

Glove Use and Selection

Note: These recommendations are intended to be used with, and to supplement the Healthcare Facility Design Recommendations. Terms in bold are defined in the **Definitions** section.

If you have any questions or comments contact IPC at ipcsurvstdadmin@ahs.ca.

Best practice recommendations

Purpose

- To outline the selection and use of non-sterile and sterile gloves
- To minimize the risk of contamination of healthcare worker's hands and the transmission of microorganisms to patients*, the environment, surfaces, or staff

Note: If specific program protocols, e.g., pharmacy, Nutrition and Food Services (NFS) recommendations vary from the general recommendations provided in this guideline, refer to, and follow department specific guidance. NFS staff working in food services areas comply with Occupational Health and Safety and Public Health Food Regulations enforced by [Environmental Public Health](#).

Application

These recommendations apply to all Alberta Health Services (AHS) staff, medical staff, students and other persons acting on behalf of AHS.

IPC practices

1. General IPC principles – When to use gloves

The decision on whether or not to wear gloves is based on Routine Practices point of care risk assessment. Gloves are one type of personal protective equipment.

1.1 [Routine Practices](#) are to be used in the care of all patients at all times to reduce the risk of disease transmission. Routine Practices include:

- [point-of-care risk assessment](#) (PCRA)
- [hand hygiene](#) (HH)
- [personal protective equipment](#) (PPE)

1.2 Gloves are not required for routine patient care activities when contact is limited to intact skin unless the patient is on [Contact Precautions](#) or during an [outbreak](#).

2. General IPC principles – Why to use gloves

Select gloves appropriate to the proposed task and the materials being handled. (For more information refer to resource link: [Glove Selection Algorithm](#))

2.1 Gloves are worn to:

- reduce the risk of staff exposure to blood, body fluids, secretions and excretions
- reduce the transmission of microorganisms
- prevent injury e.g., when handling chemicals, disinfectant wipes, waste

2.2 Clean, non-sterile examination gloves are required for contact with mucous membranes, non-intact skin and when there is risk, or potential risk, of exposure to blood and body fluids.

2.3 Sterile gloves are used for invasive procedures and contact with sterile sites.

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- Sterile gloves, available in both latex and nitrile, are worn to protect patients from contamination during an invasive procedure and to provide protection for the wearer. Sterile gloves have specific characteristics such as thickness, elasticity and strength that affect performance and use.
- Patients with known or suspected latex allergy must not be exposed to latex.

2.4 Use non-powdered gloves.

2.5 Double gloving (wearing of inner and outer gloves) is not recommended for routine use. Double gloving is recommended during surgery at high risk of glove perforations as it minimizes the risk of exposure to blood during surgery. If the outer glove becomes contaminated or tears, the inner glove offers protection until the gloves can be removed and replaced. Double gloving may be indicated for:

- some surgical procedures, e.g., orthopaedics, maxillofacial surgery
- chemotherapy and biotherapy administration, safe handling and disposal
- protocols for specific diseases, e.g., [Viral Hemorrhagic Fever](#).
- environments where gloves may be damaged or grossly contaminated during critical patient care events, e.g., motor vehicle accident.

2.6 Protective gloves may be required to prevent injury due to other identified risks, e.g., contact with chemicals, sharps, broken glass, and patient aggression. (For more information refer to resource link: Protective Gloves)

3. General IPC principles – How to use gloves

Glove use is not a substitute for hand hygiene. Hand hygiene is the single most important practice to reduce the transmission of microorganisms.

3.1 In alignment with the AHS 4 Moments for [Hand Hygiene](#) hand hygiene is performed:

- before gloves are removed from the glove box (non-sterile) or package (sterile) to prevent contamination of the box or package and to ensure hands are clean under the gloves. If possible, leave gloves in their original box or package until they are donned. In some settings, e.g., Emergency Medical Services, it may not be practical to carry a box of gloves; however, gloves must be kept clean until use. For example, the staff member performs hand hygiene prior to accessing gloves and places them into a cleaned and disinfected pouch; new disposable bag; freshly laundered coat; or clean uniform pocket.
- after doffing gloves to remove contamination on hands that may have occurred during use due to natural glove micro-tears or during glove removal.

3.2 Gloves that touch anything unclean, e.g., surfaces, objects, face, pockets, are contaminated and become a means for spreading micro-organisms. Remove contaminated gloves, discard and perform hand hygiene:

- between patients;
- between different procedures on the same patient, when moving from a dirty task to a clean task (e.g., between catheter care and intravenous care);
- immediately after completing a task prior to touching the environment;
- during lengthy procedures or when holes or tears are noticed;
- before leaving a patient room/environment unless handling grossly contaminated equipment, e.g., bedpan. If gloves must be worn in a hallway avoid touching anything with gloved hands, especially environmental surfaces.

- 3.3 Use only AHS approved hand hygiene products, e.g., Alcohol-Based Hand Rub (ABHR), soap and hand lotion, for hand hygiene.
- 3.4 Hands must be completely dry before donning gloves.
- 3.5 Never reuse, wash, or apply ABHR to single-use disposable gloves.
- 3.6 Contact AHS Workplace Health and Safety (WHS) for guidance regarding staff unable to perform hand hygiene in accordance with the AHS Hand Hygiene Policy e.g., staff wearing casts, dressings or cotton gloves, skin integrity issues.

Recommendations

1. Glove handling, management and procurement

Glove handling, management and procurement support proper glove use.

- 1.1 Gloves are available in various sizes, e.g., small, medium or large and extended cuff, at point-of-care.
- 1.2 Follow manufacturers' instructions for expiry dates and glove storage.
- 1.3 Train staff to correctly don and doff gloves. For further information refer to:
 - [Appendix A: Donning and Doffing Non-Sterile and Sterile Gloves](#)
 - Resource Links on donning and doffing gloves
 - IPC External Website [personal protective equipment](#)
 - [Guideline for Asepsis for Invasive Surgical Procedures Conducted in Community-based Health Care Settings](#) regarding surgical hand antisepsis and open and closed gloving techniques, pages 6-13.

Definitions

Closed-gloving technique means a gloving technique in which the hands are not extended from the sleeves and cuffs when the gown is put on. Instead the hands are pushed through the cuff openings as the gloves are pulled into place.

Disposable means use once and discard.

Donning means to put on (an article of clothing or to wear).

Doffing means to remove (an article of clothing or to wear).

Double Gloving means wearing two pairs of gloves (inner and outer layer) to provide increased protection from needle penetration and the transmission of body fluids or chemical exposure.

Invasive procedure means a procedure that invades (enters) the body, usually by cutting or puncturing the skin or by inserting instruments or hands into the body. Examples include, but are not limited to: surgical procedures; insertion of central venous catheters, chest tubes, and percutaneous drains, and vaginal exams during labour.

Open-gloving technique means a gloving technique in which the hands slide all the way through the sleeves and cuffs when a sterile gown is put on prior to donning sterile gloves.

Point-of-care means the area or space where patient care is being provided.

Point-of-care risk assessment (PCRA) means the health care worker evaluation of the likelihood of exposure to an infectious agent, for a specific interaction with a specific patient in a specific environment. The

health care worker makes decisions such as patient room placement and choice of personal protective equipment based on the PCRA.

Procedure or examination gloves means disposable sterile or non-sterile gloves with a Class II Medical Device License from Health Canada

- **Non-sterile** means clean gloves for medical use worn to protect the wearer from sources of contamination.
- **Sterile** means gloves that are free of all viable microorganisms. Sterile procedure/exam gloves may be used during non-surgical procedures that access sterile sites (e.g., urinary catheterization, acute wounds). Sterile gloves protect both the wearer and the patient from contamination.

Puncture resistant gloves means gloves that resist laceration made in a variety of materials, e.g., steel mesh, Kevlar™, leather, knitted cut-resistant yarn, worn under latex, vinyl, or nitrile gloves.

Routine Practices means the infection prevention and control measures used in the care of all patients at all times to minimize or prevent health care associated infections in the healthcare setting.

Staff means employees; independent service providers or contracted service providers; midwifery staff or other health professionals; students or volunteers; or other persons acting on behalf of Alberta Health Services.

Resources

1. [Donning and Doffing Non-Sterile Gloves](#)
2. [Donning and Doffing of Sterile Gloves When a Sterile Gown is Not Worn](#)
3. [Glove Box Placement](#)
4. [Glove Selection Algorithm](#)
5. [Glove Use – Practice Scenarios](#)
6. [Protective Gloves](#)

References

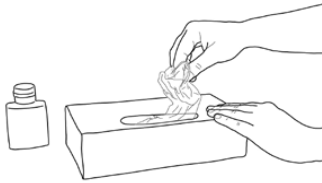
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Appendix A: Donning and doffing non-sterile and sterile gloves

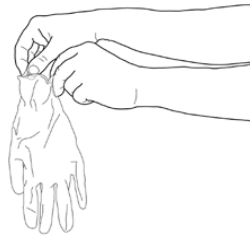
- Part 1: Donning and Doffing Non-Sterile Gloves from World Health Organization. 2009. Glove Use Information Leaflet. [Leaflet] Retrieved from http://www.who.int/gpsc/5may/Glove_Use_Information_Leaflet.pdf.

Perform Hand Hygiene with alcohol-based hand rub (ABHR) before touching the glove box and accessing gloves

I. HOW TO DON GLOVES:



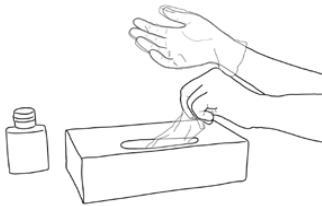
1. Take out a glove from its original box



2. Touch only a restricted surface of the glove corresponding to the wrist (at the top edge of the cuff)



3. Don the first glove



4. Take the second glove with the bare hand and touch only a restricted surface of glove corresponding to the wrist

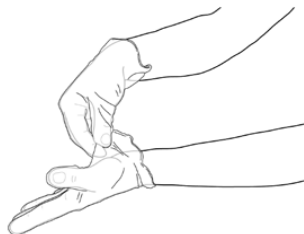


5. To avoid touching the skin of the forearm with the gloved hand, turn the external surface of the glove to be donned on the folded fingers of the gloved hand, thus permitting to glove the second hand

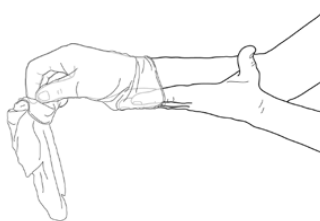


6. Once gloved, hands should not touch anything else that is not defined by indications and conditions for glove use

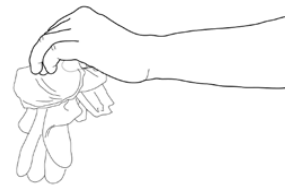
II. HOW TO REMOVE GLOVES:



1. Pinch one glove at the wrist level to remove it, without touching the skin of the forearm, and peel away from the hand, thus allowing the glove to turn inside out



2. Hold the removed glove in the gloved hand and slide the fingers of the ungloved hand inside between the glove and the wrist. Remove the second glove by rolling it down the hand and fold into the first glove



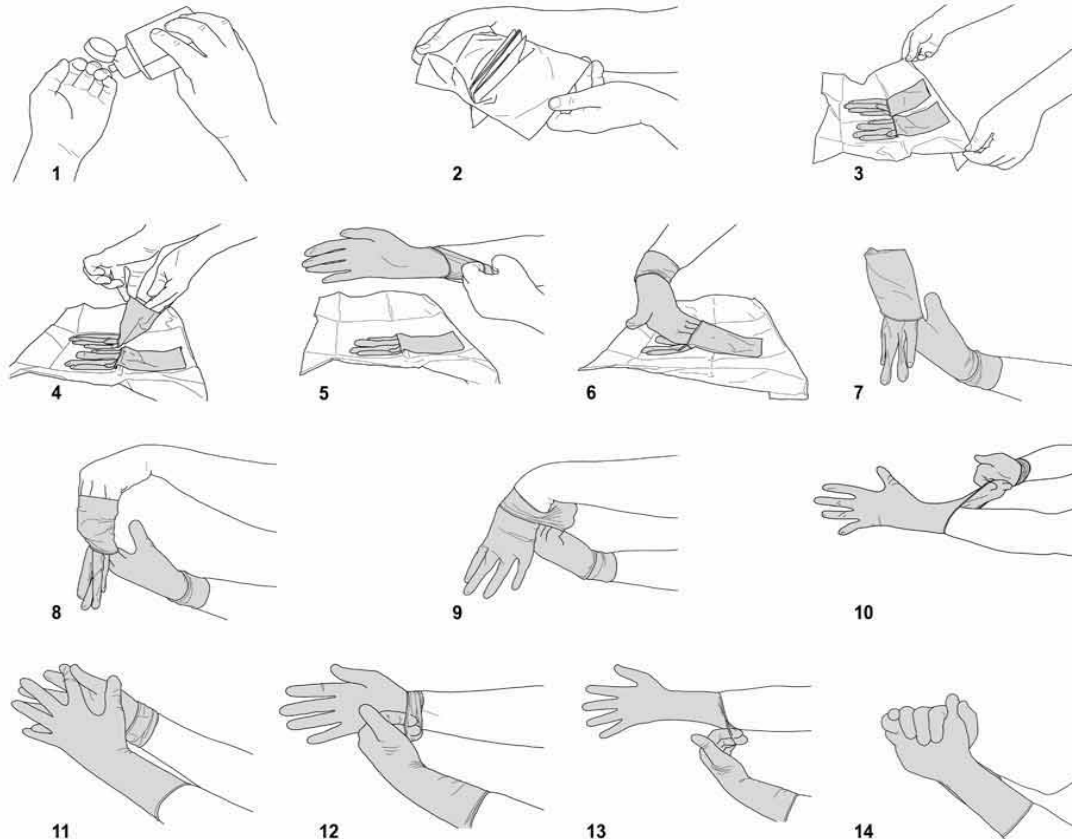
3. Discard the removed gloves

4. Then, perform hand hygiene by rubbing with an alcohol-based handrub or by washing with soap and water

- Part 2: Donning Sterile Gloves from World Health Organization. 2009. Glove Use Information Leaflet. [Leaflet] Retrieved from http://www.who.int/gpsc/5may/Glove_Use_Information_Leaflet.pdf.

The purpose of this technique is to ensure maximum asepsis for the patient and to protect the health-care worker from the patient's body fluid(s). To achieve this goal, the skin of the health-care worker remains exclusively in contact with the inner surface of the glove and has no contact with the outer surface. Any error in the performance of this technique leads to a lack of asepsis requiring a change of gloves.

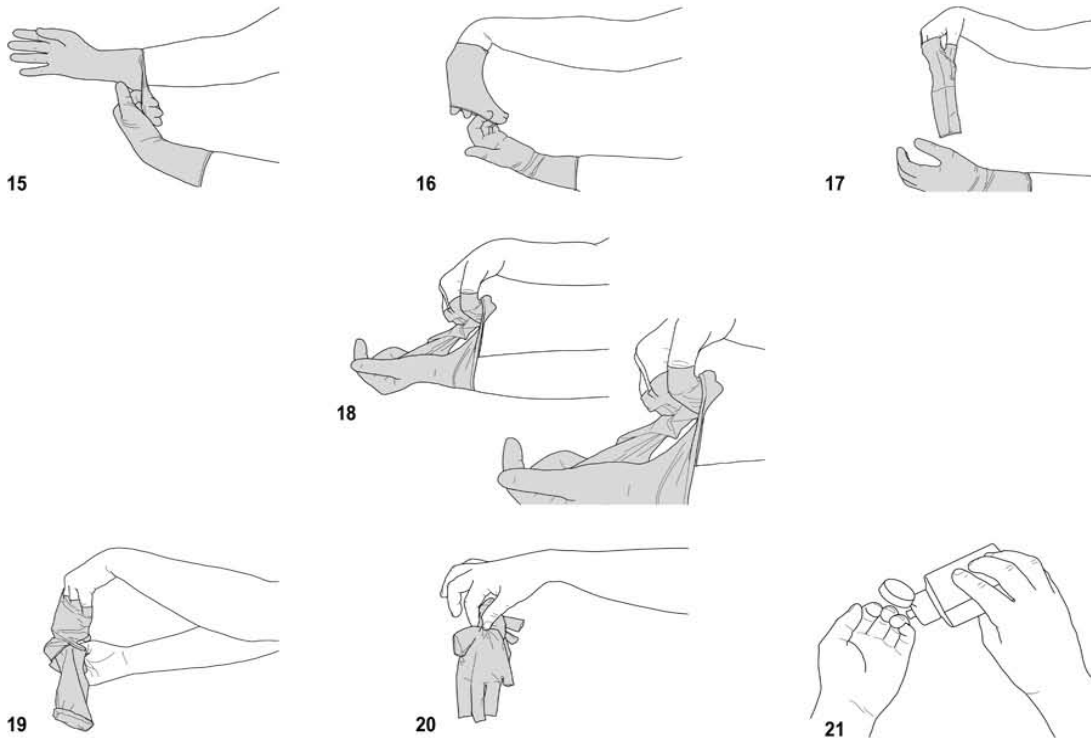
I. HOW TO DON STERILE GLOVES



1. Perform hand hygiene before an "aseptic procedure" by handrubbing or hand washing.
2. Check the package for integrity. Open the first non-sterile packaging by peeling it completely off the heat seal to expose the second sterile wrapper, but without touching it.
3. Place the second sterile package on a clean, dry surface without touching the surface. Open the package and fold it towards the bottom so as to unfold the paper and keep it open.
4. Using the thumb and index finger of one hand, carefully grasp the folded cuff edge of the glove.
5. Slip the other hand into the glove in a single movement, keeping the folded cuff at the wrist level.
- 6-7. Pick up the second glove by sliding the fingers of the gloved hand underneath the cuff of the glove.
- 8-10. In a single movement, slip the second glove on to the ungloved hand while avoiding any contact/resting of the gloved hand on surfaces other than the glove to be donned (contact/resting constitutes a lack of asepsis and requires a change of glove).
11. If necessary, after donning both gloves, adjust the fingers and interdigital spaces until the gloves fit comfortably.
- 12-13. Unfold the cuff of the first gloved hand by gently slipping the fingers of the other hand inside the fold, making sure to avoid any contact with a surface other than the outer surface of the glove (lack of asepsis requiring a change of gloves).
14. The hands are gloved and must touch exclusively sterile devices or the previously-disinfected patient's body area.

- Part 3: Doffing Sterile Gloves from World Health Organization. 2009. Glove Use Information Leaflet. [Leaflet] Retrieved from http://www.who.int/gpsc/5may/Glove_Use_Information_Leaflet.pdf.

II. HOW TO REMOVE STERILE GLOVES



- 15-17. Remove the first glove by peeling it back with the fingers of the opposite hand. Remove the glove by rolling it inside out to the second finger joints (do not remove completely).
18. Remove the other glove by turning its outer edge on the fingers of the partially ungloved hand.
19. Remove the glove by turning it inside out entirely to ensure that the skin of the health-care worker is always and exclusively in contact with the inner surface of the glove.
20. Discard gloves.
21. Perform hand hygiene after glove removal according to the recommended indication.

NB: Donning surgical sterile gloves at the time of a surgical intervention follows the same sequences except that:

- it is preceded by a surgical hand preparation;
- donning gloves is performed after putting on the sterile surgical gown;
- the opening of the first packaging (non-sterile) is done by an assistant;
- the second packaging (sterile) is placed on a sterile surface other than that used for the intervention;
- gloves should cover the wrists of the sterile gown.