clear the taste of bitrex® from their mouth. It may be helpful to allow the test subject to rinse their mouth with water.

10) Record as below and wipe the inside of the hood with the provided wipes.

<table>
<thead>
<tr>
<th>Number of Squeezes when detected</th>
<th>Initials</th>
<th>Did Not Detect Bitrex®</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Squeezes when detected</th>
<th>Initials</th>
<th>Did not detect Sweet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Section 4.1 Mask Fit Test**

1. Have the Test subject don the mask selected in section 1.2 as per the manufacturers recommendations and as practiced

2. Place hood enclosure over the test subjects head. (section 3.1(3))

3. Using the nebulizer marked “Fit Test” instill 1-4ml of the solution marked “test solution”.

4. Insert nebulizer into the hole in the front of the hood as in the sensitivity test and instill the number of squeezes that was recorded during the sensitivity test. A minimum of ten squeezes is required.

5. After instilling the test solution into the hood have the test subject perform the exercises in section 1.2(11) for 60 seconds each. During the exercises instill one half the initial number of squeezes every 30 seconds to maintain concentration.

6. The test is terminated immediately if the test subject detects the taste of bitrex as this indicates an improper fit. If this happens wait 15 minutes and repeat the sensitivity test.

7. A second failure may indicate that a different size or type of TFPM is needed.

8. If the entire procedure is completed without the test subject detecting the taste of bitrex, the test is successful and indicates an appropriate TFPM for the test subject. Record the type and size of TFPM that was successful on the provided cards and attach one to this record per section 3.4.3(5) of the Respiratory Protection Plan.

9. Periodically check the nebulizer for clogging and if found, clean with water and retest.

10. At the end of the testing session wipe the hood with the provided wipes and rinse and dry the nebulisers with warm water and return to the manufactures box.
**Introduction:**
A sharp is a device that can cause a penetrating injury. Examples of sharps are needles, blades, glass and other instruments that could cause a puncture, cut or abrasion. When such objects are handled, there is a potential for transmission of blood borne infections. Therefore care must be exercised.

**Purpose:**
To prevent the risk of sharp injuries and the resulting exposure to pathogens.

**Policy**
1. Health centres are responsible to provide a safe working environment. Written policies and procedures and equipment for the safe handling and disposal of sharps should be in place. Staff should also be aware of the procedure to follow in case of an injury by a sharp object (Refer to the “Guidelines for the management of potential exposures to Hepatitis B, Hepatitis C, HIV and recommendations for Post-Exposure Prophylaxis” by Saskatchewan Health and the document on “occupational exposure to blood-borne pathogens” by Canadian Nurses Association).
2. Every health worker is responsible for the safe use and disposal of any sharp object they use.
3. Staff should be educated about the risks associated with sharps, including their safe disposal in puncture-resistant containers.
4. Prevent injury by using safety engineered needles.
5. Needles must never be re-capped.
6. All sharps must be disposed of in a designated sharps container.
7. Sharps containers should be placed at or near the point-of-use to permit safe one-handed disposal. They must not be accessible to persons not intending to utilize them especially children.
8. Sharp containers must be rigid, puncture resistant, closable, and leak proof. They should also be resistant to impact rupture and corrosion. In addition they must be of a size large enough to easily accommodate the devices intended to be disposed in them. Never force a sharp object into the container.
9. Sharp containers must be used and replaced according to manufacturer’s instructions. Sharp containers must never be over filled (containers are full when the sharps have reached the fill line). Securely close or seal the lid of the sharp container before disposal.
10. Never place your hand into a sharp container e.g. while attempting to pick out something.
11. Never manipulate needles (e.g. bending, breaking or attempting to remove a needle from the body of the syringe).
12. Be careful when handling laundry.
13. For storage and transportation to the final waste disposal ground, refer to the biomedical waste management guidelines and the policy on transportation of dangerous goods.
**Procedure for safe disposal of a sharp object abandoned at any place within a health facility**

1. Inspect the area for presence of blood spills and if so follow the policy on blood and body substance spillage.
2. Don the appropriate Personal Protective Equipment (gloves and other protection depending on the circumstance).
3. It’s ideal to take the sharps container to the needle and syringe. Carry the sharps container by the handle away from the body.
4. Never recap the needle.
5. Use appropriate equipment (e.g. tongs) to remove the sharp. If no equipment is available, pick up the needle and syringe carefully with the needle furthest away from your fingers and body.
6. Place the needle carefully in the approved sharps container (with qualities described above).
7. The supervisor or any other person responsible at the health centre should be notified about the abandoned sharp object incident.

**References**

1. PAPHR (Prince Albert Parkland Health Region) infection control policies and procedures manual.
**Introduction:**

Spills of blood and other body substances (like faeces, urine, emesis) are a potential source of infection if not dealt with appropriately. Cleaning depends on the type and amount of spill.

**Policy**

Spills of blood and other body substances should be cleaned immediately.

1. Each health centre should clearly define whose responsibility it is to clean the spill during all hours when a biological spill might occur.
2. If there is a staff exposure to the blood or other body substances, follow the exposure control plan\(^1\).
3. Treat contaminated disposable items as clinical waste.
4. Use of carpets is discouraged in areas like procedure rooms where spillage of blood or other body substances could occur.

**Procedure**

1. Gather the materials needed for the cleaning (Personal Protective Equipment -PPE, disinfectant, absorbent material etc.). Select PPE depending on your assessment of type and amount of spillage.
2. Minimise movement around the spill area.
3. Inspect the area to assess degree of spillage and presence of other items like broken glass and other sharps.
4. Don the PPE. Put on gloves and if you anticipate splashing put on goggles, a mask and a gown as well.
5. If broken glass or other sharps are present, dispose with care in an approved puncture proof container.
6. Use paper towels or other absorbent material to confine and contain the spill.
7. Wipe as much of the spill as possible and discard in a regular waste receptacle but if the material are so wet that you can squeeze blood out of them segregate into a biomedical waste container. Take care during the clean-up process to avoid splashing.
8. Place soaked laundry items in a leak proof bag.
9. Use a hospital grade disinfectant to disinfect the entire area. Use the contact time recommended by the manufacturer.
10. Clean the area to remove any remaining disinfectant. Allow the area to dry.
11. Remove the PPE and discard the disposable ones. The re-usable clothing should be placed in a laundry bag. Decontaminate any re-usable PPE like goggles.
12. Perform hand hygiene.

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\(^1\) Refer to the “Guidelines for the management of potential exposures to Hepatitis B, Hepatitis C, HIV and recommendations for Post-Exposure Prophylaxis” by Saskatchewan Health and the document on “occupational exposure to blood-borne pathogens” by Canadian Nurses Association.
References


**Introduction and Purpose:**

This guideline is intended for the handling, storage, transport and disposal of Biomedical Waste in a manner that is safe for the waste handlers, the public and the environment.

**Definition of Biomedical Waste**

"...means a portion of medical wastes that require special precautions due to the waste being: infectious; sharps; cytotoxic; or especially sensitive due to the nature of the waste (i.e., human body parts).

**Policy:**

- All biological waste shall be handled, stored, transported and disposed of according to Transportation of Dangerous Goods Act and Regulations and the Saskatchewan Biomedical Waste Management Guidelines, February 2008.
- Infection control precautions shall be used to minimize the risk of contamination by biomedical waste.
- All employees handling, transporting and disposing of biomedical waste shall receive proper education and training.

**Procedure:**

1. Separate waste into classifications as described in Table 1: Waste Segregation Chart.

2. Store or hold in a storage area that meets the following:
   - Totally enclosed and separate from supply rooms or food preparation areas;
   - Lockable and access restricted to authorized personnel only;
   - Identified as containing biomedical waste with biohazard symbol clearly displayed;
   - Never used for storage of materials other than waste (Note: In cases where the storage area is used for both general and biomedical waste storage, care shall be given to prevent contamination of general waste from biomedical waste;
   - Permanently marked to prevent recycling as a food storage appliance (as in the case of a domestic type freezer or cold storage unit);
   - Kept at a temperature of 4°C or lower for material stored for more than four (4) days.
   - Thoroughly cleaned, including floors, walls and ceilings in accordance with the facility’s established procedures.


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1 Saskatchewan Biomedical Waste Management Guidelines, February 2008, Page 6
4. Treatment and disposal shall follow the Saskatchewan Biomedical Waste Management Guidelines, February 2008. Refer to Table 1: Waste Segregation Chart.

References

3. Guidelines for Waste Management, Prince Albert Parkland Health Region Infection Control, September 2011
<table>
<thead>
<tr>
<th><strong>Definition (Saskatchewan Biomedical Waste Management Guidelines, February 2008)</strong></th>
<th><strong>Human Blood &amp; Body Fluids Waste</strong></th>
<th><strong>Microbiology waste</strong></th>
<th><strong>Sharps</strong></th>
<th><strong>Special Precaution Waste</strong></th>
<th><strong>Human Anatomical Waste</strong></th>
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<tr>
<td>Waste that consists of fluid blood, blood products and body fluids used for diagnosis or removed during surgery, treatment or autopsy and any other materials that have contacted this waste and are saturated or dripping with blood.</td>
<td>Waste that consists of all microbiology laboratory cultures (whether positive or negative), stocks or specimens of microorganisms, live or attenuated vaccines, human or animal cell cultures used in research as well as laboratory material that has come into contact with such.</td>
<td>Waste that consists of any objects that can penetrate the skin or plastic disposal bags and those that have, or are likely to, come in contact with infectious agents, (i.e., hypodermic needles, syringes, with or without the attached needle, scalpels, lancets, broken pipettes, broken blood tubes, retorts, broken culture dishes, applicator sticks, microscope slices).</td>
<td>Waste that includes body wastes, microbiology laboratory wastes, blood and body fluids, dressings, sharps and virtually all other waste types associated with patients or animals where medical personnel have identified that the waste is likely to contain a pathogen that usually produces very serious disease and may be readily transmitted from one individual to another or from animal to human directly or indirectly or by causal contact. (including disposable supplies).</td>
<td>Waste that consists of human tissues, organs and body parts, including those parts that have been preserved, but excludes teeth, hair and nails.</td>
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**Exempt Human Specimens**
Patient specimens with a minimal likelihood of having pathogens present. Exemption does not include any biological materials being tested for pathogens.
- Blood or urine test to monitor cholesterol/glucose/hormone
- Liver or kidney function for patients with non-infectious disease
- Therapeutic drug monitoring
- Tests required for non-infectious monitoring of patients

**Packaging & Labelling**
| Biological Substance, Category B UN3373 TDG Nurses Manual, Section 3 | Biological Substance, Category B UN3373 TDG Nurses Manual, Section 3 with the following exception … Exempt Human Specimen: not | Biological Substance, Category B UN3291, or UN3373 if shipped with other TDG Nurses Manual, Section 3 | Biological Substance, Category B UN3373 TDG Nurses Manual, Section 3 | Biological Substance, Category B UN3373 TDG Nurses Manual, Section 3 |
**Table 1: Infectious Medical Waste Segregation Chart**

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<th>Transportation</th>
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**Note:** Items that have had contact with blood, exudates, or secretions are not considered biomedical waste if dry.

- **Liquid wastes,** including bed bath wastes, must be treated by dilution with a sodium hypochlorite (5.25%) solution to a 1:5 ratio. Let stand 24 hours and pour into wide mouth polypropylene containers. These should then be autoclaved and carefully poured into the sanitary sewer system; and

- **Needles, syringes and solid laboratory wastes** shall be placed in puncture resistant containers, double bagged in autoclave bags, autoclaved and then incinerated. Bagged wastes, where necessary, shall be placed within another

- **Infectious sharps:**
  - Biomedical waste treatment and then disposal at a dedicated site at a permitted waste disposal ground; and
  - Wastes may be collected at a facility (eg: health facility or a sharps wastes recovery program drop-off site) then transported to a biomedical waste treatment facility.

- **All Other Sharps Wastes:**
  - Biomedical waste treatment prior to disposal at a waste disposal ground which has a portion of the site dedicated for the disposal of biomedical waste. Care must be taken to ensure that the sharps wastes containers are not subject to direct compacting by heavy equipment.

- **Incineration is generally recommended at existing crematoria/hospital incinerators or buried at a cemetery. Disinfection of these wastes prior to disposal is not required or recommended.**
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<td>At a collection facility (health facility that accepts sharps wastes from external sources or a sharps wastes recovery program drop-off site); At a waste disposal ground which has a portion of the site dedicated for the disposal of biomedical waste where immediate interment of the sharps wastes should take place. Care must be taken to ensure that the sharps wastes containers are not subject to direct compacting by heavy equipment; Encapsulation of the sharps wastes and disposal at a waste disposal ground; or Where none of the above is available or practical, a biomedical waste carrier for transportation</td>
<td>suitable container for transport to the approved incinerator. Must be transported separately from all other wastes.</td>
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</table>
**Introduction and purpose:**

Immunization is a vital component of Infection Prevention which protects Health Care Workers (HCWs) from acquiring a wide range of communicable diseases (Vaccine preventable diseases). It is an Occupational Health and Safety Requirement.¹

Immunization of Health Care Workers within the NITHA partnership shall be guided by the Saskatchewan Immunization Program as outlined in the *Saskatchewan Immunization Manual* which can be obtained from [http://www.health.gov.sk.ca/immunization-manual](http://www.health.gov.sk.ca/immunization-manual). All Health Care facilities should have a copy of this manual.

**Policy**

1. Health centres are responsible to provide a safe working environment. It is the responsibility of every employer to ensure that timely and proper measures are taken to immunize all HCWs against vaccine preventable diseases. All employees should know the person designated for this responsibility.

2. A HCW is any individual whether clinical or non-clinical employed by the First Nation Jurisdiction and includes practitioner staff, those in special and long-term care facilities and Health Care Students. Private personal care homes are excluded.²

3. The immunization or immunity status of each HCW should be obtained at the time of initial employment. See Table 1, *Recommended vaccines for Health care Workers.*²

4. The complete immunization history of all staff should be obtained.²

5. Those employees without documented evidence of adequate immunity or those who can’t provide acceptable immunization history should be offered immunizations at the earliest possible opportunity.²

6. Employees should maintain records of all provided immunizations, serologic and tuberculin skin test results. HCWs should also be provided with a copy of these records which they should keep.²

7. There should be an immunization recall system to ensure immunization series are completed².

8. Please obtain more details and other recommendations about immunization of HCWs and Health Care students from Chapter 7 of the *Saskatchewan Immunization Manual.*

*If you have any questions on this and other topics on immunization, please contact Shirley Woods, the Nurse Epidemiologist with NITHA; 306-953-0672, swoods@nitha.com*

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²The Saskatchewan Immunization Manual, Chapter 7, Immunization of special populations.

**Recommended vaccines for Health Care Workers**³
- Refer to Chapter 10, *Biological Products* (*Saskatchewan Immunization Manual*) for specific vaccine information.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Immunity Criteria</th>
<th>Recommendations</th>
</tr>
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</table>
| Td/Tdap | Documentation of a 3-4 dose primary series, with last dose given < 10 years ago. | Td vaccine recommended every 10 years after primary series.  
Adults 18 years and older are eligible for one Tdap vaccine to replace a Td vaccine. |
| IPV     | Documentation of a 3-dose primary series given by any route. | Reinforcement (booster) doses are not publicly funded or recommended after a primary series for HCWs. |
| HB      | Documentation of a 2 or 3 dose HB series and adequate serologic antibodies at least 4 weeks post immunization; or Serological evidence of previous HB infection (anti-HBs+ & anti-HBc+; or HBsAg+ & Anti HBc IgM). | If titres are < 10 IU/L anytime after the completion of a primary HB series, refer to Chapter 7, Section 3.2, *Health Care Workers* (*Saskatchewan Immunization Manual*) for recommendations.  
Non-responders that have completed 2 HB immunization series are unlikely to benefit from further HB immunization and are considered indefinitely susceptible to HB virus. They must receive 2 doses of HBIG one month apart if exposed. |
| Influenza | None. | Annual immunization. |
| Varicella | Serological evidence of VZV IgG antibodies; or Documentation of an age appropriate immunization series; or Self-reported varicella or herpes zoster disease ≥ 1 year of age. | Publicly funded for those born since January 1, 1993.  
Adults require 2 doses six weeks apart.  
Contraindicated during pregnancy.  
Counsel women to avoid pregnancy for 1 month postimmunization. |
| Measles | Serological evidence of measles IgG antibodies; or Documentation of 2 doses of measles-containing vaccines for all HCWs. | Refer to Chapter 5, Appendix 5.2: *Adult Eligibility for Publicly Funded MMR Vaccine* (*Saskatchewan Immunization Manual*) to assess MMR dose eligibility.  
MMR vaccine is publicly funded for HCWs. Adults require 2 doses four weeks apart.  
Contraindicated during pregnancy.  
Counsel women to avoid pregnancy for 1 month post-immunization. |
| Mumps | Serological evidence of mumps IgG antibodies; or Documentation of 2 doses of mumps-containing vaccines for all HCWs. | Refer to Chapter 5, Appendix 5.2: *Adult Eligibility for Publicly Funded MMR Vaccine* (*Saskatchewan Immunization Manual*) to assess MMR dose eligibility.  
MMR vaccine is publicly funded for HCWs. Adults require 2 doses four |
Rubella

- Serological evidence of rubella IgG antibodies; or
- Documentation of 1 dose of rubella containing vaccine for all HCWs.

- Refer to Chapter 5, Appendix 5.2: Adult Eligibility for Publicly Funded MMR Vaccine (Saskatchewan Immunization Manual) to assess MMR dose eligibility.
- MMR vaccine is publicly funded for HCWs. Adults require 2 doses four weeks apart.
- Contraindicated during pregnancy. Counsel women to avoid pregnancy for 1 month post-immunization.

3The Saskatchewan Immunization Manual, Chapter 7, Immunization of special populations, Section 3.2.1, Recommended vaccines for health care Workers and Healthcare students.

References