

GUIDELINE ESSENTIALS

KEY TAKEAWAYS

Sterile Technique



TAKEAWAY

EXPLANATION

Sterile technique is foundational to surgical site infection (SSI) prevention and is based on careful and conscientious practices to prevent contamination of the sterile field.

- Preventing contamination requires all perioperative team members to consistently adhere to the principles and processes of sterile technique before and during the procedure.
- Sterile field contamination can be invisible; it can be challenging to determine the efficacy (and hence the necessity) of sterile technique practices during procedures. However, it is still important to adhere to the principles and processes of sterile technique to promote patient safety.

Careful planning for and preparation of the sterile field (including gowning and gloving) can reduce the likelihood of contamination that increases the risk for SSI.

- Wearing clean surgical attire and covering all hair upon entry to the OR or invasive procedure room reduces the risk of sterile field contamination from the skin and microbes shed from personnel. **1.1**
- Wearing a clean surgical mask that fits snugly and covers the nose, mouth, and chin while preventing gaps at the side of the mask prevents exposure of the wearer's oral and nasal microorganisms to the sterile field and the patient during operative or other invasive procedures. **1.2**
- Performing hand hygiene before opening sterile supplies and performing surgical hand antisepsis before putting on a surgical gown and gloves reduces the transmission of potentially infectious materials. **1.4, 2.2**
- **NEW** The surgical gown selection should be based on the tasks to be performed, the anticipated degree of exposure to potentially infectious material, and the liquid barrier class of the gown listed on the label. **2.1, 2.1.1, Table 1**
- **NEW** Measures that can be implemented to prevent contamination of the sterile field from powered air-purifying respirators (PAPRs) include a comprehensive evaluation before purchase, implementing a standardized procedure for putting on the PAPR, and taking precautions to reduce the risk of sterile field contamination (eg, covering portions of the field, directing unfiltered exhaled air away from the field). **1.3, 1.3.1**
- **NEW** The high levels of contamination associated with radiation protective devices can contribute to environmental contamination in the OR. Before use, radiation protective garments should be verified as having been cleaned and disinfected according to the manufacturer's instructions. **1.5, 1.5.1**
- **NEW** Using sterile technique when donning a gown can prevent contamination of the gown. Using the self-gowning technique or monitoring the gowning process during assisted gowning can prevent sleeve contamination. **2.3.1, 2.3.2**

TAKEAWAY

EXPLANATION

Open and drape items as close as possible to the time of use.

- Opening items (ie, instruments, supplies, medications, solutions) as close as possible to the time of use is a fundamental and recurring principle of sterile technique that maintains sterility by retaining the item in sterile packaging, thereby eliminating exposure to contamination. **3.3, 5.1, 5.7**
- **NEW** Draping the patient, furniture, and equipment as close as possible to the time of use reduces the risk of surgical drape contamination from the movement of unscrubbed personnel close to the draped patient or item and from exposure to airborne contamination. **4.2**

Limit movement around the sterile field, door openings into the OR, and nonessential conversation in the presence of a sterile field.

- Keeping the number of individuals in the OR or invasive procedure room to a minimum can reduce the number of environmental contaminants (eg, particulates, colony-forming units). **6.1-6.1.2**
- OR door openings increase environmental contamination in the room by affecting the positive pressure of the OR and airflow in the room. When door opening is necessary, opening only one door can help maintain room pressurization and decrease the level of contaminants that can enter the room. **6.2, 6.2.1**
- Movement around the sterile field can increase environmental contamination and contribute to disruptions in the airflow of the room that increase the risk of particle movement in unintended directions (eg, toward the sterile field). **6.3-6.5**
- Conversations can increase the presence of microorganisms from respiratory droplets in the air above the sterile field. Limiting conversations that are irrelevant to the patient or surgical process may reduce the risk of airborne contamination of the surgical site. **6.6**

Maintain the sterile field throughout the procedure with thoughtful attention to common practices in the OR that introduce risk for contamination.

- Strategies include
 - implementing a glove-changing strategy for identified events and intervals during the procedure; **2.5.1-2.5.7**
 - covering the sterile field or portions of the sterile field when they will not be used immediately; **7.1, 7.1.1**
 - **NEW** positioning the instrument tables within the airflow curtain (ie, beneath the primary supply diffuser array) and limiting the number, position, and movement of objects placed between the air curtain and the sterile field; and **7.2-7.2.2**
 - **NEW** maintaining heater-cooler devices, locating them outside the air curtain of the unidirectional air delivery system, and directing the airflow exhaust away from the sterile field and toward a room exhaust vent. **7.3-7.3.10**

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TAKEAWAY

EXPLANATION

- **NEW** The effective use of isolation technique can reduce the risk of procedural complications (eg, SSI, the spread of cancer cells) and can be implemented using a single-field or dual-field strategy. **3.10, 7.4-7.4.2**
- **NEW** Draped C-arms are likely to become contaminated with use during the procedure, and measures should be implemented to reduce the risk of cross contamination of the sterile field (eg, preventing the draped C-arm from touching the patient or the sterile field). **7.6, 7.6.1**
- **NEW** Open basins of solutions on the sterile field are at high risk for contamination, and measures should be implemented to reduce the risk of surgical wound contamination (eg, pouring solutions immediately before use, separating basins used for instrument soaking from other items on the sterile field). **5.7.1, 7.7, 7.7.1**

NEW Surgical Wound Classification section

- Accurate surgical wound classification is an essential data point in the patient's medical record and can inform performance improvement efforts and SSI investigations.
- The AORN Surgical Wound Classification Decision Tree has been updated for ease of use. **Figure 6**

Implement quality assurance and performance improvement measures that support adherence to sterile technique practices.

- Quality assurance and performance improvement programs conducted by an interdisciplinary team that includes an infection preventionist assist in evaluating and improving sterile technique practices. **9.1, 9.2.1**
- Auditing adherence to sterile technique may be achieved through both chart review and direct observation. **9.1.1**
- Quality improvement activities can help personnel understand the rate and reasons for door openings at their facility, and this information can be used to select effective interventions to reduce door openings when sterile supplies are open. **9.2.1, 9.3**
- **NEW** Reducing the level of airborne contamination is one strategy to reduce the risk of SSIs; this may include establishing an interdisciplinary air quality management program. **9.4-9.5.6**