

GUIDELINE ESSENTIALS

QUICK VIEW

Sterile Technique



BEFORE PREPARING THE STERILE FIELD

- Wear clean surgical attire and a surgical head covering when entering an OR or invasive procedure room.
- Wear a clean surgical mask that completely covers the mouth, nose, and chin when open sterile supplies are present.
- Ensure that radiation protective garments have been cleaned and disinfected before wearing them under surgical gowns.

★ *Wearing clean surgical attire and surgical masks prevents contamination of the sterile field.*



PUTTING ON GOWNS AND GLOVES

- Select a surgical gown that provides adequate barrier protection as determined by the:
 - team member's role
 - type of procedure (minimally invasive versus open)
 - anticipated blood loss
 - anticipated volume of irrigation
 - anticipated patient contact
 - length of the procedure
 - probability of handling hazardous medications
- Select a surgical gown that wraps around the body and completely covers the wearer's back.
- Perform surgical hand antisepsis before putting on a surgical gown and sterile gloves.
- Prevent contamination when donning a sterile gown by:
 - following the manufacturer's instructions for use (IFU)
 - placing and opening the surgical gown away from the sterile field
 - avoiding putting sterile gloves on top of the open surgical gown
 - ensuring your hands and arms are dry before putting on the surgical gown
 - only touching the inside of the gown when putting it on
 - only touching the sterile glove wrapper after the surgical gown has been put on
- Wear two pairs of sterile gloves and use a perforation indicator system when scrubbed into the sterile field.
- Cover the surgical gown cuffs with the gloves.
- Change surgical gloves:
 - every 60 to 150 minutes
 - when known or suspected contamination occurs

- when a defect or perforation is identified or suspected
- after touching
 - » methyl methacrylate
 - » a C-arm
 - » drapes used to protect the sterile field from contamination during lateral movement of the C-arm
 - » a surgical helmet or visor
 - » optic eyepieces on a microscope
- Avoid using penetrable materials (eg, sterile towels) to manipulate or hold unsterile items (eg, cell phones).

★ *Surgical gowns are tested by the manufacturer for liquid barrier protection and labeled with barrier level properties (ie, levels 1 [lowest] to 4 [highest]) based on the anticipated risk of exposure. Lengthy surgical procedures and specific surgical tasks can increase the risk of glove contamination or perforation.*



PREPARING THE STERILE FIELD AND DRAPING

- Prepare the sterile field as close as possible to the time of the procedure.
- Avoid moving the sterile field to another room once it is set up.
- Keep sterile fields and instrumentation separate for procedures that involve more than one wound classification (eg, clean, clean-contaminated, contaminated, dirty).
- Prepare sterile fields according to the health care organization's process when using the isolation technique.
- Place sterile drapes as close as possible to the time of the procedure and in accordance with the manufacturer's IFU.
- Avoid leaning or reaching across an unsterile area when placing surgical drapes.
- Shield gloved hands by cuffing the sterile drape.
- Avoid moving the drapes once they are placed.
- Use a nonpenetrating device when securing surgical equipment (eg, tubing, cords) to the drapes.
- Consider any item that falls below the level of the sterile field to be contaminated.

★ *Several different kinds of sterile drapes are used in the perioperative environment. It is important to place drapes according to the manufacturer's IFU and in such a way that prevents contamination of the drapes themselves, the scrubbed person's surgical gown and gloves, and the surgical site.*



OPENING AND HANDLING STERILE ITEMS

- Inspect the packaging of sterile items for:
 - sterility of the contents, as noted on the packaging
 - package and product integrity
 - the expiration date, when applicable
 - chemical indicator changes (eg, color change)
- Present sterile items directly to the scrubbed person or place them securely on the sterile field.
- Present heavy or sharp items directly to the scrubbed person or place them on a separate surface.
- Inspect rigid sterilization containers for intact external locks, secure latch filters, valves, and tamper-evident devices, and for the correct color change to external chemical indicators.
- Examine wrapped sterile packages for intact tape and the correct color change for the external chemical indicator before opening.
- Examine paper-plastic pouches (ie, peel pouches) for intact seals and chemical indicators.

- Prevent items from sliding over the unsterile edges of the pouch by pulling back on the flaps without touching the inside of the package.
- Inspect instruments for retained bioburden and debris after they are opened to the sterile field.
- Consider instruments to be contaminated if debris, moisture (except when immediate use sterilization cycles are used), or damage is present.
- When a contaminated instrument is found, consider the entire instrument set to be contaminated.
- Transfer medications and solutions to the sterile field by:
 - opening them as close as possible to the time of use
 - transferring them in a slow, controlled manner using a sterile transfer device (eg, sterile vial spike) and in accordance with the manufacturer's IFU
 - only removing the medical vial stopper if it is designed for removal
 - pouring them in a container that is near the sterile table's edge or held by the scrubbed person
 - pouring them only once

★ *Inspecting items (eg, peel packed items, wrapped sterile packages) before they are presented to the sterile field helps determine if the item is sterile or if it's damaged or compromised. Minimizing splashing or spilling of medications and solutions and the need to reach over the sterile field reduces the risk of contaminating the medication or solution, the sterile field, and the surgical site.*



LIMITING MOVEMENT

- Keep the number of personnel in the operating room to a minimum.
- Keep doors to the operating room closed as much as possible.
- Decrease movement around the sterile field.
- Scrubbed team members:
 - Stay close to the sterile field and touch only sterile items.

- Keep your hands above waist level.
- Limit the number and speed of your movements.
- Avoid folding your arms and placing your hands in the axilla.
- Avoid changing levels.
- Avoid turning your back to the sterile field.
- Turn back to back or face to face during position changes.
- Avoid being positioned between the horizontal unidirectional air delivery system air curtain and the surgical site.
- Avoid leaving the sterile field to retrieve items from a sterilizer.
- Use shielding devices when radiology equipment is used.
- Unscrubbed team members:
 - Limit the number and speed of your movements.
 - Face the sterile field when approaching it.
 - Avoid walking between sterile fields or scrubbed team members.
 - Stay as far from the sterile field and scrubbed team members as possible.
 - Avoid reaching over an uncovered sterile field.
 - Remain outside of a vertical unidirectional air delivery system air curtain.
 - Avoid walking between the horizontal unidirectional air delivery system air curtain and the sterile field.
- Limit nonessential conversations.

★ *Airborne contaminants in the surgical environment can increase based on the number of people in the OR and the amount of movement. Limiting the number of personnel and the number of times a door is opened reduces the level of environmental contamination.*



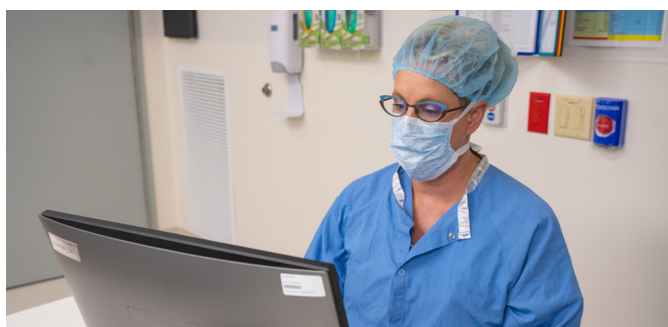
MAINTAINING THE STERILE FIELD

- Cover the sterile field with a drape in a way that prevents contamination if the sterile field will not be used immediately (eg, procedural delay).

- Refer to the organization's standard procedure regarding circumstances that might necessitate the sterile field to be covered, how it is covered, and the length of time it should be covered.
- If the OR has a unidirectional air delivery system, position the surgical site and instrument tables within the airflow curtain.
- Place heater-cooler devices (HCDs) outside the air curtain of the unidirectional air delivery system and direct the airflow exhaust away from the sterile field.
- Educate perioperative team members on the safe use of HCDs and the interventions to decrease the risk of infections associated with those devices.
- Implement isolation techniques as part of a surgical site infection bundle during colorectal surgeries.
- Use a wound protector for open or hand-assisted abdominal procedures in which the gastrointestinal or biliary tract is accessed.
- Prevent the risk of cross contamination when using a C-arm by:
 - considering the top of the C-arm drape to be contaminated immediately after draping
 - maintaining sterility of the drapes when they are secured to the side of the operating table while the C-arm moves between anterior/posterior and lateral positions
 - considering the drapes secured to the side of the operating table to be contaminated after lateral C-arm positioning
 - preventing the draped C-arm from touching the patient or the sterile field
- When bins with sterile water are used for instrument soaking:
 - separate the bin from the other items on the sterile field (eg, place it on a ring stand or on a separate table)
 - do not use the water for patient irrigation
 - do not return instruments from the basin to the sterile field
 - do not use the water for any other purpose (eg, moistening sponges for point-of-use treatment or cooling instruments)
- Monitor the sterile field for contamination, and correct breaks and potential breaks in sterile technique immediately.
- Consider instruments and devices to be contaminated when they are:
 - processed assembled or clamped closed

- found to have retained organic material (eg, blood, hair, tissue) or other debris (eg, bone cement, grease, mineral deposits)
- used on infected tissue
- used inside the bowel or on the bowel lumen
- used to resect metastatic tumors
- involved in a glove tear or perforation

★ *A unidirectional air delivery system provides filtered air in the form of an airflow curtain. Positioning the instrument table in the airflow curtain can reduce the risk of contamination of the sterile field. Taking immediate corrective action when breaks in sterile technique occur can minimize the amount of contamination.*



SURGICAL WOUND CLASSIFICATION

- Determine the surgical wound classification for the procedure during the postprocedural debriefing.
- Document the surgical wound classification in the patient's medical record. Do not allow someone who was not involved in the procedure to modify it.
- Review the organization's policy and procedures for surgical procedures that do not have a surgical wound to classify (eg, no incision).
- Document major breaks in sterile technique and report the incident per facility policy and procedure.
- Establish a strategy to identify instances of surgical wound misclassification.
- Report misclassification data to perioperative nurses who document wound classifications.

★ *Surgical wound classification is assigned based on the presence of infection or contamination in the wound. The four surgical wound classifications that the National Healthcare Safety Network recognizes are Clean, Clean-Contaminated, Contaminated, and Dirty/Infected.*