I. Description

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

II. Rationale

Infection is a well-recognized risk of surgical and invasive procedures. Strict adherence to the evidence-based recommendations in this policy can reduce the risk of infection for the surgical patient.

III. Policy

A. General Information

1. Education

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

2. Environment/Cleaning

   a. Pre-Op and PACU should be cleaned according to the Infection Prevention: Environmental Services Policy.

   b. Routine daily cleaning of floors with an EPA-registered germicide is required as specified in the Infection Prevention: Environmental Services Policy.

   c. Cubicle curtains are changed every 6 months and when visibly soiled by Environmental Services.

   d. All permanent equipment in patient bed spaces (e.g., bedside tables, monitors) should be cleaned daily with an EPA-registered hospital disinfectant (e.g., Sani-Cloths, MetriGuard, Oxivir TB). Equipment positioned close to the patient or used between patients should be cleaned after each patient.

   e. After each patient transport on a surgical stretcher, linens are changed and surfaces are
wiped with an EPA-registered hospital disinfectant. The entire stretcher will be cleaned with an EPA-registered hospital disinfectant when visibly soiled and at the end of the day.

f. In the Operating Rooms, the environment will be maintained by daily, intraoperative, interim and weekly terminal cleaning routine. (Refer to the Environmental Cleaning and Disinfection in the Operating Room, Attachment 3).

g. All blood spills should be cleaned up immediately and the spill area decontaminated with an EPA-registered hospital 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

a. Personnel must adhere to the Infection Prevention: Hand Hygiene and Use of antiseptics for Skin Preparation Policy. Hand hygiene should be performed with an approved antimicrobial handwashing agent or alcohol based hand-rub before and after each patient contact.

b. In ORs hand hygiene is monitored prior to donning gloves and after removal of gloves. This is monitored by Perioperative Services Staff.

c. In Pre-Op and PACU hand hygiene is monitored prior to entering patient care area and upon exiting the area.

d. Operating Room Personnel must adhere to the Surgical Hand Antisepsis Guidelines. (Refer to Surgical Services/Operating Room – Surgical Hand Antisepsis, Attachment 5).

e. Artificial nail applications are not permitted in staff providing direct patient care. Nails should be kept clean, well-manicured, and of a reasonable length (e.g., ¼ inch from the tip of the finger). Nail polish must be well maintained and not chipped. Please refer to the policy: Hand Hygiene and Use of Antiseptics for Skin Preparation for additional information.

f. Personnel with dermatitis or open cuts/lesions on the hands or face must be evaluated in OHS before reporting to work.

4. Laboratory Specimens

a. Lab specimens including those from the operating rooms are placed in appropriate leak-resistant containers taking care not to contaminate the outside of the container. Specimens sent via the tube system or for pick-up by laboratory personnel/robot are placed in a sealed specimen bag with a biohazard label. Specimens transported by OR staff to the lab (e.g. pathology) must be in a secondary container (e.g. sealed specimen bag, bath basin, cooler) displaying a biohazard label.

5. Personnel

a. Personnel should adhere to guidelines established by the Occupational Health Service (OHS). Refer to Infection Prevention: Infection Prevention and Screening Program: Occupational Health Service.

b. Eating, drinking, applying lip balm and handling contact lenses are prohibited in areas where there is potential for contamination with blood or other potentially infectious materials. This includes the Semi-restricted and Restricted areas.
c. Personnel will wear scrub clothing provided by the hospital. Clean scrubs are available in the scrub dispensers provided by Perioperative Services and will be laundered by services contracted by the hospital. Scrubs will be changed daily and when soiled.

d. Hair should be covered so it does not come into contact with patients or equipment.

e. Surgical personnel 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 such personnel have been linked epidemiologically to dissemination of the organism in the healthcare setting.

6. Precautions / Communicable Diseases

a. Standard Precautions

i. Personnel must wear personal protective equipment (e.g., protective eyewear, mask, gloves, fluid-resistant gown) as needed when splash or splatter of blood or other potentially infectious material is likely.

ii. Personnel should wear gloves when touching contaminated items. Gloves are to be removed after use and hand hygiene performed before touching clean items and prior to leaving the ORs or patient bed spaces.

iii. Personnel must adhere to the Infection Prevention: Exposure Control Plan for Bloodborne Pathogens. All needlestick/sharps, mucous membrane, and non-intact skin exposures from blood and other potentially infectious materials (OPIM) should be reported. UNC Health Care employees should call the Needlestick Hotline at 984-974-4480. This service is available 24 hours a day. University employees should call University Employee Occupational Health Clinic at 984-974-9119. After hours and on weekends, the caller will be given a contact number.

iv. The provision of safety devices will be implemented in accordance with the Infection Prevention: Exposure Control Plan for Bloodborne Pathogens.

v. Double-gloving has been shown to reduce blood exposures during operative procedures and therefore is suggested for all scrubbed personnel performing high-risk procedures or surgeries.

vi. Blunted suture needles ideally should be used in selected surgical procedures, as appropriate to prevent needle stick injuries.

vii. Sharp instruments should not be passed from hand-to-hand unless the specific surgical operation requires continuous focus. It is the responsibility of the surgeon and scrub tech to safely pass instruments. Sharp instruments should either be passed using a neutral zone or in a suitable container to decrease the possibility of injury.

b. 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 as per Appendix 9 while in the ORs, Pre-Op and PACU. Personnel should refer to the Infection Prevention: Isolation Precautions Policy and the Infection Prevention: Tuberculosis Control Plan for further
information.

iii. Patients requiring an airborne isolation room shall not be scheduled in the Ambulatory Surgical Center (ASC).

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: Reuse of Single Use Devices Policy.

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 / 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/HBH 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 Hospital Visitation policy and the Perioperative Services: Visitation Guidelines policy.
      
      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. Vendors will follow the Perioperative Services: Visitor Policy, Perioperative Services: Vendor Representative Policy and Visitation Guidelines for UNCH Perioperative Services, Purchasing: Vendor Representative Policy and Visitation Guidelines, and the Hospital Compliance: Vendor Relations policy.
      
      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.
      
      iii. Observers will comply with the Infection Prevention Guidelines for Perioperative Services policy while in the surgical suite. Observers will receive an orientation to pertinent protocols, as necessary. (Refer to Surgical Services/Operating Room – Observers Protocol, Attachment 4.)
      
      iv. Corrections officers will comply with the Prisoners/Forensic Patients 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 nursing 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.

v. Children older than one year of age to pre-teens will be considered appropriate candidates for parent accompaniment to OR. Although other aged children may be considered for special circumstances.

10. Waste Disposal

a. Perioperative Services personnel will comply with the Infection Prevention Policy: "Guidelines for the Disposal of Regulated Medical Waste."

b. The majority of solid waste from Perioperative Services is considered non-regulated medical waste and will be placed in a regular white biohazard plastic trash bag and discarded with the general hospital waste.

c. Blood, irrigating solution, and other potentially infectious material (OPIM) > 20 mL per unit vessel may be discarded by safely pouring contents into the clinical (non-handwashing) sink or discarding the resealed container in a regular trash bag, or by means of manufactured fluid disposal system (e.g., SAF-T Pump, Neptune system). Alternatively, the suction canister may be securely capped and discarded upright in a red trash bag lined biohazard box. Additionally, solidifiers for OPIM vessels may be ordered in Lawson.

d. All empty blood product containers (bags and bottles), as well as administration tubing, will be placed in a regular trash bag.

e. Surgical needles and small sharps are collected in needle counter containers and placed in a sharps disposal container. Surgical sharps that are too large for the needle counter container should be placed directly into the sharps disposal container.

f. Non-surgical needles and syringes with needle attached are deposited in the sharps disposal container located in each OR. Do not recap needles. Sharps disposal containers should be tightly sealed and emptied when ¾ full.

g. Transfer carts used for transporting waste outside the Operating Room should be cleaned with an EPA registered hospital disinfectant prior to returning them to the surgical suite.

B. Preoperative Care / Patient Preparation

1. General Guidelines

a. Encourage tobacco cessation. At minimum, instruct patients to abstain for at least 30 days before elective operation from smoking cigarettes, cigars, pipes, or any other tobacco product.

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.

c. During the perioperative phase, control serum blood glucose levels in all diabetic patients.

d. Before elective colorectal operations when indicated the agreed upon preoperative mechanical and oral antimicrobial bowel prep should be ordered and patient educated on the procedure.

e. An OR disposable cap will be applied to contain the patient's hair and to prevent temperature loss while in surgery.

f. For inpatients, a Prediagnostic/Operative Checklist will be completed on the electronic medical record by unit nurses. The Pre-Op nurse will review and verify that the checklist has been completed upon arrival Pre-Op. For outpatients, a Pre-admission Assessment is completed.

2. Preoperative CHG treatments

a. Upon admission to Pre-Op, verify and document that the patient performed whole body CHG treatment with CHG-containing wipes the night before their surgery.

b. On the day of surgery, and no longer than 6 hours prior to surgery, staff should apply a second whole body treatment using CHG-containing wipes.

c. Refer to nursing policy Operative/Procedural Management for contraindications, exceptions, and specific instructions regarding application of wipes.

d. Document that this was performed in the Pre-Op area.

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. The use of razors is prohibited except for scrotal surgery when use of clippers are found to cause excessive damage to the skin; only a single use disposable razor may be used.

b. Pre-operative clipping ideally should be performed outside the OR (e.g. in the patient's room or Pre-Op). A new disposable clipper head is used for each patient. The clipper handle should be cleaned between patients. Children and occasionally adults may require hair removal in the OR. (e.g., a child may be uncooperative with hair removal until after sedation has been administered).

4. Prophylactic Antibiotic Administration

For the "Protocol for Administration of First (Preoperative) Dose of Prophylactic Antibiotics to Prevent Surgical Site Infections," refer to the Anesthesiology Infection Prevention Policy.

5. Marking of the Surgical Site

a. Non-sterile permanent markers containing alcohol (e.g., Sharpie) are used to mark the surgical site prior to the procedure and before skin preparation. Discard if used on a patient on Contact Precautions or if visibly contaminated.
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 maintained and monitored 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 Plant Engineering. To keep pressure constant, doors to operating rooms are to remain closed except as needed for passage of equipment, personnel, 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 Plant Engineering and/or OR staff. Infection Prevention will offer recommendations based on the clinical scenario (e.g., add portable HEPA units to the OR).

   b. Temperature and humidity should be maintained suitable for the care, treatment and services provided. Variation within normal comfort to staff and patients poses no infection risk and requires 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 is not necessary so long as temperature and relative humidity are not excessive (temperature >90°F, relative humidity >80% for longer than 48 hours).

   c. Vents: Output and intake vent grills are to be inspected daily and kept free of dust by Environmental Services personnel in the Main Hospital and Women's and Children's Hospital, and by the Maintenance Staff at the ASC and HBH. Routine change of filters is performed by Plant Engineering. Condition of filters is computer monitored in Plant Engineering or UFS for the ASC.

   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 at all times except when accessing supplies within. Open shelving carries a risk of contamination of supplies during cases and as personnel are moving about the room.

2. Dress Code / Zones

   Personnel will adhere to OR Dress Standards and Entering/Exiting Semi-Restricted and Restricted Zoned Policy (refer to Infection Control Attire in Restricted Zones, Attachment 1). Perioperative Services is divided into 3 zones to orient personnel to aseptic protocols.

   a. Perioperative Services is divided into 3 zones to orient personnel to aseptic protocols. The designated areas should be separated:

      i. by signage indicating the attire required for entering the area and who may access the area;

      ii. by doors separating the restricted area from the semi-restricted area; and

      iii. by doors, signage, or a line of demarcation to identify the separation between the unrestricted and semi-restricted areas.

   b. Unrestricted Zone: Defined as Pre-Op, PACU, administrative offices, lounges, and classrooms. Street clothes are permitted.
c. Semi-Restricted Zone: Defined as the main surgical suites which include Main, W/C operating rooms, ASC operating rooms, HBH operating rooms, utility rooms, scrub rooms, labs, instrument processing rooms, sterile supply rooms/sterile core, and connecting corridors. Signs will be posted at all entrances, stating dress requirements. Street clothes and uniforms from other departments are not permitted. Personnel entering the Semi-Restricted Zone must dress in hospital laundered scrubs or disposable, single use jumpsuits (bunny suits) provided by the department. Hair must be contained in a disposable cap or hood. Personally-owned cloth caps are permitted. Personal head coverings must not be worn for more than one day without laundering. Shoe covers are worn when there it is anticipated splashes or splatters of blood or other potentially infectious materials may soil shoes. (Refer to Infection Control Attire in Restricted Zones, Attachment 1). Disposable jumpsuits are provided for certain visitors (i.e., photographers, police guards, a parent invited to accompany a child to an operating room, or others with short, purposeful visits). Outpatients undergoing eye surgery are permitted to wear street clothes from the waist down that are covered with a hospital gown.

d. Restricted Zone: Defined as each operating room within the Semi-Restricted Zone, where surgery is performed including OR 17. Limit the number of personnel entering the operating room to necessary personnel. Personal items such as backpacks should not enter the operating room. In addition to OR attire, a mask that fully covers the mouth and nose and is secured in a manner that prevents venting will be applied before entering an operating room, if an operation is about to begin or is already underway, or if sterile instruments are exposed. Hair on the head and face (i.e., beards) must be fully covered to prevent shedding of hair and squamous cells. Large sideburns and ponytails must be covered. Disposable bouffant and hood style covers will be provided. Bald and shaved heads must be covered to prevent shedding of squamous cells. Personally-owned cloth caps are permitted. Personal head coverings must not be worn for more than one day without laundering. Personal head coverings soiled with blood or OPIM must be discarded and must not be taken home for laundering. If scrubbed, eye protection is provided and must be worn as specified in the policy: "Exposure Control Plan for Bloodborne Pathogens." Impervious sterile gowns are provided, as well as impervious boots, if needed.

e. Exiting: When leaving Perioperative Service areas for public areas, personnel will change scrubs if soiled. **Mask, disposable hat, and shoe covers will be removed upon leaving the department and discarded into regular trash receptacles.** If returning to the Semi-Restricted Zone, OR scrubs ideally should be changed. Signs will be posted at exits stating dress requirements.

3. Patient Care in Operating Room

   a. Patient care within the Restricted Zone will be performed using strict surgical aseptic practices and confining patient contamination to the center of an OR where surgery is performed. Extreme care will be taken to prevent spread of patient contamination to the periphery and outside of the room.

   b. Personnel 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. Chlorhexidine gluconate with alcohol (e.g., ChloraPrep) is the antiseptic that should be used unless there is a medical contraindication in which case iodophors with alcohol may be used. The only contraindication to betadine (iodophors) is reaction to previous use of topical iodine preparation or ingested iodine. Chlorhexidine-alcohol (e.g., ChloraPrep) has been demonstrated to be the most effective agent to use for skin antisepsis prior to surgery. The preoperative antiseptic skin preparation should be applied per manufacturer's recommendations. The prepped area must be large enough to extend the incision or create new incisions or drain site, if necessary. Chlorhexidine-alcohol (e.g., ChloraPrep) may be used on infants and neonates. Following manufacturer's instructions for use with caution in infants weighing < 1000 grams.

Note: For neurosurgery and spinal surgery involving the meninges, Chlorhexidine-alcohol (e.g., ChloraPrep) may be used with strict adherence to the manufacturer's application and drying instructions. Care should be taken to avoid direct contact with the meninges as per manufacturer's instructions. Chlorhexidine-alcohol (e.g., ChloraPrep) has been demonstrated to be the most effective agent for skin antisepsis prior to surgery and a thorough review of the literature has not revealed any reported complications that can be attributed to the use of Chlorhexidine-alcohol (e.g., ChloraPrep) in such procedures. The benefits of reducing surgical site infection outweigh the theoretical risk of contact with the meninges. The surgeons will take care that this agent, which is applied to the skin and allowed to dry, does not have contact in its wet form with the central nervous system or meninges.

f. Draping of the operative site with sterile, disposable, nonwoven drapes will be performed using sterile technique (refer to UNC Health Care System Procedure Manual – Selection of Draping Gowning Material, Attachment 7).

g. When indicated, use impervious plastic wound protectors for gastrointestinal surgery.

h. During the surgery, tissues should be handled gently, effective hemostasis maintained, and devitalized tissue and foreign bodies (e.g., sutures, charred tissues, necrotic debris) minimized. Dead space at the surgical site should be eradicated. Use delayed primary skin closure or leave an incision open to heal by second intention if the surgeon considers the surgical site to be heavily contaminated (e.g., Class III and Class IV).

i. If drainage is necessary, use a closed suction drain. Place a drain through a separate incision distant from the operative incision. Remove the drain as soon as possible. Negative pressure wound systems (e.g., VAC) should be used and managed according to manufacturer's recommendations.

4. Sterile Field Preparation

   a. All surgical procedure setups will be prepared by personnel 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 cancelled.

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 handwashing agent.

5. 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.

6. Surgical Instruments and Supplies

a. Endoscopic Instruments

i. Endoscopic instruments (e.g., GI endoscopes, bronchoscopes) that come in contact with mucous membranes are semi-critical devices and must be at least high-level disinfected (HLD’d) after each use. After HLD, the endoscope will be stored in a manner to prevent recontamination. Additionally, a green "clean" tag will be attached to the scope indicating 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. After use on a patient, a yellow "dirty" tag is attached to the scope indicating the need for reprocessing.

ii. Endoscopic instruments (e.g., laparoscopes, arthroscopes) that come in contact with sterile tissue are critical devices and must be sterilized after each use. Refer to the Cleaning, Disinfection, and Sterilization Patient Care Items Policy and the Perioperative Services policy: Flexible Endoscope Care and Handling.

iii. All staff responsible for high-level disinfected endoscopic instruments must be competency tested at the completion of initial training and yearly (at least every 365 days). The completed competency form must be readily accessible (refer to the Infection Prevention policy: Endoscope – Attachment 3-UNCHC Endoscope Reprocessing Competency).

iv. Staff responsible for high-level disinfection of endoscopic instruments shall attend the UNCH High Level Disinfection 3-hour workshop initially and then the 1-hour refresher
yearly. Both the workshop and the refresher are provided by the Infection Prevention department. Contact Infection Prevention for details.

v. For tracking purposes, there must be a system in place for documenting the use of reusable, lumened flexible gastrointestinal endoscopes and bronchoscopes as these are the two types of scopes that have been associated with outbreaks in the literature. Documentation shall include the patient’s name, medical record number, procedure, date and time, endoscopist, and the unique identifying number of the endoscope used.

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 at UNC Health Care prior to insertion.

c. Reuse of Metal Implants
   
   i. Metal implants which have been inserted into and removed from a patient during the same surgical procedure or used in another patient may be used only in accordance with the following procedure. This procedure applies to metal implants only.

   ii. Metal implants, plates, and screws (not labeled as single use) may be reused during the same surgical procedure or used in another patient when the implants, plates, or screws:
       • have been inserted or attempted to be inserted and then removed from a patient during the same surgical procedure
       • have been determined by the attending physician to be suitable for and capable of withstanding cleansing and re-sterilization when contaminated with blood and body fluids
       • have not been damaged, deformed, or overstressed during their insertion or attempted insertion and removed; and
       • are structurally, mechanically, and practically safe and effective for use.
       • Nursing staff will segregate all used implants, plates, or screws during the procedure for the attending physician to inspect at the end of the procedure.
       • Metal implants, plates, and screws approved by the attending physician will be returned to the reprocessing area for cleaning and sterilization.

   iii. Removed orthopedic implants requested by patients are cleaned, sterilized and placed in a container before being given to a patient.

d. Instruments for Animal Labs
   
   i. See Infection Prevention policy: Research Animals in UNC Health Care Facilities

e. Ultrasound Probes
   
   i. If ultrasound is used intraoperatively on sterile tissue, the probe must be cleaned and sterilized (according to the manufacturer’s IFU) before the next patient use. An
ultrasound probe that is used on mucous membranes must be cleaned and high-level disinfected (e.g., soaked in 2% glutaraldehyde for 20 minutes or according to manufacturer's recommendation) prior to the next patient use. 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.

f. 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. (Refer to Infection Prevention Guidelines for Perioperative Services, Attachment 6 – Guidelines for Monitoring of Sterile Items in Storage and Prior to Use)

g. Reusable Items
   i. Reusable surgical instruments and materials must be reprocessed according to published guidelines and manufacturer's recommendations. Follow guidelines in the Infection Prevention Policy: Cleaning, Disinfection, and Sterilization of Patient-Care Items.
   ii. Fiberoptic equipment (e.g., laparoscopes, arthroscopes) should be sterilized according to manufacturer's recommendations. If sterilization is not feasible, these items require high-level disinfection. Follow guidelines in the Infection Prevention policy: Infection Prevention policy: Cleaning, Disinfection and Sterilization of Patient Care Items.
   iii. If not disposable, laryngoscope blades and handles should be minimally high-level disinfected and packaged between patients.

h. Immediate Use Sterilization
   i. Immediate use sterilization should be reserved for rare instances when the patient care item is needed immediately (e.g., to reprocess the inadvertently dropped instrument) or for sterilizing patient care items that cannot be packaged, sterilized, and stored prior to use. When feasible, immediate use sterilization should not be utilized for implantable surgical devices.
   ii. Please refer to the Perioperative Services policy: Immediate Use Sterilization for guidance and details on immediate use sterilization.

i. Shelf Life of Packaged, Sterilized Items
   i. Items sterilized in the CPD 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.

7. Sterilizer Monitoring, Documentation, and Maintenance
   a. Surgical instruments and supplies used for surgery must be sterile. To ensure that material processed in the sterilizer has been exposed to the proper sterilization parameters, the sterilizer will be monitored using various parameters (physical, chemical, and biological) and results documented.
   b. Records pertaining to the routine monitoring and usage of sterilizers will be maintained in an organized fashion and kept up-to-date. For example, parameter printouts are filed according to date and are stored so that retrieval of information is facilitated. Biological indicator (e.g., Attest) results (e.g., device identified, test and control results indicated) are documented in the sterilization log book and the electronic record. The sterilizer documentation will be retained for 5 years. All sterilizers in the operating room will be numbered so that the sterilizer number can be incorporated into the sterilization records.
   c. For those areas that utilize sterilizers on a regular basis, biological indicators will be tested at least weekly. Every load should be monitored with a spore test if it contains implantable objects.
      i. Positive Spore Test: If spores are not killed in routine spore tests, the sterilizer should immediately be checked for proper use and function. In collaboration with Infection Prevention, a decision will be made on the need for recalling items. Implantable objects will be immediately recalled. If spore tests remain positive after proper use of the sterilizer is documented, its use should be discontinued and it should be serviced.
   d. When sterilizers in the OR operate as pre-vacuum rather than gravity displacement sterilizers, a Bowie-Dick test is necessary to monitor the effectiveness of the vacuum.
   e. Mandatory in-services/competency testing will be conducted on an annual basis to ensure that all staff members understand the documentation required for OR sterilizers.
   f. Sterilizers (outside and chamber) will be cleaned on a routine basis (e.g., monthly) according to manufacturer recommendations for cleaning. Cleaning will be done by ES personnel.
   g. Routine Maintenance Checks: All autoclaves and gas sterilizers in Perioperative Services will be inspected and maintained by the Aramark Service Representative on a 6-month rotation as outlined in the Preventive Maintenance Agreement (PMA). Documentation of inspections are recorded and retained in the Hospital Plant Engineering Department.

8. Support Personnel
   a. Radiologist, Medical Illustrationist, Pathologist, Plant Engineers, etc., whose service is requested will adhere to the Infection Prevention Guidelines for Perioperative Services and will be dressed accordingly.
   b. Equipment: Support personnel will be responsible for their equipment’s operation, maintenance, and inspection. They will be responsible for cleaning the equipment prior to entering the restricted zone.

9. Creutzfeldt-Jakob Disease (CJD)
   Special precautions are necessary for patients known or suspected to have Creutzfeldt-Jakob
D. Postoperative Care

For general Infection Prevention guidelines for patient care, refer to: Infection Prevention Guidelines for Adult and Pediatric Inpatient Care Policy.

1. Dressings
   Aseptic technique will be used in handling dressings or incision sites. Reinforce the dressing with sterile materials when the dressing becomes saturated. Healthcare Personnel (HCP) 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. Equipment
   a. Respiratory Equipment
      i. Oral and nasal airways will be inserted using clean technique. Airways should be transferred with the patient or discarded after use.
      ii. Endotracheal suctioning is done using aseptic technique. A sterile catheter is used for each suctioning and discarded unless an in-line suction catheter is used. Personnel should wear sterile gloves while suctioning and other PPE as necessary. Fluid used for instillation into the bronchial tree must be sterile.
      iii. Respiratory therapy equipment will receive routine care as specified in the Infection Prevention policy: Respiratory Care Department.
      iv. Adult and pediatric ventilation masks, bags, and tubing are disposed of after each patient use.
      v. Disposable O2 tubing connected to the portable O2 tank should be discarded after each patient.
      vi. Clean suction equipment will be used for each patient. Used suction equipment will be transported with the patient to the postoperative location if it is to be continued.
   b. Non-Disposable Equipment
      i. 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 hospital disinfectant between each patient use.
      ii. Stretchers should be routinely cleaned between patients using an EPA-registered disinfectant. Clean linens will be used for each patient.

IV. 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.
V. References


CDC Guideline for Prevention of Surgical Site Infections 2017.


AORN Guidelines for Perioperative Practice, 2016

Strategies to Prevent Surgical Site Infections in Acute Care Hospitals: 2014 Update. The Society for Healthcare Epidemiology of America,


AAMI ST79, 2017

VI. Related Policies

Infection Prevention: Environmental Services Policy

Infection Prevention: Hand Hygiene and Use of antiseptics for Skin Preparation Policy

Infection Prevention: Infection Prevention and Screening Program: Occupational Health Service.

Infection Prevention: Exposure Control Plan for Bloodborne Pathogens

Infection Prevention: Isolation Precautions Policy

Infection Prevention: Tuberculosis Control Plan

Infection Prevention: Reuse of Single Use Devices Policy.

Perioperative Services Policy: Allograft and Autograft Tissue Storage and Handling

Hospital Visitation policy

Perioperative Services: Visitation Guidelines policy.

Perioperative Services: Vendor Representative Policy and Visitation Guidelines for UNCH Perioperative Services

Purchasing: Vendor Representative Policy and Visitation Guidelines

Hospital Compliance: Vendor Relations policy.

Infection Prevention Guidelines for Perioperative Services policy

Prisoners/Forensic Patients Policy

Guidelines for the Disposal of Regulated Medical Waste

Anesthesiology Infection Prevention Policy

Cleaning, Disinfection, and Sterilization Patient Care Items Policy

Perioperative Services policy: Flexible Endoscope Care and Handling

Infection Prevention policy: Research Animals in UNC Health Care Facilities
Infection Prevention Policy: Cleaning, Disinfection, and Sterilization of Patient-Care Items.

Perioperative Services policy: Immediate Use Sterilization

Central Processing Department (CPD) and Other Surgical Services Support Areas Using Sterilizers or Storing CPD Sterilized Items.

Creutzfeldt-Jakob Disease Infection Prevention Policy.

Infection Prevention Guidelines for Adult and Pediatric Inpatient Care Policy

Infection Prevention policy: Respiratory Care Department

Attachments

5: Surgical Services/Operating Room - Surgical Hand Antisepsis
1: Infection Control Attire in Restricted Zones (Operating Rooms, Procedural Rooms)
8: Implementation of Isolation in Pre-Op, ORs, and PACU
7: UNC Health Care System Procedure Manual - Selection of Draping and Gowning Material
4: Surgical Services/Operating Room - Observers Protocol
6: Guidelines for Monitoring of Sterile Items in Storage and Prior to Use
3: Environmental Cleaning and Disinfection in the Operating Room
2: Surgical Services/Operating Room - Surgical Masking Protocol

Approval Signatures

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<tr>
<th>Step Description</th>
<th>Approver</th>
<th>Date</th>
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<tbody>
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<td>Kimberly Novak-Jones: Nurse Educator</td>
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Applicability

UNC Medical Center