
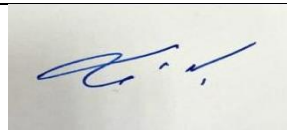


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## 2. Definitions:

1. **Aseptic and sterile techniques** are based on sound scientific principles and are carried out primarily to prevent the transmission of microorganisms that can cause infection.
2. **Surgical Scrub:** is an important procedure required to reduce the risk of contamination by microorganisms during operative procedures. It is the act of antiseptically cleaning your hands and arms prior to a surgical or sterile procedure, then donning a sterile gown and a pair of sterile gloves.
3. **A surgical gown:** is a personal protective garment allocated to be worn by health care personnel during surgical procedures to protect both the patient and health care personnel from the transfer of microorganisms, body fluids, and particulate matter.
4. **OT Gloving:** applying or donning gloves using one of several methods:
  - a. **Closed-gloving Method** of self-applying gloves while the hands are concealed within the cuffs of a sterile gown.
  - b. **Closed-assisted gloving Method** for applying sterile gloves to another person who has his or her hands enclosed within the cuffs of a sterile gown.
  - c. **Double gloving** the wearer applies two pair of sterile gloves. The inner gloves should be a half size larger than the outer glove to create a comfortable air cushion. The inner glove can be a different color to help detect a tear in the outer glove. Wearing two gloves of the same size can cause compression of the median nerve and aggravate carpal tunnel syndrome in some susceptible people.
  - d. **Open-gloving Method** of self-applying gloves while the hands are exposed with or without a sterile gown. This is how gloves are reapplied after a contaminated glove is removed. The cuffs are not pulled back over the hands because they are absorbent and considered contaminated.
  - e. **Open-assisted gloving Method** for applying sterile gloves to another person who has his or her hands exposed through the cuffs of a sterile gown.

## 3.Introduction

In surgical healthcare, a sterile environment is paramount. Pathogens introduced into surgical wounds can cause infections, prolonging recovery, increasing hospital stays, and raising costs. The emotional and physical impact on patients and families from post-operative infections cannot be overstated. Acknowledging the serious consequences of surgical site infections, the Ministry of Health (MoH) is dedicated to improving aseptic techniques in surgery.

This Standard Operating Procedure (SOP) offers detailed guidelines for scrubbing, gowning, and gloving, essential for infection prevention and patient safety during surgical procedures. Adherence to these guidelines is crucial for protecting patients and maintaining a sterile surgical environment, contributing significantly to successful surgical outcomes.

The SOP applies to all surgical team members, outlining critical steps to minimize microbial contamination, manage surgical wounds aseptically, and prevent pathogen introduction. The MoH's

goals with this SOP include empowering surgical teams with aseptic knowledge, controlling infections effectively, promoting a safety and quality culture in patient care, and aligning with international and evidence-based standards to enhance patient outcomes.

This document signifies a dedication to patient safety and the continuous enhancement of surgical services. Every surgical team member must understand and apply these guidelines consistently. Compliance is not just mandatory; it's a core aspect of the duty to patients. By committing to these practices with dedication and integrity, ensuring every patient receives the highest standard of care, a profound impact on patient lives can be made, establishing a standard for surgical excellence in the healthcare sector.

#### 4. Purpose:

The purpose of this SOP is the following:

- a) To empower the surgical team with the knowledge and application of aseptic principles and standard precautions, thereby ensuring the meticulous control of infections and preventing microbial contamination originating from skin flora.
- b) To safeguard the surgical wound from contamination, utilizing aseptic principles to effectively manage and mitigate the risk of infection.

#### 5 Scope:

This Standard Operating Procedure is applicable for all the surgical teams operating within hospitals and surgical centers under the Ministry of Health (MoH).

#### 6. Procedure:

6.1 Surgical scrubbing dramatically **reduces the risk of infection** and significantly **improves patient outcomes**.

- a) The initial scrub process must last for at least 3 – 5 minutes.
- b) Use antiseptic agent which approved for surgical hand antisepsis.

6.2 **Sterile surgical gowns** are worn during the surgery.

- a) The sterile gown should be opened on a separate clean trolley away from the sterile field.
- b) Wet hands should not touch the sterile gown.
- c) Before putting the sterile gown on, Hands and forearms have to be dried with a sterile towel.
- d) There are different techniques of gowning procedure:
  - i. The sterile person should only touch the inner side of the sterile gown.
  - ii. The unsterile person assisting with gowning should only clasp the neck and back ties.
  - iii. The scrub nurse gowning another person should only touch the outside of the sterile gown whilst gowning the other person.

6.3 Type of gloves should be used according to the international standards

- a) Sterile surgical gloves must be stored away from scrub sinks and hand wash basins to avoid contamination from splashing.

- b) The choice of surgical glove depends on the particular surgical procedure being undertaken and the needs of the wearer.
- c) The use of gloves dose not replace the need of hand hygiene.
- d) **Double gloving is highly recommended for all surgical procedures.** The decision to ‘double glove’ should be influenced by the risk posed by the surgical procedure (i.e. exposure to sharps) and not the ‘risk’ posed by the patient or personal preference.
- e) **When a patient is sensitive or allergic to latex proteins** all scrubbed personnel must wear latex free gloves. Staff who are sensitive or allergic to latex proteins must receive advice from Infection Control Team/Dermatologist.

**6.4 General:** General preparation should be maintained by all surgical team prior to scrub:

No.	General preparation
6.4.1	A surgical mask must be worn
6.4.2	All hair, including beards and moustaches must be covered and wigs and hair pieces removed. Earrings must be removed ideally or covered if unable to remove.
6.4.3	Arms and hands should be free from abrasions and open cuts.
6.4.4	The sleeves of surgical attire must be folded, 2 to 3 inches above elbows

### 6.5 Hand hygiene ( MOH/DGDSC/P&P/055/Vers 01)

6.5.1 The hand rubbing technique for surgical hand preparation must be performed on perfectly clean, dry hands.

**6.5.2** On arrival in the operating theatre and after having donned theater clothing (cap/hat/bonnet and mask), hands must be washed with soap and water.

**6.5.3** After the operation when removing gloves, hands must be rubbed with an alcohol-based formulation or washed with soap and water if any residual talc or biological fluids are present (e.g. the glove is punctured).

### 6.6 Surgical scrubbing procedure.

N0	PROCEDURE
1	All jewelers and watches must be removed.
2	All nail polish and false nails must be removed and ideally short.
3	Turn on the tap & adjust water to a comfortable temperature.
4	Wet the hands and arms, Apply adequate <b>scrub solution</b> ensures good foaming for cleansing of <b>hands</b> and <b>arms</b> to the <b>elbows</b> .
5	Scrub all sides of digits including web spaces .
6	Scrub the front and back of each hand, then both arms insure that the whole skin area is covered by using circular movement around the forearm up to elbow.
7	<b>Rinse the hands</b> and arms thoroughly, allowing the water to run down the hands to the elbows. Keep the hands higher than the elbow at all times and away from body.

8	avoid splashing water on the scrub suit
9	<b>Repeat the steps(4 to 7 ) to attain the recommended time (3-5 mint ) consider the flowing repetition up to mid-forearm</b>
10	Turn off the tap with elbows.
11	Repeat procedure if during the scrub procedure, the hands or forearms touch the sink or tap.
12	Then, hold hands at 90 degrees, elbows bent and away from clothing and Proceed to Operation Room .

### 6.7 Gowning (see Appendix 1):

### 6.8 Gowning others (see Appendix 2):

### 6.9. OT Gloving:

**6.9.1. Closed Method of Gloving (see Appendix 3)** - the closed method of gloving prevents the bare hands coming into contact with the outside of the sterile surgical gown. The gloves are handled through the fabric of the gown sleeves. The hands are not extended from the sleeves until the gloves are pulled into place. **The closed method of gloving is the preferred method.**

**6.9.2. Open Method of Gloving (see Appendix 4)** - the everted cuff of each surgical glove permits a gowned person to touch the glove's inner side with bare hands and the outer side with gloved hands. Extreme caution is needed to prevent contamination of the sterile outer glove surface by the exposed hands.

### 6.9.3 Ensure That:

- a) **Keep your hands above your waist** and in front of you.
- b) **Do not touch anything around you that is not sterile** – this includes your **face, mask, and hat!**

### 6.10. Doffing of Surgical gown and Gloves

**6.10.1.** Keep gloves on, grab the gown by the waist area.

Note: if it is reusable gown the back tie should be released first by assistant

If the gown disposable pulls the gown away from your body to break the ties.

**6.10.2.** While removing the gown, roll the gown into a bundle, touch only the outside part and keep surgery faced side inside.

**6.10.3.** Peel off the gloves as the gown is being removed, remove the first glove using a glove to glove technique, remove the last glove using a skin to skin technique.

**6.10.4.** Disinfect your hands.

## 7. Responsibilities:

### 7.1 Surgical Team Responsibilities:

**7.1.1** Members must strictly adhere to the Standard Operating Procedures (SOPs) for scrubbing, gowning, and gloving to maintain the highest standards of aseptic and sterile techniques during all surgical procedures.

**7.1.2** It is imperative to consistently perform aseptic and sterile techniques as prescribed in the SOPs for every surgical procedure, without exceptions.

**7.1.3** Any breach in sterility protocols must be immediately reported and rectified. This includes mandatory re-scrubbing, re-gowning, or changing of gloves as the situation demands.

### 7.2 OT In-Charge Responsibilities:

**7.2.1** Oversee strict compliance with the SOPs among all staff members. This includes conducting regular assessments to ensure competency in executing aseptic and sterile techniques.

**7.2.2** Guarantee that all staff members are allocated sufficient time for infection control training. This training should encompass all aspects of aseptic technique, underlining its criticality in surgical settings.

**7.2.3** Regularly conduct audits of aseptic and sterile techniques to identify areas for improvement and ensure consistent application across all operations.

**7.2.4** In cases of sterility breach or post-operative infection, lead the development of action plans to address and rectify the root causes. This includes implementing preventive measures to avoid recurrence.

**7.2.5** Uphold the commitment to accreditation standards related to aseptic and sterile techniques. This involves continuous monitoring and improvement of health and risk management standards to align with best practices and regulatory requirements.

## 8. Document History and Version Control

Version	Description	Review Date
1	Initial Release	









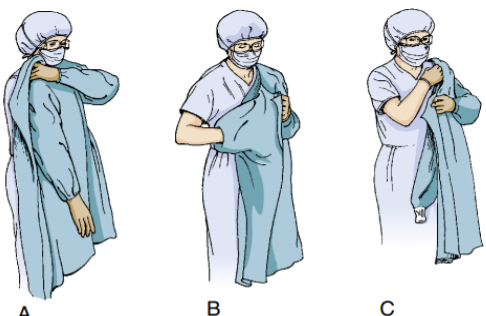

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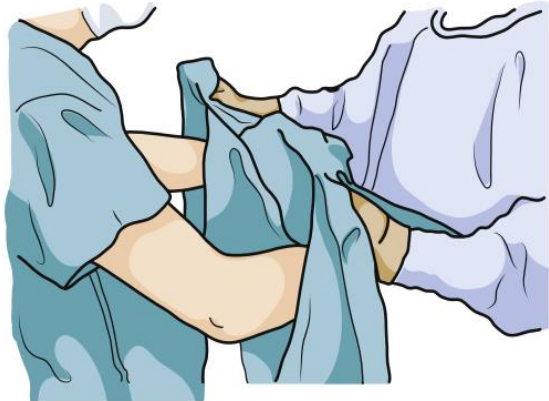


## 10. Annexes:

### Appendix 1: Gowning self-procedure.

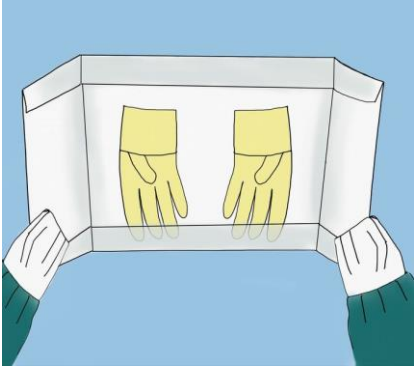

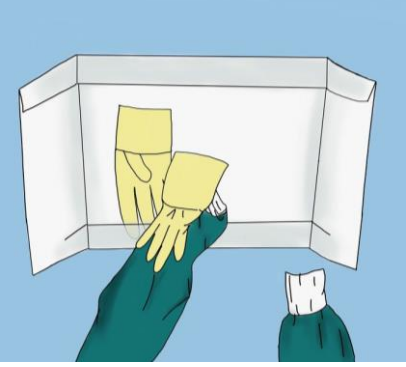
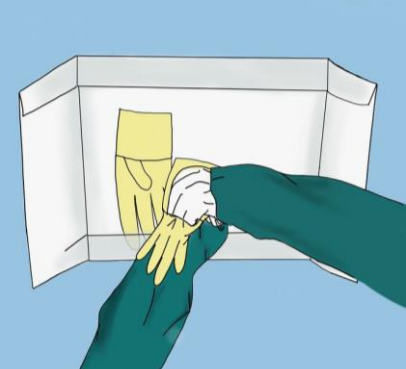
No.	PROCEDURE	PICTURES & RATIONAL
1	Proceed to the OR holding hands above the elbows. Drying – use the sterile towels provided in the gown pack.	 <p>• FIG. 16-9 Scrub person preparing to gown removes the hand towel on top of gown from open package.</p>
2	A sterile towel is taken from the pack to dry the hands carefully. The top of the towel is held securely in one hand and opposing fingers and hands is dried thoroughly before moving onto arm. Flip the towel and dry the other hand and arm  Discard the towel without drooping hands below waist level.	 <p>• FIG. 16-10 Scrub person, holding towel away from body, dries only scrubbed areas, starting with hands. He or she avoids contaminating hands on areas proximal to elbows and then discards towel.</p>
3	Grasp the sterile gown from the inside part of the neckline and unfolds it and step back away from the trolley.	 <p>• FIG. 16-11 Scrub person, picking up gown below neck edge, lifts it directly upward and steps away to avoid touching the edge of the wrapper. Note that inside of wrapper covers the table. Gown is folded inside out.</p>
4	Find the holes of arm and insert both arms at the same time into the sleeves	 <p>• FIG. 16-12 Scrub person, putting on gown, gently allows the gown to unfold away from body and then slips arms into sleeves without touching sterile outside of the gown with bare hands.</p>

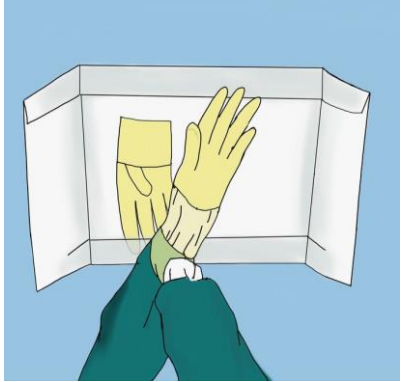

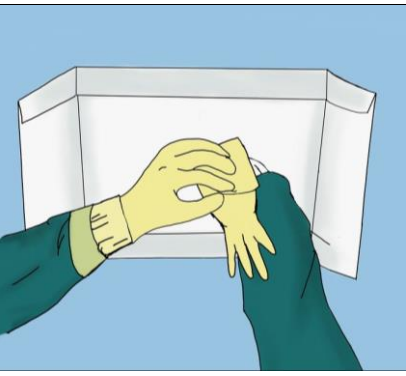
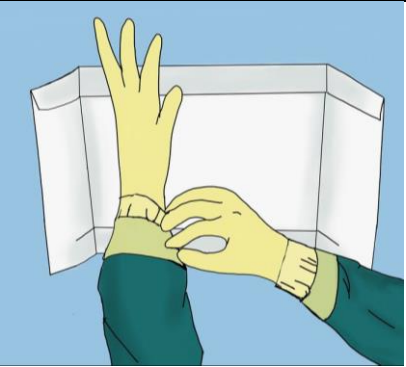
5	To avoid contamination the Circulator nurse will clasp the neck and back ties	 <p>• FIG. 16-13 Circulating nurse ties the inner waist ties of the sterile gown.</p>
7	Gloves are put on, see (6.3 surgical scrubbing procedure )	
8	<p>Detach the ties in front of the gown, hold the sterile card and hand it to the circulator nurse then turn to the left until you can reach the tie, clutch it, and tie the ends.</p> <p>If using gown with out card hands the ties to sterile person .</p>	 <p>• FIG. 16-14 The circulating nurse ties in the sterile scrub person. The scrub person hands the paper tag that holds the long right wraparound tie to the circulating nurse while holding the shorter left tie. The nurse walks behind the scrub person and passes the long sterile tie to the scrub person without touching anything but the removable paper tag.</p>
9	<p>At the end of the procedure:</p> <p>The neck and back ties of gown are untied by the circulator nurse and removed inside out.</p> <p>Gowns are always removed before gloves to avoid hand contamination.</p>	 <p>• FIG. 16-21 Sequence of scrub person removing soiled gown at end of surgical procedure. The gown is removed before the gloves. Clean arms and scrub suit are protected from contamination outside of gown. Do not reach behind the gown to untie the back strings. Have someone untie the back. <b>A</b>, With gloves on, grasp the front shoulder of gown and pull forward. <b>B</b>, In pulling gown off arms, make sure that gown sleeve is turned inside out to prevent contamination of scrub attire. <b>C</b>, The other shoulder is grasped with the other hand, and the gown is removed entirely by pulling it off inside out and rolling it away from body.</p>
10	*Gown is only considered sterile from the chest to the level of the sterile field in front and from 2 inches above the elbow to the cuffs on the sleeves *	 <p>• FIG. 15-1 Zones of sterility on front of gown. The zones of sterility can change based on position of draped patient and sterile team.</p>

### Appendix 2: Gowning others:

No.	PROCEDURE	PICTURES & RATIONAL
1	Scrub nurse unfolds sterile towel and puts it in the surgeon's hands without touching the hands.	To avoid contamination of gloves of scrub nurse.
2	Scrub nurse unfolds the gown and holds it on the neckline.	 <p data-bbox="906 1032 1469 1077">• FIG. 16-19 Gowning a team member by holding the armholes open and protecting hands inside sterile surface of the gown.</p>
3	The gown is held on the outside, at the shoulder part of the gown.  To avoid scrub nurses' hands from touching the surgeon	
4	Surgeon puts his arms into the sleeves and the scrub nurse then releases the gown.	
5	The scrub nurse assists with tying the sterile ties.	To avoid contamination.
6	Scrub nurse pulls the sleeves up to uncover the hands of the surgeon.	To make it easy to prepare for gloving and so the surgeon avoids touching the gown with bare hands.
7	Circulator nurse will tie the back of gown, as the back is considered unsterile.	 <p data-bbox="895 1637 1461 1682">• FIG. 16-17 Open gloving. The scrub person's hands are exposed through the cuffs. The circulating nurse ties the inner back of the gown.</p>
8	Scrub nurse assists surgeon with gloving	 <p data-bbox="938 1984 1437 2007">• FIG. 16-20 Gloving a team member by open-assisted method.</p>





**Appendix 3: Closed method gloving.**

No.	PROCEDURE	PICTURES
1	Open the inner glove packet that circulating nurse dropped onto your sterile field.	
2	Pick up one glove by the folded cuff edge with your sleeve-covered hand.	
3	Place the glove on the opposite gown sleeve facing palm down, with the glove fingers pointing towards you. The palm of the hand inside the gown sleeve must be facing upward toward the palm of the glove.	
4	Place the glove's rolled cuff edge at the seam that connects the sleeve to the gown cuff. Grasp the bottom rolled cuff edge of the glove with the thumb and index finger of the hand the glove is on top of.	

<p><b>5</b></p>	<p>While holding the glove's cuff edge with one hand, grasp the uppermost edge of the glove's cuff with the opposite hand.</p>	
<p><b>6</b></p>	<p>Continuing to grasp the glove, stretch the cuff of the glove over the hand.</p> <p>Using the opposite sleeve covered hand, grasp both the glove cuff and sleeve cuff seam and pull the glove onto the hand. Pull any excessive amount of glove sleeve from underneath the cuff of the glove.</p>	
<p><b>7</b></p>	<p>Using the hand that is now gloved put on the second glove in the same manner.</p>	
<p><b>8</b></p>	<p>Check to make sure that each gown cuff is secured and covered completely by the cuff of the glove.</p>	



### Appendix 4: Open gloving

No.	PROCEDURE	PICTURES
1	<p>The glove wrapper is opened, only touching the outer edges.</p> <p>The first glove is grasped by touching the inner surface only and place over the hand.</p>	 <p style="text-align: center;">A</p>
2	<p>The gloved hand then grasps the second glove inside the folded cuff, sterile to sterile contact.</p>	 <p style="text-align: center;">B</p>
3	<p>The second glove is applied over the cuff of the sterile gown.</p>	 <p style="text-align: center;">C</p>
4	<p>Put the fingers of second gloved hand under the folded glove cuff and pull the glove over the cuff of sterile gown.</p>	 <p style="text-align: center;">D</p>