

Glove Use Information Leaflet

Outline of the evidence and considerations on medical glove use to prevent germ transmission

Definitions

Medical gloves are defined as disposable gloves used during medical procedures; they include:

1. Examination gloves (non sterile or sterile)
2. Surgical gloves that have specific characteristics of thickness, elasticity and strength and are sterile
3. Chemotherapy gloves – these gloves are not addressed within this document

Rationale for using medical gloves:

Medical gloves are recommended to be worn for two main reasons:

1. To reduce the risk of contamination of health-care workers hands with blood and other body fluids.
2. To reduce the risk of germ dissemination to the environment and of transmission from the health-care worker to the patient and vice versa, as well as from one patient to another.

Gloves should therefore be used during all patient-care activities that may involve exposure to blood and all other body fluid (including contact with mucous membrane and non-intact skin), during contact precautions and outbreak situations.

The efficacy of gloves in preventing contamination of health-care workers' hands and helping to reduce transmission of pathogens in health care has been confirmed in several clinical studies. Nevertheless, health-care workers should be informed that gloves do not provide complete protection against hand contamination. Pathogens may gain access to the caregivers' hands via small defects in gloves or by contamination of the hands during glove removal. Hand hygiene by rubbing or washing remains the basic to guarantee hand decontamination after glove removal.

Key learning point: gloves do not provide complete protection against hand contamination.

The impact of wearing gloves on adherence to hand hygiene policies has not been definitively established, since published studies have yielded contradictory results. However, the recommendation to wear gloves during an entire episode of care for a patient who requires contact precautions, without considering indications for their removal, such as an indication for hand hygiene, could actually lead to the transmission of germs.

Key learning point: prolonged use of gloves for contact precautions in the absence of considering the need to perform hand hygiene can result in the transmission of germs.

Glove use and the need for hand hygiene:

- When an indication for hand hygiene precedes a contact that also requires glove usage, hand rubbing or hand washing should be performed *before donning gloves*.
- When an indication for hand hygiene follows a contact that has required gloves, hand rubbing or hand washing should occur *after removing gloves*.
- When an indication for hand hygiene applies while the health-care worker is wearing gloves, then gloves should be *removed to perform handrubbing or handwashing*.

Inappropriate glove use:

- The use of gloves when not indicated represents a waste of resources and does not contribute to a reduction of cross-transmission.
- It may also result in missed opportunities for hand hygiene.
- The use of contaminated gloves caused by inappropriate storage, inappropriate moments and techniques for donning and removing, may also result in germ transmission.

Key learning point: it is important that health-care workers are able to differentiate between specific clinical situations when gloves should be worn and changed and those where their use is not required (see figure The Glove Pyramid). Moreover, the health-care worker should be accurately informed on the moment (see Table) for donning and removing gloves.

Type of gloves to be used:

As a general policy, selection of non-powdered gloves is recommended since this avoids reactions with the alcohol-based handrub in use within the health-care facility.

Re-use/reprocessing:

- As medical gloves are single-use items, glove decontamination and reprocessing are not recommended and should be avoided, even if it is common practice in many health-care settings with low resources and where glove supply is limited.
- At present no standardized, validated and affordable procedure for safe glove reprocessing exists.

Every possible effort should be made to prevent glove reuse in health-care settings, such as educational activities to reduce inappropriate glove use, purchasing good quality disposable gloves and replenishing stocks in a timely manner.

Summary of key messages for practical medical glove use:

- Gloves are effective in preventing contamination of health-care workers' hands and helping reduce transmission of pathogens dependent upon two critical factors:
 - They are used appropriately
 - Timely hand hygiene is performed using the method of hand rubbing or hand washing.
- Safe glove use involves:
 - Using the correct technique for donning gloves that prevents their contamination
 - Using the correct technique for removing gloves that prevents health-care workers' hands becoming contaminated (see figure *Technique for donning and removing non-sterile examination gloves*).
- The unnecessary and inappropriate use of gloves results in a waste of resource and may increase the risk of germ transmission.
- Health-care workers should be trained in how to plan and perform procedures according to a rational sequence of events and to use non-touch techniques as much as possible in order to minimize the need for glove use and change.
- If the integrity of a glove is compromised (e.g., punctured), it should be changed as soon as possible and complemented with hand hygiene.
- Double gloving in countries with a high prevalence of HBV, HCV and HIV for long surgical procedures (>30 minutes), for procedures with contact with large amounts of blood or body fluids, for some high-risk orthopaedic procedures, is considered an appropriate practice.
- Use of petroleum-based hand lotions or creams may adversely affect the integrity of latex gloves and some alcohol-based handrubs may interact with residual powder on health-care workers' hands.

Summary of the recommendations on glove use:

- A. In no way does glove use modify hand hygiene indications or replace hand hygiene action by rubbing with an alcohol-based product or by handwashing with soap and water.
- B. Wear gloves when it can be reasonably anticipated that contact with blood or other body fluids, mucous membranes, non-intact skin or potentially infectious material will occur.
- C. Remove gloves after caring for a patient. Do not wear the same pair of gloves for the care of more than one patient.
- D. When wearing gloves, change or remove gloves in the following situations: during patient care if moving from a contaminated body site to another body site (including a mucous membrane, non-intact skin or a medical device within the same patient or the environment).
- E. The reuse of gloves after reprocessing or decontamination is not recommended.

Table. Summary of the indications for gloving and for glove removal:

	Indication
Gloves on	1) Before a sterile procedure 2) When anticipating contact with blood or another body fluid, regardless of the existence of sterile conditions and including contact with non-intact skin and mucous membrane 3) Contact with a patient (and his/her immediate surroundings) during contact precautions.
Gloves off	1) As soon as gloves are damaged (or non-integrity suspected) 2) When contact with blood, another body fluid, non-intact skin and mucous membrane has occurred and has ended 3) When contact with a single patient and his/her surroundings, or a contaminated body site on a patient has ended 4) When there is an indication for hand hygiene.

The Glove Pyramid – to aid decision making on when to wear (and not wear) gloves

Gloves must be worn according to **STANDARD** and **CONTACT PRECAUTIONS**. The pyramid details some clinical examples in which gloves are not indicated, and others in which examination or sterile gloves are indicated. Hand hygiene should be performed when appropriate regardless of indications for glove use.

STERILE GLOVES INDICATED

Any surgical procedure; vaginal delivery; invasive radiological procedures; performing vascular access and procedures (central lines); preparing total parental nutrition and chemotherapeutic agents.

EXAMINATION GLOVES INDICATED IN CLINICAL SITUATIONS

Potential for touching blood, body fluids, secretions, excretions and items visibly soiled by body fluids.

DIRECT PATIENT EXPOSURE: Contact with blood; contact with mucous membrane and with non-intact skin; potential presence of highly infectious and dangerous organism; epidemic or emergency situations; IV insertion and removal; drawing blood; discontinuation of venous line; pelvic and vaginal examination; suctioning non-closed systems of endotracheal tubes.

INDIRECT PATIENT EXPOSURE: Emptying emesis basins; handling/cleaning instruments; handling waste; cleaning up spills of body fluids.

GLOVES NOT INDICATED (except for CONTACT precautions)

No potential for exposure to blood or body fluids, or contaminated environment

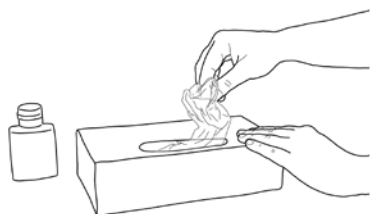
DIRECT PATIENT EXPOSURE: Taking blood pressure, temperature and pulse; performing SC and IM injections; bathing and dressing the patient; transporting patient; caring for eyes and ears (without secretions); any vascular line manipulation in absence of blood leakage.

INDIRECT PATIENT EXPOSURE: Using the telephone; writing in the patient chart; giving oral medications; distributing or collecting patient dietary trays; removing and replacing linen for patient bed; placing non-invasive ventilation equipment and oxygen cannula; moving patient furniture.

Technique for donning and removing non-sterile examination gloves

When the hand hygiene indication occurs before a contact requiring glove use, perform hand hygiene by rubbing with an alcohol-based handrub or by washing with soap and water.

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

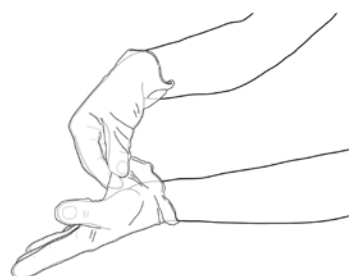


5. To avoid touching the skin of the forearm with the gloved hand, turn the external surface of the glove to be donned on the folded fingers of the gloved hand, thus permitting to glove the second hand

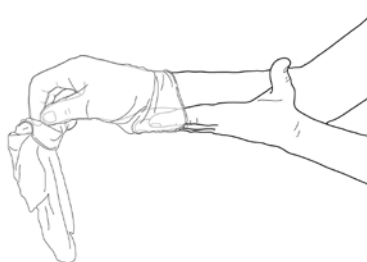


6. Once gloved, hands should not touch anything else that is not defined by indications and conditions for glove use

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