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Policy Area Infection Prevention
Applicability UNC Medical Center

Cardiac Catheterization Laboratories

I. Description

Explains practices to reduce the risk of healthcare-associated infections in the Cardiac Catheterization Laboratories

II. Rationale

Cardiac catheterization and other invasive procedures performed in Cardiac Catheterization Laboratories can result in health care-associated infections. This policy addresses practices that can minimize the risk of a post procedure infection.

III. Policy

A. Definition of Areas

- The catheterization procedure rooms are divided with control areas within each room. There is a separate access to the control areas. These areas are partially partitioned from the actual site of patient care and allow for observers and essential personnel to be geographically separated, thereby diminishing risk of patient infection.
- The contiguous areas represent the adult and pediatric Cardiac Catheterization Lab areas. This includes the hallway, holding bays, staff lounge, and clean and dirty utility rooms. The lab suite also includes offices, outpatient exam and waiting areas, conference area, and storage areas.

B. Cardiac Catheterization Lab Room Policies

1. Procedure Rooms: Access will be limited to the minimum number of persons needed to safely perform the procedure and on occasions, observers. The physician in charge

of the procedure and the clinical supervisor are responsible for controlling the number of persons present by approving observers, consultants, etc. Observers are required to stand in the control room. The main door to the Cardiac Catheterization Laboratory has a posted sign which reads, "Authorized Personnel Only."

a. Cleaning and Maintenance

- i. Daily: All permanent equipment within the procedure room is to be cleaned by Environmental Services (ES) with an EPA-registered disinfectant daily. Environmental Services personnel will clean and wet mop the floors, clean countertops and sinks with an EPA-registered disinfectant, and change trash bags.
- ii. Between Cases: Equipment positioned close to the patient, and the radiographic table is to be cleaned after each patient use. When visibly soiled or wet, the floors are cleaned between each patient with an EPA-registered disinfectant. Any other surface or equipment that is obviously soiled will be cleaned prior to the next case.
- iii. Blood Spills: Blood spills should first be cleaned of visible matter using disposable absorbent material, the remaining spill wiped or mopped up then the area cleaned with an EPA-registered disinfectant. A 1:10 dilution of bleach and water may be used.
- iv. Air Control: The rooms will be maintained at positive pressure with respect to the corridors. After a catheterization procedure has started, the number of Health Care Personnel (HCP) allowed to leave or enter should be kept to an absolute minimum. This will allow the air flow system with its positive pressure room design to keep bacterial entrance to a minimum. All doors are to remain closed during procedure.
- v. Laundry: Soiled linens will be placed in a fluid-resistant linen bag.
- vi. Waste Disposal: HCP should comply with the Infection Prevention Policy: [Guidelines for Disposal of Regulated Medical Waste](#).

2. Other Spaces in the Catheterization Lab Area

- a. Hallways and contiguous spaces will be cleaned daily by Environmental Services. The floors will be washed, stripped of wax, and re-waxed as needed. Refer to the [Infection Prevention Policy: Environmental Services](#)
- b. Offices, conference rooms, and other spaces will be cleaned in the routine manner.

3. Health Care Personnel (HCP)

- a. HCP should adhere to guidelines established by the Hospitals' Occupational Health Service (OHS). Refer to the Infection Prevention Policy: [Infection Prevention and Screening Program: Occupational Health Service](#).

- b. HCP should adhere to all personnel guidelines in the Infection Prevention Policy: [Infection Prevention Guidelines for Adult and Pediatric Inpatient Care](#).
- c. Hand hygiene will be performed in accordance with the Infection Prevention Policy: [Hand Hygiene and Use of Antiseptics for Skin Preparation](#).
- d. HCP should be familiar with the principles of asepsis outlined in the Infection Prevention Policies: [High-Level Disinfection \(HLD\) - Manual Reprocessing of Reusable Semi-Critical Medical Devices](#) and [Sterilization of Reusable Patient-Care Items](#).
- e. An Infection Prevention module which includes Bloodborne Pathogens and Tuberculosis education is required annually via LMS.
- f. The [Isolation Precautions Policy](#), the [Exposure Control Plan for Bloodborne Pathogens](#) and the [Tuberculosis Control Plan](#) will be followed. These policies are located on PolicyStat via the UNCMC Intranet.
- g. Catheterization Teams: These teams consist of HCP who carry out the procedure and the cardiovascular specialists assisting them.
 - i. Dress Code: HCP entering the catheterization room will wear hospital-laundered scrub attire. Hair on the head and face (i.e., beards, large sideburns) must be fully covered to prevent shedding of hair and squamous cells. Large sideburns and ponytails must be covered or contained. 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 covering soiled with blood or other potentially infectious materials (OPIM) must be discarded and must not be taken home for laundering. Disposable masks will be used exclusively and should be changed between cases. Masks must be tightly fitted over the nose and chin. Shoe covers will be worn in those circumstances when splash/splatter of blood or body fluids is reasonably anticipated. Protective eyewear should be used by all HCP directly involved with the case. If scrubbed, a sterile gown must be worn over scrub attire. Sterile gloves will be worn by the catheterization team. For more details refer to [Attachment 1: Infection Prevention Attire in Restricted Zones in the Infection Prevention Guidelines for Perioperative Services](#)
 - ii. Radiology aprons will be worn under gowns. These will be cleaned with an EPA-registered disinfectant on a routine basis (e.g. monthly) and when visibly soiled.

- iii. Surgical Hand Antisepsis: Staff performing the catheterization must perform hand antisepsis to rid the skin of gross dirt and transient microbes, reduce resident microbes to near zero, and leave a residual activity on the skin so as to retard growth of microbes on the hands of those persons who will be functioning as a part of the sterile catheterization team. Refer to the Infection Prevention policy: [Infection Prevention Guidelines for Perioperative Services, Attachment 2 - Surgical Services/Operating Room- Surgical Hand Antisepsis.](#)
- h. Observers: All persons not included in the catheterization team description will be considered observers. These will include consultants, students and others wishing to watch procedures. Observers should be encouraged to remain in the control areas at all times. Observers will be asked to perform hand hygiene. If they remain in the control room, it is not necessary for them to wear gown, mask, gloves, or hat. If, however, the observer(s) must enter the procedure room, the appropriate attire (disposable jumpsuit or clean scrubs, hat, mask, and gown if involved in the procedure) must be worn. Radiologic protective aprons must be worn in the procedure area when necessary. Observers exhibiting obvious signs of illness will not be allowed.

C. Patient Management

1. Transportation:

- a. Outpatients are placed on stretchers with a clean sheet and the stretchers are cleaned with an EPA-registered disinfectant routinely (e.g. daily) and when visibly soiled. If the patient is on Isolation Precautions, the stretcher should be cleaned after use.

2. Patient attire:

- a. All patients entering the cardiac catheterization procedure room should be dressed in a clean hospital gown. Pediatric patients should have clean pajamas or diapers and clean t-shirts. Patient's personal dress should not accompany the patient to the catheterization procedure room.

3. Skin Preparation and Drape: Sites to be used for catheter-insertion will be identified by the physician in charge of the procedure.

- a. Hair removal should be avoided unless absolutely necessary. If warranted, electric clippers should be used on the day of the procedure. Hair removal for non-emergent cases should not be performed in the procedure room.
- b. The site will then be cleansed with an appropriate antimicrobial agent (e.g., Chloraprep, 4% chlorhexidine gluconate, 70% sterile alcohol, or povidone-

iodine) according to the manufacturer's recommendations and allowed to dry.

- c. A sterile fluid resistant drape will be used to cover the entire patient and any other hardware attached to the table.

4. Post-Procedure Site Care:

- a. The cardiac catheterization site is dressed with sterile gauze or a closure pad followed by an occlusive dressing. A pediatric patient's site is covered with an adhesive bandage. Patients are given verbal and written discharge instructions for site care and guidelines for reporting complications.

D. Equipment

1. Instrument Control

- a. No open setup is to be left unattended. Upon completion of a case, all open, unwrapped supplies that are disposable are to be discarded. For pediatric cases, the reusable instruments and procedure tray are to be cleaned and sent to Central Processing Department for reprocessing or are disposable. For adult cases, disposable procedure trays are used. For cleaning and disinfection of non-disposable items, please refer to the Infection Prevention policies: [High-Level Disinfection \(HLD\) - Manual Reprocessing of Reusable Semi-Critical Medical Devices](#) and [Sterilization of Reusable Patient-Care Items](#).
- b. While a case is in progress in the cardiac catheterization room, the instrument tables with open instruments should be considered "off limits" to un-scrubbed individuals.
- c. For pericardiocentesis, the Cath Lab has designed a closed bag system for draining off fluid from around the heart. This closed drainage system reduces the risk of exposure to bloodborne pathogens, and is to be discarded in the red bag trash.

2. Pressure Monitoring Flush System

- a. The cable of the transducer must be cleaned with an EPA-registered disinfectant (e.g., MetriGuard, SaniCloth), 70% alcohol or 1:10 bleach and water (expires in 30 days) between uses.
- b. Hand hygiene must be performed before handling the pressure monitoring set.
- c. Set-up of the system must take place in a clean area, away from sinks and other possible contaminants.

- d. Prevent retrograde back-up of blood by frequently checking for leaks and loose connections and by maintaining a continuous adequate pressure within the flush system.
3. Catheters: All of the catheters used in the cardiac catheterization rooms are disposable. These catheters are shipped from the manufacturer and are considered sterile unless the package is damaged. They are used once and discarded.
4. IV Fluids: All IV fluids and connectors will be newly opened for each case in the cardiac catheterization room. The flush used for catheters during procedures is poured into *one* sterile bowl via a steri-spout. The bag and steri-spout are then discarded.
5. Refer to the Infection Prevention policy: [The Prevention of Intravascular Catheter-Related Infections](#).
6. For multi-dose vial management, refer to the Patient Care: [Medication Management: Use of Multi-Dose Vials/Pens of Parenteral Medications and Vaccines in Acute Care and Ambulatory Care Environments](#).
7. Endoscopic Instruments
 - a. Endoscopic instruments that come in contact with mucous membranes (e.g., trans-esophageal endoscopes or TEE probes) will be processed according to the Infection Prevention policies: [High-Level Disinfection \(HLD\) - Manual Reprocessing of Reusable Semi-Critical Medical Devices, Sterilization of Reusable Patient-Care Items, Endoscope](#) and according to the device manufacturer's instructions.
 - b. TEE probes must be stored in a ventilated scope cabinet.
 - c. All staff responsible for cleaning and disinfecting endoscopic instruments must be competency tested per the Infection Prevention policies: [High-Level Disinfection \(HLD\) - Manual Reprocessing of Reusable Semi-Critical Medical Devices, Sterilization of Reusable Patient-Care Items, and Endoscope](#).

E. Implementation and Monitoring

The responsibility for both the implementation and monitoring of this policy belongs to the Medical Director of the Laboratory, the Cardiac Cath Supervisor and Clinical Supervisors. New staff will be instructed in the method of compliance with this policy.

IV. References

Catheterization and Cardiovascular Interventions 67:78-86 (2006). Core Curriculum. Infection Prevention Guidelines for the Cardiac Catheterization Laboratory: Society Guidelines Revisited.

APIC Text of Infection Control and Epidemiology: Cardiac Catheterization and Electrophysiology, Ch 50.

V. Related Policies

[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: High-Level Disinfection \(HLD\) - Manual Reprocessing of Reusable Semi-Critical Medical Device](#)

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

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

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

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

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

Attachments

[Periop Svcs - Attmt 1 - Infection Control Attire in Restricted Zones.doc](#)

[Periop Svcs - Attmt 2 - Surgical Services Operating Room - Surgical Hand Antisepsis .doc](#)

Approval Signatures

Step Description	Approver	Date
Policy Stat Administrator	Kimberly Novak-Jones: Nurse Educator	06/2021
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