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Policy Area Infection Prevention
Applicability UNC Medical Center

Anesthesiology

I. Description

Provides infection prevention guidelines for anesthesiology to reduce the risk of healthcare-associated infection

II. Policy

Anesthesia personnel work in a variety of areas within the UNC Medical Center. Health care personnel (HCP) are required to follow the Infection Prevention Guidelines for Procedural Care Suites, Operating Room, and the Post Anesthesia Care Unit found in the Infection Prevention policy: [Infection Prevention Guidelines for Perioperative Services](#) and should be familiar with infection prevention policies for other clinical areas where they may work.

A. Patients

1. Safe Injection Practices: "One needle, one syringe, one patient, one time!"
 - a. Aseptic Technique:
 - i. Use aseptic technique to avoid contamination of sterile injection equipment.
 - b. Syringes, needles, and cannula:
 - i. Do not administer medications from a single syringe to multiple patients, even if the needle or cannula is changed.
 - ii. Needles, cannula, and syringes are sterile, single-use items. Do not reuse for another patient or to re-access a medication or solution

- c. Single-Dose and Multi-dose Injectable Medication Vials:
 - i. Refer to the Patient Care - Medication Management policy: [Medication Management: Use of Multi-dose Vials/Pens of Injectable Medications and Vaccines in Acute Care and Ambulatory Care Environments.](#)
 - ii. Multi-dose vials, once taken into a patient care room or area are then considered single dose vials and may not be used for other patients. The multi-dose vial must be discarded after use.
 - iii. Store in accordance with the manufacturer's instructions for use (MIFU) recommendations.
 - iv. Discard if sterility is compromised or questioned.
- d. Fluid infusion and administration sets (i.e. intravenous bags, tubing, and connectors):
 - i. Use for one patient only and dispose appropriately after use.
 - ii. Consider a syringe or needle/cannula contaminated once it has been used to enter or connect to a patient's intravenous infusion bag or administration set.
 - iii. Do not use bags or bottles of intravenous solution as a common source of supply for multiple patients.
 - iv. Ports, stopcocks, and needleless connectors will be prepped with alcohol for at least 5 seconds prior to each entry. Stopcocks must be managed with aseptic technique. A sterile needleless cap, syringe, or needleless connector must cover the port when not in use. When transferring the patient from the OR to the PACU/ICU, remove used syringes and cover ports with a sterile needleless cap, using aseptic technique. Alternatively, a needleless endcap may be placed on the stopcock ports

2. Medication and Fluid Use:

- a. Use appropriate aseptic technique and hand hygiene when preparing medications.
- b. Use aseptic technique, including use of a sterile alcohol swab to cleanse the vial's rubber septum before entering the vial.
- c. Cleanse the neck of glass ampules with a sterile alcohol swab and let dry before opening the ampule.
- d. The following safety precautions are necessary:

- i. Use a sterile syringe and needle/cannula each time a medication or solution is accessed (One Needle, One Syringe, One Patient, One Time). The CDC specifically states, "Healthcare providers should never reuse a needle or syringe from one patient to another or to withdraw medicine from a vial." Syringes, needles and cannula are sterile single-use items and must not be reused to access any medication or solution.
 - ii. Do not use a medication or solution for multiple patients in the "immediate patient treatment area." For practice of anesthesia, the CDC defines the "immediate patient treatment area" to include, at minimum, surgery/procedure rooms when anesthesia is administered and any anesthesia medication carts used in or for those rooms.
- e. Needles should not be recapped routinely; however, in cases where recapping is necessary, use a one-handed technique to avoid needlesticks.
- f. Discard all unused and/or opened medication/fluid containers (e.g., cap off, bag entered) no later than the end of the patient's anesthesia. Exception: bag/bottle in use with administration tubing connected to the patient's vascular access.
- g. Open single-dose ampules must be immediately discarded and not be stored for any time period.
- h. Discard used needles/syringes intact in a nearby sharps container as soon as possible after use. Safety devices must be deployed before discarding into sharps container.
- i. Store clean and sterile syringes, needles, and related items in a designated clean area to avoid cross contamination from used and dirty items.
- j. At the end of the case, supplies left on the anesthesia cart should be discarded. Unopened medication vials may be disinfected and used on another case.

3. Administration of Prophylactic Antibiotics to Prevent Surgical Site Infections

- a. Administer antimicrobial prophylaxis according to evidence-based standards and guidelines. Refer to [UNCMC Pharmacy Perioperative Antibiotic Protocol and the Adult Surgical Prophylaxis Quick Guide](#).
- ### 4. Placement and care of indwelling epidural catheters – refer to the Infection Prevention policy: [Infection Control Guidelines for Adult and Pediatric Care](#).
- a. Infectious contraindications to epidural anesthesia include local infection at the proposed site of insertion and systemic infection in a patient who has

not received adequate antibiotic therapy.

- b. Placement of an indwelling epidural catheter is a sterile procedure. Aseptic technique must be strictly followed when placing the epidural catheter. Remove jewelry (e.g. rings and watches), wash hands. Wear a mask covering both the nose and mouth and change the mask between each case. A cap and sterile nitrile gloves must be worn. Eye protection should be worn as per the Infection Prevention policy: [Exposure Control Plan for Bloodborne Pathogens](#). Hair of the patient should be covered. A sterile drape is placed to provide a sterile field for catheter placement.
- c. Skin preparation is accomplished using a 2% chlorhexidine-alcohol preparation (e.g., Chloraprep) or 10% povidone-iodine, apply following MIFU.
- d. After insertion of the epidural catheter, the site will be covered with a sterile dressing. The catheter is taped up the back with paper tape. The catheter is routinely inspected for migration and infection.
- e. Sterile technique must be maintained when injecting medications into epidural lines. Ports must be swabbed with alcohol and the alcohol allowed to dry prior to each entry into the port.
- f. Patients who have the epidural left in place for postoperative pain control are examined daily by the Anesthesiology Pain Team for evidence of infection (e.g., fever, redness, exudate, swelling, pain). The catheter will be immediately discontinued if there is any evidence of infection. For patients who require long-term pain control, a tunneled epidural catheter is recommended.
- g. Epidural catheters are discontinued by an anesthesiologist, allowing for examination of the puncture site for inflammation/infection, order of cultures if appropriate, and assessing the integrity of the catheter.
- h. An epidural catheter that accidentally disconnects from the luer-lock adapter should be considered contaminated and the epidural should be removed. Exception: if the disconnect occurs under direct observation (while handling the catheter) the catheter may be prepped with povidone-iodine or 70% sterile alcohol, reconnected, and this noted in the patient's chart.

5. Regional Block

- a. Regional blocks are performed by anesthesiologists or nurse anesthetists in many locations throughout the hospitals (e.g., Operating Room, Block Room, Holding Area, Procedural Care Suites, Pain Clinic, Radiology, Cysto Clinic). Aseptic technique must be maintained while performing these blocks.
 - i. Simple regional block (i.e., Bier blocks or local infiltration) requires

aseptic technique and skin preparation as described above with intravenous catheter insertion.

- ii. More invasive blocks require skin preparation and catheter insertion as described above with indwelling epidural catheters. The regional block is performed using either disposable items or reprocessed sterile block trays.

B. Equipment

1. Sterilized manufacturer products

- a. Sterilized products from the manufacturer should be removed from shipping cartons before being brought into the restricted zone.
- b. Packages should be inspected for sterile integrity and expiration date.
- c. Sterile disposable supplies opened but not used due to cancellation of a case can be used for the following case only if:
 - i. Canceled case never entered the room and
 - ii. Sterile disposable supplies have not been left unattended
- d. Sterile trays (e.g., cut down, spinal anesthesia) should be opened immediately prior to use. Once opened, the set-up must not be left unattended. After use, all needles/sharps will be discarded into the designated puncture-proof container attached to the anesthesia cart.
- e. Single use supplies will be disposed of after use (e.g., anesthesia circuit reservoir bags, oxygen tubing, circuit hoses and airways).

2. Reusable items: All reusable items (critical, semi-critical, and non-critical) must be cleaned and reprocessed according to the device MIFU.

- a. All critical and semi-critical endoscopes must be cleaned and either sterilized or high-level disinfected according to the MIFU and following the Infection Prevention policies: [Endoscope, Sterilization of Reusable Patient-Care Items](#), and [High-Level Disinfection \(HLD\) - Manual Reprocessing of Reusable Semi-Critical Medical Devices](#).
- b. Non-critical items (e.g., head straps, blood pressure cuffs, stethoscopes, blood transfusion pumps, EKG leads) with no mucous membrane exposure can be disinfected by wiping with an EPA-registered disinfectant (e.g., Metriguard, Sani-Cloth). If items are used on patients on Enteric Precautions, wipe with a bleach wipe.
- c. All surfaces of the anesthesia machine, blood warmers, IV poles, and any other contaminated surfaces must be cleaned daily and after each patient

use with an EPA-registered disinfectant (i.e., Metriguard, or Super-Sani Cloth).

- d. All external surfaces of the anesthesia carts must be cleaned daily and after each patient use with an EPA-registered disinfectant (e.g., Sani Cloths, Metriguard). Drawers should be emptied and cleaned when visibly soiled and on a routine basis and as needed. Carts should be labeled or stored in such a way that it is clear when a cart is clean and ready for another case, or dirty and awaiting cleaning. Supplies should be checked for expiration date on a routine basis.

III. Implementation

It is the responsibility of the Chair of the Department of Anesthesiology or his/her designee to implement this policy.

IV. References

American Associate of Nurse Anesthetists. Position Statement Number 2. 13 safe practices for needle and syringe use. Reaffirmed by AANA Board of Directors November 2012.

American Association of Nurse Anesthetists. Infection Control Guide for Certified Registered Nurse Anesthetists. February, 2015.

ASA Committee on Occupational Health Task Force on Infection Control of Operating Room Personnel. Recommendations for Infection Control Practice of Anesthesiology. (Third Edition) 1999.

Mayhall, C.G. (2012). Hospital epidemiology and infection control (4th ed.). Philadelphia. Wolters Kluwer/ Lippincott, Williams, & Wilkins.

Rutala WA, Weber DJ. Disinfection and sterilization in health care facilities: what clinicians need to know. Clin Infect Dis. 2004;39:702-709.

SHEA Expert Guidance: Infection prevention in the operating room anesthesia work area, Munoz-Price et al, ICHE, 2019, 40, 1-17

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V. Related Policies

[Infection Prevention Policy: Diversional Supplies](#)

[Infection Prevention Policy: Endoscope](#)

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

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

[Infection Prevention Policy: High-Level Disinfection \(HLD\) - Manual Reprocessing of Reusable Semi-Critical Medical Devices](#)

[Infection Prevention Policy: Infection Prevention Guidelines for Adult and Pediatric Inpatient Care](#)

[Infection Prevention Policy: Infection Prevention Guidelines for Perioperative Services](#)

[Infection Prevention Policy: Isolation Precautions](#)

[Infection Prevention Policy: Patients with Cystic Fibrosis](#)

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

[Infection Prevention Policy: The Prevention of Intravascular Catheter-Related Infections](#)

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

[Nursing Policy: Blood Product & Blood Derivative Transfusion Management](#)

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

[Patient Care Policy: Medication Management: Use of Multi-Dose Vials/Pens of Injectible Medications and Vaccines in Acute Care and Ambulatory Care Environments](#)

[Perioperative Services Policy: Anesthesia Delivery System Head](#)

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Approval Signatures

Step Description	Approver	Date
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	Emily Vavalle: Dir Epidemiology	07/2022
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