

Status **Active** PolicyStat ID **17568462**



Origination 03/2004
Last Approved 02/2025
Effective 02/2025
Last Revised 02/2025
Next Review 02/2028

Owner Sherie Goldbach:
Project Coordinator
Policy Area Infection Prevention
Applicability UNC Medical Center

Infection Prevention Guidelines for Perioperative Services

I. Description

Describes the Infection Prevention policies and procedures to reduce the risk of healthcare-associated infection in the perioperative environment at UNC Medical Center, Ambulatory Surgical Center, and Hillsborough Hospital.

II. Policy

A. General Information

1. Education

- Infection Prevention education via LMS, including OSHA Bloodborne Pathogen and TB Training, is required upon employment and annually thereafter.

2. Environment/Cleaning

- a. Pre-Op and PACU should be cleaned according to the Infection Prevention policy: [Environmental Services](#).
- b. The environment in the Operating Rooms will be maintained by daily, intraoperative, interim, and weekly terminal cleaning routines (Refer to Attachment 1—[Environmental Cleaning and Disinfection in the Operating Room](#)).

- c. After each patient is transported on a surgical stretcher, linens are changed, and surfaces are wiped with an EPA-registered disinfectant. The entire stretcher will be cleaned with an EPA-registered disinfectant when visibly soiled and at the end of the day.
- d. All blood spills should be cleaned up immediately, and the spill area decontaminated with an EPA-registered disinfectant or a 1:10 solution of bleach and water. If the spill is large, flood the spill area with the disinfectant prior to cleaning up. Take care to avoid sharp injuries during clean-up.

3. Hand Hygiene

- Staff must adhere to the Infection Prevention policy: [Hand Hygiene and Use of Antiseptics for Skin Preparation](#).

4. Laboratory Specimens

- Refer to Perioperative Services Policy: [Intraoperative Specimen Management](#).

5. Staff

- a. Staff should adhere to guidelines established by the Occupational Health Service (OHS). Refer to the Occupational Health Services policy: [Infection Prevention and Screening Program: Occupational Health Service](#).
- b. Surgical staff who are colonized with organisms such as *S. aureus* (nose, hands, or other body site) or group A Streptococcus are not routinely excluded from duty unless staff have been linked epidemiologically to dissemination of the organism in the healthcare setting.

6. Precautions / Communicable Diseases

- Isolation Precautions / Communicable Diseases
 - i. Elective inpatient admissions should be deferred if possible when patients have a communicable infectious disease.
 - ii. Patients on isolation precautions will be managed per the Infection Prevention policies: [Isolation Precautions](#) and the [Tuberculosis Control Plan](#).
 - iii. Patients requiring an airborne isolation room shall not be scheduled in the Ambulatory Surgical Center (ASC).
 - iv. Pre-Op Area: Patients on Contact/Enteric Precautions may be managed in all bed spaces, including curtained spaces. Ensure that the requirement for Contact or Enteric Precautions is communicated to Anesthesia and OR staff prior to the patient leaving for the OR.

- v. Intra-Op: OR staff should wear clean gloves and an isolation gown during procedures such as positioning the patient on the OR table. Anesthesia staff should wear gloves and gown for procedures such as intubation and placement of peripheral venous catheters that do not require the use of sterile cover gown. During the surgical procedure, isolation attire is not necessary unless staff not scrubbed in for the case need to have direct contact with the patient. Ensure that the requirement for Contact Precautions/ Enteric Precautions is communicated to PACU staff.
- vi. PACU: PACU patients on Contact/Enteric Precautions may be managed in all patient bed spaces, including curtained spaces. Ensure that the requirement for Contact/Enteric Precautions is communicated to the Floor/ICU prior to the patient leaving the PACU.

7. Reuse of Single-Use Devices

Single-use devices may not be reused except those remanufactured by an FDA-registered third-party reprocessing company. Refer to the Infection Prevention policy: [Reuse of Single Use Devices](#).

8. All allograft human tissues should be stored and handled according to the Perioperative Services policy: [Allograft and Autograft Tissue Storage and Handling](#). Aseptic technique will be maintained when tissues are placed on the sterile field.

9. Visitation and OR Observers

a. Pre-Op and PACU

- i. Visitors with communicable diseases should not accompany patients to the Pre-Op waiting rooms nor be admitted to ASC/HH as the patient's "responsible adult."
- ii. Ideally, visitors under the age of 12 will be screened during each visit for contagious illnesses. Refer to the Nursing policy: [Hospital Visitation](#) and the Perioperative Services policy: [Visitation in PreOp and PACU](#).
- iii. The visitation policies will be monitored and implemented by the nursing staff.
- iv. Visitors should perform hand hygiene before approaching the bedside and upon leaving the patient care area.

b. Operating Room

- i. Observers with purposeful visits, including product consultants, professors, unit nurses, student nurses, and allied health students, will be permitted to visit the surgical suite on an individual basis

for a limited time.

- ii. The attending surgeon, Patient Service Manager, or educator of the department will authorize observers. The purpose of the visit must be stated and approved in advance.
- iii. Observers will receive an orientation to pertinent protocols, as necessary, and comply with Attachment 2 - Surgical Services/ Operating Room - Observers Protocol.
- iv. Corrections officers will comply with the Hospital Police policy: [DOC/Forensic Patient Procedures & Policy](#) while in the surgical suite.

c. OR Visitation By Parents

- i. With anesthesiologist approval, one parent of a pediatric patient will be allowed to accompany their child to the Operating Room and Pre-Op areas.
- ii. In the Operating Room, the parent must wear a cover (e.g., bunny suit) over their clothes, a hair cover, and a surgical mask.
- iii. The parent will be accompanied into the Operating Room by the anesthesia team and will be directed out of the Operating Room by a peri-operative staff member to wait in an appropriate area (e.g., ICU waiting room, patient room, or PCS waiting room).
- iv. The parent will leave the child after induction is complete and prior to intubation and line insertion or any time deemed appropriate by the attending anesthesiologist.

10. Waste Disposal

- Perioperative Services staff will comply with the Infection Prevention policy: [Guidelines for the Disposal of Regulated Medical Waste](#).

B. Preoperative Care / Patient Preparation

1. General Guidelines

- a. Continuous quality work to prevent surgical site infections will be based on evidence-based practice, as shown in our [SSI Bundle](#), available on the [Infection Prevention intranet page](#).
- b. Whenever possible, identify and treat all infections remote to the surgical site before elective operations and postpone elective operations on patients with remote-site infections until the infection has resolved.

2. Preoperative Chlorhexidine Gluconate (CHG) treatments

- a. Refer to Nursing policy [Operative/Procedural Management](#) for contraindications, exceptions, and specific instructions regarding application of wipes.
 - b. Additional information about CHG treatments can be found in the Infection Prevention Policy: [Chlorhexidine Gluconate \(CHG\) Treatments and Skin Antisepsis](#).
3. Hair Removal
- a. Hair should not be removed from the operative site unless it may interfere with the surgical procedure. If hair removal is necessary, remove immediately before the operation with electric clippers in a location outside the operating room.
 - b. Additional information about hair removal is available at [Wolters Kluwer - Combining Domain Expertise With Advanced Technology | Wolters Kluwer](#) (<https://www.wolterskluwer.com/en>).
4. Prophylactic Antibiotic Administration
- Please refer to the section entitled: "Protocol for Administration of First (Preoperative) Dose of Prophylactic Antibiotics to Prevent Surgical Site Infections" of the Infection Prevention Policy: [Anesthesiology](#).

C. Intraoperative Care (Operating Room)

1. Environment
- a. **Ventilation:** Recirculated filtered air with exchange rates of 15 (range 13-16) air changes/hour will be measured and verified at least annually by Plant Engineering. All air is introduced at the ceiling and exhausted near the floor. Static, positive air pressure within each operating room will be monitored by Perioperative Services. To keep pressure constant, doors to operating rooms are to remain closed except as needed for passage of equipment, staff, and the patient. Air-conditioning system is not to be turned off and on while surgery is in progress. Deviations in these exchange rates or pressure differentials will be reported to Infection Prevention by OR staff. Infection Prevention will offer recommendations based on the clinical scenario (e.g., adding portable HEPA units to the OR).
 - b. **Temperature and humidity** should be maintained suitable for the care, treatment, and services provided. Variation in temperature and humidity within normal comfort to staff and patients poses no infection risk and require no Infection Prevention follow-up. From an Infection Prevention perspective, air changes and pressure differentials need a monitoring frequency, but temperature and relative humidity monitoring are not necessary so long as temperature and relative humidity are not excessive,

i.e., temperature >90°F, relative humidity >80% for longer than 48 hours. When temperature and humidity are out of range, staff should follow workflow outlined in [Attachment 3 - UNC Medical Center Perioperative Workflow for Temperature and Humidity](#).

- c. **Vents:** Surfaces of output and intake vent grilles will be inspected daily, cleaned, and kept free of dust by Environmental Services. If removal of an intake grille face is required for performing behind-the-grille cleaning, Environmental Services will submit a work request to Plant Engineering requesting behind-the-grille cleaning for the room. Changing of supply air filters is performed on a preventative maintenance schedule by Plant Engineering (at Hillsborough Hospital and Main Hospital) and by the UNC Facilities Services (at Ambulatory Surgical Center at the ACC Building).
- d. **Storage** of patient care items in the OR rooms will be in cabinets with doors or appropriately covered carts. These doors must be kept closed or cover down at all times except when accessing supplies within. Open shelving carries a risk of contamination of supplies during cases and as staff are moving about the room.
- e. **Dress Code and Zones**
 - i. Refer to Perioperative Services policy: [Perioperative Services Surgical Attire](#).
 - ii. Perioperative Services is divided into 3 zones to orient staff to aseptic protocols. The progression of restrictions is intended to provide the cleanest environment in the restricted area.
 - iii. The designated areas should be separated:
 - by signage indicating the attire required for entering the area and who may access the area,
 - by doors separating the restricted area from the semi-restricted area and
 - by doors, signage, or a line of demarcation to identify the separation between the unrestricted and semi-restricted areas.
- f. **Unrestricted Zone:** No perioperative-specific attire or HVAC requirements.
- g. **Semi-Restricted Zone:** An identified area between the unrestricted and restricted zones.
- h. **Restricted Zone:** Defined as each operating room which is accessed through a Semi-Restricted Zone. Limit the number of staff entering the operating room to necessary personnel.

- i. Exiting: When leaving Perioperative Service areas for public areas, staff will change scrubs if soiled. **Mask, disposable hat, and shoe covers will be removed upon leaving the department and discarded into regular trash receptacles.** Signs will be posted at exits stating dress requirements.

2. Patient Care in Operating Room

- a. Patient care within the Restricted Zone will be performed using strict surgical aseptic practices.
- b. Staff moving within or around the sterile field should do so in a manner that prevents contamination of the sterile field.
- c. Sterile ink (e.g., sterile marker) is used to mark skin or tissue on the sterile field.
- d. Prior to the surgical skin prep, the incision site should be thoroughly cleaned to remove any gross contamination.
- e. A surgical skin prep of the operative site will be performed in the assigned operating room before surgery using standard aseptic technique and manufacturer's instructions for use (MIFU). Refer to Infection Prevention policy: [Chlorhexidine Gluconate \(CHG\) Treatments and Skin Antisepsis](#).
- f. Draping of the operative site with sterile, disposable, non-woven drapes will be performed using sterile technique.

3. Sterile Field Preparation

- a. All surgical procedure setups will be prepared by staff trained in aseptic principles and techniques.
- b. All sterile packages will be assessed for sterility before opening and dispensing to the sterile field. If an item in a sterile package or tray is noted to be visibly soiled or moisture is noticed on instruments or packaging, the entire tray should be removed from the sterile field and a new tray obtained. Sterile equipment and solutions should ideally be assembled immediately prior to use.
- c. Sterile fields should be prepared as close as possible to the time of use. The potential for contamination increases with time because dust and other particles present in the ambient environment settle on horizontal surfaces over time.
- d. Once a sterile field is prepared, it should not be left unattended or moved from one room to another. Once the patient enters the room, the sterile setup cannot be used for another patient should surgery be canceled.
- e. At the conclusion of surgery, the sterile team will remove gown and gloves and deposit in the appropriate container inside the room. Hand hygiene

should then be performed with an antimicrobial hand hygiene agent.

4. Postoperative Incision Care

- a. Protect an incision closed primarily with a sterile dressing for 24-48 hours postoperatively unless the physician orders a different dressing routine.
- b. Site-specific sterile dressings should be applied in the Operating Room when indicated (e.g., peritoneal dialysis catheter, VP shunts dressings).
- c. Perform hand hygiene before and after dressing changes and before any contact with the surgical site.
- d. Use sterile wound cleanser and supplies for dressing changes.

5. Surgical Instruments and Supplies

a. Endoscopic Instruments

- i. Refer to the Infection Prevention policy, [Endoscope](#), for staff competency requirements.
- ii. Endoscopic instruments (e.g., laparoscopes, arthroscopes) that contact sterile tissue are critical devices and must be sterilized after each use. Refer to the Infection Prevention policy: [Endoscope](#) for details.
- iii. Endoscopic instruments (e.g., GI endoscopes, cystoscopes, bronchoscopes) that contact mucous membranes are semi-critical devices and must be at least high-level disinfected (HLD'd) after each use. Refer to the Infection Prevention policy: [Endoscope](#) for details.
- iv. Endoscopes must be pre-cleaned per MIFU at the point of use, a yellow "dirty" tag is attached to the scope indicating the need for reprocessing and transported immediately after use to HLD or sterilization location.
- v. A green "clean" tag indicates the scope has been appropriately disinfected and is ready for use. Scopes without a green "clean" tag must be considered dirty, not ready to use on a patient, and sent immediately for reprocessing.

b. Implantable Devices

- i. All implantable devices will be sterile prior to insertion. Many devices are received pre-sterilized. Manufacturer recommendations and the Operating Room Policy should be followed for use of these objects. Other devices may require sterilization prior to insertion.

- ii. Removed orthopedic implants requested by patients are cleaned, sterilized, and placed in a container before being given to a patient.
- c. Instruments for Animal Labs
 - See Infection Prevention Policy: [Research Animals in UNC Health Facilities](#).
- d. Ultrasound Probes
 - i. If ultrasound is used intraoperatively on sterile tissue, the probe is classed as a critical device and, therefore, must be cleaned and sterilized (according to the MIFU) before patient use.
 - ii. An ultrasound probe that is used on mucous membranes must be cleaned and high-level disinfected according to MIFU. The above reprocessing guidelines must be followed even if a sterile probe cover was used. This recommendation in the CDC guidelines is reinforced with findings that ultrasound probe covers have a high rate of perforation even before use.
- e. Pre-sterilized Manufactured Products
 - i. Products may be unpacked from shipping cartons in semi-restricted zones. Shipping cartons or boxes are not stored in the semi-restricted zone.
 - ii. CD supplies in the Sterile Supply Room will be routinely rotated and restocked by Central Distribution. Specialty supplies will be routinely rotated by the Inventory Technicians.
 - iii. Before opening products, packages containing sterile items should be inspected for integrity.
- f. Reusable Items
 - i. Reusable surgical instruments and materials must be reprocessed, according to MIFU.
 - ii. Fiberoptic equipment (e.g., laparoscopes, arthroscopes) should be reprocessed according to MIFU.
 - iii. If not disposable, laryngoscope blades and handles should be minimally high-level disinfected between patients and stored in a clean manner after processing.
- g. Supplies unused during case:
 - i. Dispose of any unused supplies that are opened, wet, or visibly

soiled/contaminated. (Any unused supplies that can be used by the patient may be sent with the patient.)

- ii. Patient care supplies in cabinets, carts, and drawers should be retrieved with clean hands.

h. Rapid Instrument Sterilization

- Please refer to the Infection Prevention policy: [Sterilization of Reusable Patient-Care Equipment](#) for guidance and details on rapid instrument sterilization.

i. Packaged, Sterilized Items

- i. Items sterilized in the CPD and SPD will not have an expiration date. These items may be used as long as the integrity of the package is not compromised by becoming torn, wet, punctured, opened, or having an unsealed or broken seal/lock. (For the complete policy on indefinite shelf life, refer to the Infection Prevention policy: [Central Processing Department \(CPD\) and Other Surgical Services Support Areas Using Sterilizers or Storing CPD Sterilized Items](#).)
- ii. Prior to use, each sterile package or tray must be checked for tears, evidence of moisture, punctures, compromised integrity, and unsealed or broken seals or locks. Metal trays with perforated tops must be checked for the presence of intact filters.
- iii. Verify that the sterilizer tape or the tamper-proof indicator has changed to proper color.
- iv. Verify that the inside indicator has changed to proper color.
- v. Any package that has fallen or been dropped on the floor must be inspected for damage to the packaging or contents. If the package is heat-sealed in impervious plastic and the seal is still intact, the package should be considered not contaminated. If undamaged, items packaged in plastic need not be reprocessed. Paper-wrapped items that fall or are dropped on the floor are considered contaminated.

6. Creutzfeldt-Jakob Disease (CJD)

Special precautions are necessary for patients known or suspected to have Creutzfeldt-Jakob Disease (CJD). Staff should be familiar with and strictly follow the guidelines provided in the Infection Prevention policy: [Creutzfeldt-Jakob Disease \(CJD\)](#).

D. Postoperative Care

For general Infection Prevention guidelines for patient care, refer to the Infection Prevention policy: [Infection Prevention Guidelines for Safe Patient Care](#).

1. Dressings

- Aseptic technique will be used in handling dressings or incision sites. Reinforce the dressing with sterile materials when the dressing becomes saturated. Staff should perform hand hygiene with an antiseptic agent before and after dressing changes or any contact with the surgical site. Gloves must be worn for dressing changes.

2. Non-Disposable Equipment

- a. Non-disposable equipment should be returned to the place of origin (e.g., Patient Equipment, Anesthesia Workroom, CPD) for reprocessing. All cables used for patient monitoring (e.g., cardiac cables, EKG cables, pulse oximeter) should be disinfected with an EPA-registered disinfectant between each patient use.
- b. Stretchers should be routinely cleaned between patients using an EPA-registered disinfectant. Clean linens will be used for each patient.

III. Implementation

It is the responsibility of the Vice President of Perioperative Services and the Chairs of SOM Departments (e.g., Anesthesiology, Orthopedic, ENT, Surgery, Dental, GYN, Neurology) who utilize the surgical service areas to implement this policy.

IV. References

CDC Guideline for Prevention of Surgical Site Infections 2017.

AORN. (n.d.). *AORN guidelines*. Association of periOperative Registered Nurses.

<https://www.aornguidelines.org/guidelines?bookid=2260>

Calderwood, M. S., Anderson, D. J., Bratzler, D. W., Dellinger, E. P., Garcia-Houchins, S., Maragakis, L. L., Nyquist, A. C., Perkins, K. M., Preas, M. A., Saiman, L., Schaffzin, J. K., Schweizer, M., Yokoe, D. S., & Kaye, K. S. (2023). Strategies to prevent surgical site infections in acute-care hospitals: 2022 update. *Infection Control & Hospital Epidemiology*, 44(6), 695–720. <https://doi.org/10.1017/ice.2023.67>

Centers for Disease Control and Prevention. (2008). *Guideline for disinfection and sterilization in healthcare facilities, 2008*. Retrieved from <https://www.cdc.gov/infection-control/media/pdfs/Guideline-Disinfection-H.pdf>

AAMI ST79, 2017

V. Related Policies

[Hospital Police Policy: DOC/Forensic Patient Procedures](#)

[Infection Prevention Policy: Anesthesiology](#)

[Infection Prevention Policy: Central Processing Department \(CPD\) and Other Surgical Services Support Areas Using Sterilizers or Storing CPD Sterilized Items](#)

[Infection Prevention Policy: Chlorhexidine Gluconate \(CHG\) Treatments and Skin Antisepsis](#)

[Infection Prevention Policy: Creutzfeldt-Jakob Disease \(CJD\)](#)

[Infection Prevention Policy: Endoscope](#)

[Infection Prevention Policy: Environmental Services](#)

[Infection Prevention Policy: Exposure Control Plan for Bloodborne Pathogens](#)

[Infection Prevention Policy: Guidelines for Disposal of Regulated Medical Waste](#)

[Infection Prevention Policy: Hand Hygiene and Use of Antiseptics for Skin Preparation](#)

[Infection Prevention Policy: Infection Prevention Guidelines for Safe Patient Care](#)

[Infection Prevention Policy: Isolation Precautions](#)

[Infection Prevention Policy: Research Animals in UNC Health Facilities](#)

[Infection Prevention Policy: Reuse of Single-Use Devices \(SUDs\)](#)

[Infection Prevention Policy: Sterilization of Reusable Patient-Care Items](#)

[Infection Prevention Policy: Tuberculosis Control Plan](#)

[Nursing Policy: Hospital Visitation](#)

[Nursing Policy: Operative/Procedure Management](#)

[Occupational Health Services Policy: Infection Control and Screening Program: Occupational Health Service](#)

[Perioperative Services Policy: Allograft and Autograft Tissue Storage and Handling](#)

[Perioperative Services Policy: Intraoperative Specimen Management](#)

[Perioperative Services Policy: PeriOperative Services Surgical Attire](#)

[Perioperative Services Policy: Visitation in PreOp and PACU](#)

VI. Responsible for Content

Department of Infection Prevention Leadership Team

All Revision Dates

02/2025, 03/2023, 01/2023, 11/2022, 12/2021, 07/2021, 01/2020, 04/2019, 01/2018, 02/2017, 12/2016, 02/2016, 02/2013, 01/2010, 01/2007, 06/2004, 03/2004

Attachments

- 1: [Environmental Cleaning and Disinfection in the Operating Room](#)
- 2: [Surgical Services/Operating Room - Observers Protocol](#)
- [UNC Medical Center Staff Workflow \(Temp Humidity\).pdf](#)

Approval Signatures

Step Description	Approver	Date
Policy Stat Administrator	Judith Strubin: Mgr Program-IP	02/2025
AVP Quality UNCMC	Erin Burgess: AVP Quality UNCMC	02/2025
Dir Epidemiology	Emily Vavalle: Dir Epidemiology	02/2025
	Sherie Goldbach: Project Coordinator	02/2025

Applicability

UNC Medical Center

Standards

No standards are associated with this document