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Owner	Sherie Goldbach: Project Coordinator
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 staff work in a variety of areas within the UNC Hospitals. Staff 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. Safe Injection Practices

1. "One needle, one syringe, one patient, one time!"
    a. Use Aseptic Technique:
        i. Perform hand hygiene prior to handling and preparing medications, fluids, and related supplies.
        ii. Aseptic technique must be used when entering a medication vial, and hand hygiene should be performed before preparing a medication. Vials should be handled with clean hands or clean gloves. Cleanse the rubber diaphragm of the medication vial with alcohol and allow to dry before accessing. Do not administer mediations from single-dose vials or ampules to multiple patients

or combine or save leftover contents for later use.

b. Safe use of syringes, needles, cannula:

   i. Do not administer medications from a single syringe to multiple patients, even if the needle or cannula is changed, to reduce risk of contamination. Use a new sterile syringe and needle/cannula each time a medication or solution is accessed (One Needle, One Syringe, One Patient, One Time).

   ii. 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.

   iii. Cap needleless syringes that will be used to administer multiple doses of a drug to the same patient after each administered dose. Needleless syringes should be capped with a sterile cap that completely covers the Luer connector on the syringe.

   iv. Do not use items that have fallen on the floor.

   v. Needles should not be recapped routinely; however, in cases where recapping is necessary, use a one-handed technique to avoid needlesticks.

c. Single-dose and Multi-dose Injectable Medication Vials:

   i. 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. Multi-dose vials used in the immediate patient treatment area must be discarded and may not reused.

   ii. Store in accordance with the manufacturer's instructions for use (MIFU) recommendations.

   iii. Discard if sterility is compromised or if contamination of sterile components is suspected.

   iv. For additional information refer to the Patient Care - Medication Management policy: Medication Management: Use of Multi-dose Medications and Vaccines in Acute, Operative, and Ambulatory Care Environments.

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 and managed with aseptic technique. A sterile needleless cap, syringe, or needless 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. Needleless endcaps may be placed on the stopcock ports.

v. 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.

vi. Store clean and sterile syringes, needles, and related items in a designated clean area to avoid cross-contamination from used and dirty items.

vii. At the end of the case, all supplies left out should be discarded.

2. Administration of Prophylactic Antibiotics to Prevent Surgical Site Infections

    a. Administer antimicrobial prophylaxis according to evidence-based standards and guidelines. Refer to UNCMC Guideline: Pharmacy - Perioperative Antibiotic Protocol and the Carolina Antimicrobial Stewardship Program - Adult Surgical Prophylaxis Quick Guide.

3. The UNC Hospitals Central Venous Catheter Placement Checklist should be used as a reminder for important elements of insertion.

4. Placement and care of indwelling epidural catheters

    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. Use sterile technique for placement of all epidural catheters. Remove jewelry (e.g. rings and watches), and then 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. Perform skin preparation using a 2% chlorhexidine-alcohol preparation (e.g., Chloraprep) or 10% povidone-iodine, apply following MIFU.

d. After insertion of the epidural catheter, cover the site with a sterile dressing and tape the remaining catheter up the patient's back with paper tape. Inspect the catheter routinely for migration and infection.

e. Sterile technique must be maintained when injecting medications into epidural lines. Ports must be vigorously scrubbed with a sterile alcohol swab for at least 5 seconds 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 and reconnected, and this is noted in the patient's chart.

i. For additional information, refer to the Infection Prevention policy: Infection Prevention Guidelines for Safe Patient Care.

5. Regional Block

    a. 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 Disinfection and Handling

1. Sterilized 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. Disinfection and Reprocessing: All reusable items and equipment (critical, semi-critical, and non-critical) must be cleaned and reprocessed according to the device MIFU.
    a. Anesthesia workspace and all equipment, before use on patient, should visually appear clean.
    b. 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.
    c. 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). Items used for patients on transmission-based precautions should be disinfected after use according to guidelines in the Infection Prevention policy: Cleaning and Disinfection of Non-Critical Items. If items are used on patients on Enteric Precautions, wipe with a bleach wipe.
    d. All surfaces of the anesthesia machine, blood warmers, IV poles, and any other surfaces must be cleaned daily and after each patient and at the beginning of each day with an EPA-registered disinfectant (i.e., Metriguard,

or Super-Sani Cloth).

e. All external surfaces of the anesthesia carts must be cleaned daily and after each patient use and at the beginning of each day with an EPA-registered disinfectant (e.g., Sani Cloths, Metriguard). Drawers should be emptied and cleaned when visibly soiled and on a routine basis. 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. Do not use expired supplies, check for expiration dates 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. Responsible for Content

Anesthesiology and Infection Prevention

V. 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 https://www.cambridge.org/core/journals/infection-control-and-hospital-epidemiology/article/infection-prevention-in-the-operating-room-anesthesia-work-area/66EB7214F4F80E461C6A9AC00922EFC9

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VI. 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

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

Infection Prevention Guidelines for Safe Patient 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: Tuberculosis Control Plan

Nursing Policy: Blood Product & Blood Derivative Transfusion Management

Occupational Health Services Policy: Infection Prevention and Screening Program: Occupational Health Service

Patient Care Policy: Medication Management: Use of Multi-Dose Medications and Vaccines in Acute, Operative, and Ambulatory Care Environments

Perioperative Services Policy: Anesthesia Delivery System Head

Approval Signatures

Step Description	Approver	Date
Policy Stat Administrator	Judith Strubin: Mgr Program-IP	06/2025
AVP Quality UNCMC	Erin Burgess: AVP Quality UNCMC	06/2025
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Applicability

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