



Current Status: <i>Active</i>	PolicyStat ID: 7218720
	Origination: 05/2005
	Effective: 12/2019
	Last Approved: 12/2019
	Last Revised: 12/2019
	Next Review: 12/2022
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	Policy Area: <i>Infection Prevention</i>
	Policy Tag Groups:
	Applicability: <i>UNC Medical Center</i>

Radiological Services

I. Description

Describes guidelines to minimize the risk for transmission of infection among patients and personnel in Radiology areas.

II. Rationale

Radiology provides a wide variety of diagnostic procedures for patients, including those with transmissible infections and diseases. Strict adherence to infection prevention policies and procedures can reduce the risk of disease transmission to both patients and personnel.

III. Policy

A. Personnel

1. Healthcare personnel must adhere to guidelines found in the Infection Prevention policy: [Infection Control and Screening Program: Occupational Health Services](#).
2. Healthcare personnel must adhere to the Infection Prevention policy: [Isolation Precautions](#).
3. Personnel must adhere to the Infection Prevention policy: [Tuberculosis Control Plan](#).
4. Personnel should adhere to all personnel guidelines in the Infection Prevention policy: [Infection Control Guidelines for Adult and Pediatric Inpatient Care](#).
5. Hand hygiene will be performed in accordance with the Infection Prevention policy: [Hand Hygiene and Use of Antiseptics for Skin Preparation](#).
6. Infection prevention education, including OSHA-required education for bloodborne pathogens and TB, is completed annually via Learning Made Simple (LMS).
7. Personnel must be familiar with the Infection Prevention policy: [Exposure Control Plan for Bloodborne Pathogens](#) and report all needlestick/sharps, mucous membrane, and non-intact skin exposures from blood and other potentially infectious materials to Occupational Health Services (OHS) by calling the **Needlestick Hotline at 984-974-4480**. University employees should report the exposure to University Employee Health Service at 919-966-9119.
8. When performing radiological procedures in the Operating Room (OR), healthcare personnel

must adhere to the OR dress code and all other applicable guidelines in the Infection Prevention policy: [Infection Prevention Guidelines for Perioperative Services](#).

9. There will be periodic review/rounds to assess compliance with the above referenced infection prevention policies and procedures.

B. Patients

1. Procedures should be scheduled in a manner so there is minimum patient waiting time in the department. Whenever possible, elective radiological procedures on patients with communicable diseases should be deferred until the patient is no longer infectious.
2. The unit requesting radiological services must notify the radiology department of the isolation precautions status prior to the patient's arrival.
3. Patients on Isolation Precautions should be transported to the Radiology Department only when absolutely essential. If patients on Isolation Precautions must have a radiological procedure performed in the Radiology Department, they should be scheduled at a time when activity is at a minimum to prevent contact with others, and the waiting time be kept to an absolute minimum.
4. Waiting room areas will be monitored by all staff for patients with signs or symptoms of communicable diseases (e.g., coughing, sneezing, vesicular lesions), and whenever possible, these patients will be moved to private areas. For patients with signs of respiratory illness, refer to the Infection Prevention policy: [Ambulatory Care Clinical Services](#) for details of respiratory hygiene/cough etiquette.
5. In Nuclear Medicine, when the patient is to receive radioactive-tagged blood cells, the following is to occur:
 - a. The technologist goes to the patient's room, verifies the patient's name and medical record number with the patient's nurse present, secures a wrist band from Cardinal Health to match a pre-labeled number on a blood tube, draws the blood, packages it in a container from Cardinal Health, places a new secure tab on the container, and calls Cardinal Health so they can transport the specimen to their lab.
 - b. Upon return receipt of the radioactive-tagged blood from Cardinal Health, the blood is transported to the patient's room in an appropriately shielded container placed in a biohazard bag or container displaying a biohazard symbol. Prior to the administration of the blood, the patient's name and medical record number are verified by the technologist and the patient's nurse simultaneously. The technologist who withdrew the blood must also perform the reinjection.
 - c. When the radioactive-tagged blood has been administered to the patient, the empty syringe is then transported back to the Nuclear Medicine Lab in the appropriately shielded container or bag displaying a biohazard symbol for disposal.
 - d. The interior and exterior of the appropriately shielded container must be disinfected with an EPA-registered hospital disinfectant before and after it is used to carry a blood sample.
 - e. Countertops, workspaces and equipment in the Nuclear Medicine Radiopharmacy should be cleaned with an EPA-registered hospital disinfectant daily, when visibly soiled, or when known to be contaminated following Nuclear Medicine Pharmacy Protocols.

C. Equipment

1. Equipment/products labeled for single-use will not be reused.
2. Equipment should be cleaned with an EPA registered hospital disinfectant (e.g. Sani-Cloth®, Metriguard) per manufacturer's guidelines.
3. All portable radiological equipment will be cleaned on routine basis (e.g., weekly), when visibly soiled, or after being used in an Isolation Precautions room. For patients on Enteric Precautions, cleaning should be done with bleach wipes or 1:10 bleach solution after use.
4. All radiological equipment must be cleaned after every procedure in the operating room.
5. Treatment tables are to be cleaned after each use. Tables and countertops should be cleaned at the end of the day or when visibly soiled. Radiology equipment (scanners, x-ray machine, etc.) should be cleaned weekly or when visibly soiled.
6. Lead aprons should be cleaned monthly, when visibly soiled, and after use on a patient requiring Isolation Precautions (if worn without a cover gown).
7. All portable x-ray cassettes and grid covers are to be covered with a disposable, clear plastic cassette cover to prevent contamination.
8. Suction canisters and their tubing are changed after each patient use.
9. Bottles containing ultrasound gel should not be refilled or topped off. Once empty, the container should be discarded. Refer to the Infection Prevention policy: [Infection Control Guidelines for Adult and Pediatric Inpatient Care](#).
10. Upon completion of a vaginal or rectal ultrasound, the ultrasound probe must be high-level disinfected (HLD) following the [Cleaning, Disinfection, and Sterilization of Patient Care Items](#) policy.
11. Reusable instruments/equipment going to CPD for sterilization should be cleaned or decontaminated according to the pre-cleaning/pre-treatment instructions found in Infection Prevention policy: [Cleaning, Disinfection, and Sterilization of Patient-Care Items](#)
12. HLD and sterilization activities require demonstrated competency per the [Cleaning, Disinfection, and Sterilization of Patient Care Items policy](#).

D. Invasive Radiology Procedures (e.g., Fluoroscopy, Myelogram, CT Scan, Ultrasound Image-Guided Biopsies)

Procedure teams consist of professional personnel who carry out the procedure and technologists assisting them.

1. **Dress code:** Upon entering the procedure room, personnel must wear clean apparel. Hair on the head and face 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 coverings soiled with blood or OPIM must be discarded and must not be taken home for laundering. **Surgical masks should be worn when performing a myelogram or a lumbar puncture.**

2. **Hand Hygiene:** Hand hygiene with a designated antimicrobial agent (i.e., CHG soap and water, alcohol-based hand rub) should be performed before and after caring for any patient in the procedure area regardless if gloves are worn or not. For further guidance on when to perform hand hygiene, refer to Infection Prevention policy: [Hand Hygiene and Use of Antiseptics for Skin Preparation](#).
3. **Observers:** All personnel not included above in the procedure team description will be considered observers. Observers should adhere to the same dress code and hand hygiene practices as outlined above. These will include consultants, students, and others approved to watch procedures. Movement in and out of the room should be kept at a minimum. Doors must remain closed to the procedure room when at all possible.
4. **Patients' Dress:** Patients entering the procedure room should be dressed in clean attire such as a clean hospital gown or other hospital attire (e.g. pajamas). For certain procedures or injections, the physician may allow the patient to wear their personal clothing into the procedure area.
5. **Skin preparation and drape:** Skin preparation of the procedure site will be performed using aseptic technique. Two percent CHG and alcohol (Chloraprep) is the preferred antiseptic agent for skin preparation. Tincture of iodine 1% - 2%, iodophors or 70% alcohol may be used. Sterile towels will be used to isolate the site. The patient will then be covered with the exception of prepared areas, using sterile sheets.
6. **Instrument Control:** All opened reusable instruments and supplies regardless if they are used or not during the case must be properly reprocessed before re-use. Refer to the Infection Prevention Policy: [Cleaning, Disinfection, and Sterilization of Patient-Care Items](#). While a case is in progress in the procedure room, only personnel performing the procedure may have access to the instrument tables with open instruments. Single-use devices/supplies may not be reprocessed.
7. **Equipment**
 - a. **Sterile Tray:** A sterile tray appropriate for the procedure will be set up by the technologist. A sterile drape covers the tray. A sterile field should be prepared as close as possible to the time of use.
 - b. **Transducers:** Disposable transducers are used frequently in the Radiology Department. Perform hand hygiene with an antimicrobial product before handling the transducer. During the procedure, the transducer will be covered with a sterile drape. After the procedure, the reusable cable will be wiped with alcohol or an EPA-registered hospital disinfectant (e.g., Sani-Cloth).
 - c. **IV Fluids/Contrast Media** All IV fluids and connectors will be newly opened for each case using the closed system in the special procedures rooms. The sterile contrast used during procedures may be drawn from sterile bowls on the sterile instrument table.
 - d. **Medications** Aseptic technique must be used when entering medication vials. Vials should be handled with clean hands or clean gloves. Cleanse the rubber diaphragm of the medication vial with sterile alcohol before withdrawing contents of vial. Use a new sterile syringe with a new needle for each access. Single use medication vials must be discarded

immediately after initial use. For multi-dose vials, refer to the Medication Management Policy: [Medication Management: Use of Multi-Dose Vials/Pens of Injectable Medications and Vaccines in Acute Care and Ambulatory Care Environments](#).

8. Disposable Supplies

- a. All needles and syringes used in the procedure areas will be discarded in the designated needle disposal container. When 3/4 full, this container will be closed and placed in a red biohazard regulated waste bag for incineration. Engineering controls to minimize the risk of sharps injury will be utilized in accordance with the Infection Prevention policy: [Exposure Control Plan for Bloodborne Pathogens](#).
- b. Any disposable supplies used in the procedure should be disposed of in the white biohazard regular trash bags (i.e., catheters, plastic tubing, empty IV bags). Gloves should be worn during this procedure.

9. **Blood and Blood Products** - Healthcare personnel must adhere to the Infection Prevention policy: [Guidelines for Disposal of Regulated Medical Waste](#).

E. Isolation Precautions Reminders

1. For all patients on Isolation Precautions, cassettes, grids and positioning equipment should be placed in plastic bags before placed in contact with the patient and cleaned with an EPA-registered hospital disinfectant after use.
2. **For Portable Procedures**
 1. Upon completion of the procedure, the cover should be removed before placing the equipment into the portable machine. This can be done by opening the compartment, sliding the cassette out of the bag and into the compartment, and then closing it with a gloved hand, discard the plastic cover while inside the patient's room.
 2. Remove and discard in the regular trash in the patient's room all personal protective equipment including the cover used for the procedure. Perform hand hygiene before leaving the patient's room.
 3. After use in the room of a patient on isolation precautions, the machine is moved into the hallway and cleaned. The parts of the portable x-ray machine that have been touched by the tech or patient or may have come into contact with contaminated items in the room will be cleaned. Using a new pair of gloves, wipe down the portable machine, taking care to include the control pad, hand held device, and push bar, as well as the compartment handle. After removal of gloves, immediately perform hand hygiene.
 4. Portable radiography equipment must be cleaned before entering the room of a patient on Protective Precautions.

F. Environmental Cleaning

1. **Cleaning and Maintenance:** Cleaning is performed with an EPA-registered hospital disinfectant. The radiographic table and other equipment touched by the patient is cleaned between cases, countertops and workspaces are cleaned daily, and other equipment within the procedure room is cleaned at least weekly. ES is responsible for changing trash and linen bags at the end of the day

and more often if necessary. Sinks and countertops are cleaned by ES daily and the floor cleaned and mopped at the end of the day. Blood spills should be promptly cleaned.

2. **Air Control:** The procedure rooms will be maintained at positive pressure with respect to the corridors. All doors will be kept closed during procedures, and personnel traffic limited to those who work in the area.

G. Implementation and Monitoring

The responsibility for both the implementation and monitoring of this policy belongs to the Medical Director, the Section Chiefs, as well as the Administrative Director of Radiological Services. New staff will be instructed in the method of compliance to this policy. The technical supervisor, Patient Services Managers, and chief technologists serve with the Director as monitors.

IV. Related Policies

[Infection Prevention Policy: Ambulatory Care Clinical Services](#)

[Infection Prevention Policy: Cleaning, Disinfection, and Sterilization of Patient-Care Items](#)

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

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

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

[Infection Prevention Policy: Isolation Precautions](#)

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

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

Attachments:

Approval Signatures

Step Description	Approver	Date
Policy Stat Administrator	Patricia Ness: Clin Nurse Education Spec	12/2019
	Thomas Ivester: CMO/VP Medical Affairs	12/2019
	Emily Vavalle: Director, Epidemiology	11/2019
	Sherie Goldbach: Infection Prevention Registrar	11/2019

Applicability

UNC Medical Center

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