

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 1 of 44

Radiology Department
Nuclear Medicine

I. GENERAL GUIDELINES

- A. Standard Precautions are used for all patients.
- B. A thorough hand washing with chlorhexidine for 6 minutes is done before any invasive procedure. For routine procedures hand washing for 15-20 seconds with soap and water before and after caring for the patient is performed.
- C. Hospital approved waterless alcohol hand sanitizer is available and is used when hands are not visibly soiled. Refer to IC Policy 2.0: Hand Hygiene.
- D. Gloves are worn when handling any patient body fluids. Gloves are removed immediately after use and hands are washed thoroughly. Gloves are worn when it is anticipated that personnel may have contact with blood and body fluids, other potentially infectious materials, mucus membranes and non-intact skin. Gloves are worn when handling items contaminated with body fluids.
- E. Gloves are worn when performing vascular access procedures.
- F. Goggles and splash-proof gowns are available if there is risk of splashing of body fluids.
- G. The Occupational Health Guidelines are followed. The Occupational Health nurse is notified if there are questions about these guidelines.
- H. The Infection Control Bit, which includes the Bloodborne Pathogens Control Plan, TB Control Plan, Guidelines and Isolation Manual, is followed.
- I. The Infection Control guidelines for the Clinical Laboratory are utilized for all lab procedures.

II. PATIENT CARE PROCEDURES

- A. When IVs are started the skin is prepped with Chlorprep Sepp or 70% alcohol using at least two pads. (See IC Policy 22.0: Skin Preparation for Invasive Procedures).
- B. Suction machines are changed between patients.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 2 of 44

C. General Measures in Giving Radioactive Material

- 1) Medications and solutions will be drawn into syringes immediately before use. Syringes used for injections are immediately discarded after use in the hospital-approved sharps container.
- 2) The Hospital Guidelines for Preparation of IV Medications is followed.
- 3) Documentation includes the name of the person giving the dose and the exact time.
- 4) All procedures are documented; documentation includes, at minimum, the date, name and amount of radiopharmaceutical, and route of administration. The name or identifying information of the person, administering the dose and the exact time of administration is recorded on the patient's dose record.
- 5) Single dose heparin vials are used.

D. Labeling of Blood

- 1) All blood removed from the patient is immediately labeled with name and pharmaceutical.
- 2) When specimens for re-injection are removed from the department they are labeled biohazard and with the patient's name and hospital number.
- 3) Prior to re-injection of labeled blood, two people verify the patient's identity matches the label on the blood specimen.
- 4) Specimens returning to the department with different labels than the original are not used.
- 5) Alcohol 70% (x2 pads) is used to prep IV tubing before injection of labeled blood.

E. Cardiac Stress Test

- 1) IV Preps
 - (a) Refer to IC Policy 22.0: Skin Preparations for Invasive Procedures.
 - (b) Hub of IV is prepped with alcohol x2 before injection of isotope.

III. EQUIPMENT

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 3 of 44

- A. The air delivery system tubing, mask, bag, filter (.8- 1.0 micron) are changed between each patient usage. Mask, tubing and filters are disposable and discarded after each patient use.
- B. All blood and blood products are placed in the contaminated waste container. Needles and syringes are considered contaminated and are placed in the sharps container for ultimate incineration. Needles are not recapped after use.
- C. Lead carriers or "pigs" used to transport unit doses of radiopharmaceuticals will have a disposable insert placed inside the carrier. This disposable insert will be replaced after each use. If patient contact to a syringe shield occurs, it will be cleaned with 1:10 solution of bleach prior to reusing.
- D. The guidelines for contaminated waste and laundry are followed. Refer to IC Policy 6.0: Waste Policy: Contaminated/Regular and the Infection Control B.I.T.
- E. Any large equipment such as the gamma camera that is in direct contact with the patient will be disinfected with the hospital-approved disinfectant before and after patient use. If a disinfectant cannot be used, the portion of the equipment that encounters the patient is wrapped with plastic wrap and changed between each patient use.
- F. The Infection Control Bit is referred to for specific instructions when dealing with the patient who requires specific isolation precautions. Nursing Service should notify the department when the patient is in isolation. If there are any questions, the Infection Control Department is contacted.
- G. Patients with a diagnosis of TB or R/O TB are placed in a negative pressure room These patients are made priority. If a negative pressure room is not available and the patient requires respiratory isolation, the patient wears a mask to the department and while in the procedure room. The mask is changed when it becomes moist. Rooms where respiratory isolation patients are seen are left vacant for the appropriate time period. Refer to the TB Control Plan.
- H. Medications
 - 1) Medication vials are single use except ones that are radioactive. Radioactive vials are handled very carefully assuring no contamination occurs. All vials are cleaned with two alcohol swabs before entering and a new syringe and needle is used for each entry. These vials are dated and initialed. IV medications are mixed in a designated clean area, aseptically, and according to manufacturers recommendations.
 - 2) Lead transport carriers, syringe shields, and forceps are cleaned weekly with a housekeeping disinfectant.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 4 of 44

3) Recapping of needles for technetium is done very carefully. Personnel may recap a needle by one-handed technique or by using recapping devices.

I. Cleaning done by Environmental Service Personnel

- 1) Cleans all horizontal surfaces daily.
- 2) Cleans all patient care equipment except nuclear medicine equipment.
- 3) Mops all floors daily and when soiled.
- 4) Empty trash daily.
- 5) Dusting is done weekly and more often if needed.

J. Using appropriate PPE, Nuclear Medicine Personnel clean all Nuclear Medicine equipment weekly and when soiled.

K. The Infection Control Practitioner is notified if there are questions about infection control standards.

Infection Control Guidelines

Department of Radiology
Magnetic Resonance Imaging (MRI)

OBJECTIVE: To reduce the risk of healthcare-associated infections for both patients and personnel.

I. **HAND WASHING** (Refer to IC Policy 2.0: Hand Hygiene)

Routine Patient Care: Hand washing for 15-20 seconds with soap and water before and after contact with any patient is recommended.

Hospital approved waterless alcohol sanitizer hand wash is available and is used when hands are not visibly soiled

Antiseptic soaps are used if patient has a resistant microbe or if hands are

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 5 of 44

heavily contaminated with blood or body fluids.

II. SKIN PREPARATION

Skin is prepped with (70%) alcohol x 2 swabs before IV injection. Allow area to dry before accessing port.

III. PERSONAL PROTECTIVE EQUIPMENT

PPE is available and should be worn if exposure to blood and body fluids is anticipated. Clean gloves are worn when performing a vascular access procedure. Gloves are worn when it is anticipated that personnel may have contact with blood, other potentially infectious materials, mucous membrane and non-intact skin. Gloves are worn when handling contaminated items.

Standard Precautions are used for all patients.

IV. DISINFECTION OF THE ENVIRONMENT

- A. Equipment is cleaned with hospital approved disinfectant by MRI personnel.
 1. **BioMed IC-2A ventilator (MRI / transport ventilator)**
 - a. All items are disposable and are discarded.
 - b. Surfaces are wiped with an approved housekeeping disinfectant.
 - c. Manufacturers recommendations are followed for setup and performance check out.
- B. Sheets are used to cover the mattress and are changed between each patient use. The mattress is cleaned with the housekeeping disinfectant if there is any obvious soilage. Otherwise mattress is cleaned at the end of the day. All mattresses must be intact. If cracks or tears are noted, mattresses must be repaired immediately or discarded.
- C. The floors and all horizontal surfaces are cleaned daily by environmental services, more often if soiled.
- D. Any spill or body fluids are cleaned by Environmental Services personnel unless in high traffic areas; in which case spills are cleaned by Radiology personnel.
- E. Any spill or body fluids that leak under the pad into the cradle of the MRI couch will be cleaned by the equipment's Field Service Engineer who will wear appropriate PPE.

V. ISOLATION

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 6 of 44

- A. Standard precautions are followed by all personnel. Personal protective equipment, i.e., barrier gowns, gloves, masks and goggles are available and should be worn when there is a possibility of splashing of any patient’s body fluids. (refer to Bloodborne Pathogen Exposure Control Plan in Infection Control BIT)

- B. The isolation manual is referred to when patients have a specific infectious disease. When a patient is suspected of having an infectious process, the exam is prioritized and patient returned to nursing unit as quickly as possible. If a patient requires respiratory isolation, the patient wears a mask to the department and while in the procedure room. The mask is changed when it becomes moist. The Infection Control practitioner is consulted if questions. The mask is changed when it becomes moist. The room is left vacant for appropriate time (Refer to the TB Control Plan in the Infection Control BIT.)

- C. The Infection Control BIT contains Bloodborne Pathogens, Isolation and TB Exposure Control Plans and is accessible on line at http://www.medcom.lsuhscc.edu/cfdocs/policies/IC_Revisions.cfm

VI. DISPOSAL OF WASTE

All contaminated waste is placed in a contaminated trash box to be incinerated. (See IC Policy 6.0: Waste Policy Contaminated/Regular).

Infection Control Guidelines

Department of Radiology
CT Section

Purpose: To provide optimum patient care and minimize the risk of healthcare-associated infections during radiological procedures with adherence to established procedures and guidelines in the handling of equipment and in the performance of procedure.

I. ASSESSMENT OF PATIENTS

- A. Patients are assessed in waiting rooms and during procedure for any infectious process.

- B. If a patient or visitor is coughing, he is given tissue and/or a submicron mask. If excessive coughing, patient is placed in a single room as soon as possible.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 7 of 44

C. An effort is made to keep body fluids confined and contained.

II. **HAND WASHING**

A. Refer to IC Policy 2.0: Hand Hygiene.

B. Routine Patient Care: A thorough 15-20 second hand washing with soap and water before and after contact with any patient.

C. Hospital approved waterless alcohol hand sanitizer is available and is used when hands are not visibly soiled.

III. **SKIN PREPARATION**

A. Refer to IC Policy 22.0, Skin Preparation for Invasive Procedures.

B. Chlorprep sepps or alcohol swabs x 2 are used for IV punctures.

IV. **GENERAL INFECTION CONTROL GUIDELINES**

A. Standard Precautions are used with all patients.

B. Strict adherence to hand hygiene is enforced. Refer to IC Policy 2.0, Hand Hygiene.

C. Personnel maintain good personal hygiene while working with patients such as wearing of clean uniforms, coughing into a disposable tissue, and not performing direct patient care when hands have cuts or draining areas.

D. Clean gloves are worn when it is anticipated that personnel may have contact with blood and body fluids, other potentially infectious materials (OPIM), mucous membranes and non-intact skin. Clean gloves are worn when performing vascular-access procedures or when handling contaminated items.

E. Routinely, the cleaning up of spills is done by Environmental Services. However, when spills occur in high-traffic areas, Radiology personnel should clean up spills immediately.

F. Clean gloves are worn for cleaning up spills of body fluids. Strict hand washing is also observed after removing the gloves.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 8 of 44

- G. Splash-proof disposable gowns are available and worn if exposure blood or OPIM is reasonably anticipated.
- H. Mask and goggles may be used if there is possibility of heavy splashing.
- I. Sinks are not used for discarding any patient secretions or excretions; a designated toilet is used and the material is flushed down the drain. Staff must wear appropriate PPE when emptying containers.
- J. Wall suction is maintained with a sterile suction catheter to ensure that suction is readily available. The suction canister, tubing, and catheter are changed between each patient use. They are placed in a contaminated box for ultimate incineration.
- K. Resuscitation carts are readily available and easily accessible in adult and pediatric sizes.
- L. All linen is stored in a clean, designated area. It must be stored in an enclosed cabinet or closet. Linen is changed between each patient procedure. The table is cleaned thoroughly with hospital-approved disinfectant if contaminated with blood or OPIM.
- M. All sponges for the headrest will be covered with plastic wrap and plastic wrap will be changed between each patient.
- N. Sterile supplies are rotated so that they do not become outdated. Expiration dates are also checked before use. Chemical indicators in each pack are checked before use. Integrity of packaging is inspected prior to use.
- O. Used needles and syringes are handled cautiously and are not recapped. The used needle and syringe are placed in a sharp container for ultimate disposal.
- P. Sterile and clean supplies are stored separately but can be stored in the same room. They are stored no less than 12 inches from the floor and 18 inches from the sprinkler. Only dirty items are stored in the dirty utility room. (See IC 23.0: Storage of Clean and Sterile Supplies)
- Q. Special considerations for prevention of infection:
 - 1. IV catheters in place are not disturbed.
 - 2. IV's are not connected until immediately before use.
 - 3. IV solutions are not premixed.
 - 4. When handling patients with indwelling urinary catheters, take care not to elevate the urine bag above the bladder to reduce the incidence of reflux back into the bladder. Bags are attached to the side of the bed or a bag holder is used.
 - 5. Single use vials of medication are used once and then discarded.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 9 of 44

V. ISOLATION PROCEDURES

1. Standard precautions are used for all patients.
2. If the procedure is done in the patient's room, personnel wear the attire recommended per isolation sign and/or as directed by the nursing service.
3. When a patient who is in isolation is brought to the Radiology department, personnel refer to the Infection Control B.I.T. located in the department or available online. (Nursing Service must notify the department when the patient is in isolation.)
4. If a patient requires respiratory isolation, the patient wears a mask to the department and while in the procedure room. The mask is changed when it becomes moist. The Infection Control practitioner is consulted if questions.
5. When a patient is suspected of having an infectious process, the exam is prioritized and patient returned to nursing unit as quickly as possible.
6. Room where respiratory isolation patients are seen is left vacant for 30 minutes unless Infection Control is consulted for a shorter time.
7. The Infection Control BIT contains Bloodborne Pathogens, Isolation and TB Exposure Control Plans and is accessible on line at http://www.medcom.lsuhscc.edu/cfdocs/policies/IC_Revisions.cfm.

VI. PROCESSING OF EQUIPMENT

- A. Disposable items are never reused.
- B. Reusable Items: Reusable items are sent to Central Medical Supply for cleaning and processing after each use. These items are not rinsed in this department.
- C. Refer to IC Policy 7.1: Reuse of Disposable Items and Equipment.

VII. CLEANING OF ROOMS USED FOR INVASIVE PROCEDURES

- A. Floors are to be mopped daily and when spillage occurs.
- B. All horizontal surfaces are cleaned daily.
- C. Lights are to be cleaned daily.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 10 of 44

- D. Tables are cleaned after each procedure with the hospital-approved disinfectants by Radiology personnel.

VIII SPECIFIC PROCEDURES

Cat Scan - Routine examinations

- * Hand washing - Routine hand washing
- * No special attire of physician and assistant
- * Gloves

CT GUIDED BIOPSY, ASPIRATION AND ABSCESS DRAINAGE

- * A surgical hand scrub is performed prior to performing any invasive procedures.

Refer to IC 2.0 Hand Hygiene

- * Attire - Sterile gloves
- * Skin preparation for the procedure –Skin Preparation For Invasive Procedures

in IC Policy 22.0.

IX ROUTINE CLEANING OF THE RADIOLOGY DEPARTMENT

- A. Daily routine cleaning of rooms with the hospital-approved disinfectant is the responsibility of Environmental Services.
- B. Radiographic tables and other stationary equipment is to be cleaned by Radiology personnel with the hospital-approved disinfectant between patients if there is spillage.
- C. Overhead cables, swing arms, control boards, panels, light fixtures, bulbs, and all other electrical equipment are dusted daily and PRN by Environmental Services.
- D. Ventilator and fan-outlet parts are to be cleaned during preventative maintenance by manufacturer.
- E. Shelves and other storage areas are cleaned monthly by Radiology personnel.
- F. Floors and all horizontal surfaces are to be cleaned with the hospital-approved disinfectant daily or more often as needed by Environmental Services personnel.
- G. Lead aprons are cleaned with soap and water on a weekly basis when soiled by Radiology personnel.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 11 of 44

H. Any spills of body fluids are cleaned by Environmental Services personnel unless in high traffic area; in which spills are cleaned by Radiology personnel.

X DISPOSAL OF WASTE

All contaminated waste is placed in a contaminated trash box to be incinerated. (See IC Policy 6.0: Waste Policy: Contaminated /Regular)

XI. No food or drink except in designated area.

Written: 1998

Revised: 99, 00, 01, 2/03, 4/05, 4/07, 4/09, 09/11 Adapted from Infection Control Guidelines for Intervention and Diagnostic Radiology

Infection Control Guidelines

Department of Radiology
General Radiology Section

Purpose: To provide optimum patient care and minimize the risk of healthcare-associated infections within the Department of Radiology with adherence to established procedures and guidelines in handling of equipment and in the performance of procedures will be reduced.

Policy:

ASSESSMENT OF PATIENTS

1. Standard Precautions are used for all patients.
2. Patients are assessed in waiting rooms and during procedures for any infectious process.
3. If a patient or visitor is coughing, he is given tissue and/or surgical mask. If excessive coughing, the patient is placed in a single room as soon as possible.
4. Every effort is made to keep body fluids confined and contained.

HAND WASHING

1. For complete procedure, refer to the hand washing procedure in IC 2.0 Hand Hygiene.
2. Routine Patient Care: A through hand washing with soap and water for at least 15 seconds is done before and after contact with any patient.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 12 of 44

3. Hospital approved alcohol-based hand sanitizer is available and may be used when hands are not visibly soiled.

PATIENT SKIN PREPARATION RECOMMENDATIONS

1. The skin is cleaned with soap and water if grossly soiled. Chlorhexidine gluconate 4% solution is used before invasive procedures. Chloraprep Sepp or alcohol swabs are used for IV punctures. For complete instructions refer to IC Policy 22.0 Skin Preparation for Invasive Procedures.

GENERAL INFECTION CONTROL GUIDELINES

1. Occupational Health Guidelines are followed. All new employees are initially evaluated by OHC. Annual evaluations are required thereafter. All employees are encouraged to keep immunizations current. Supervisors should promptly schedule all employees with OHC for evaluation, immunization, and follow-up as appropriate.
2. Personnel maintain good personal hygiene while working with patients such as wearing clean uniforms, coughing into disposable tissue, and not performing direct patient care when hands have cuts or draining areas.
3. Clean gloves are worn when it is anticipated that personnel may have contact with blood and other potentially infectious material (OPIM), mucus membranes and non-intact skin. Gloves are worn when performing vascular-access procedures and when handling contaminated items.
4. Routinely, the cleaning up of spills is done by Environmental Services. However, when spills occur in high-traffic areas, Radiology personnel should clean up spills immediately.
5. Clean gloves are worn for cleaning-up spills of body fluids. Strict hand washing is also performed after removing the gloves.
6. Splash-proof disposable gowns are available and worn if exposure to blood or OPIM is reasonably anticipated.
7. Mask and goggles may be used if there is possibility of heavy splashing.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 13 of 44

8. Sinks are not used for discarding any patient secretions or excretions; a designated toilet is used and the material is flushed down the drain. Staff must wear appropriate PPE when emptying containers.
9. A suction machine is maintained with a sterile suction catheter to ensure that suction is readily available. The suction canister, tubing, and catheter are changed between each patient use. They are placed in a contaminated box for ultimate incineration.
10. The emergency cart contains an ambu bag or other breathing bag and three clean masks, (small, medium, large), which are covered with plastic dust covers, as well as assorted sizes of airways, clean and ready for use at all times. They are sent to Central Medical Supply for processing after each use.
11. Linen is stored in a clean, designated area. Linen is changed between each patient procedure.

The table is cleaned thoroughly with disinfectant if contaminated with blood or OPIM.

12. Sterile supplies are checked and rotated to ensure package integrity. Chemical indicators in each pack as well as the packaging integrity is checked before use.
13. In departments such as O.R., OB, and NICU requiring special attire, the person performing these procedures must be appropriately attired and follow the Infection Control guidelines for that area.
14. Used needles and syringes are handled cautiously and not recapped. The used needle and syringe is placed in a sharps container for ultimate disposal.
15. Sterile and clean supplies are stored separately but can be stored in the same room. They are stored no less than 12 inches from the floor and 18 inches from a sprinkler. Only dirty items are stored in the dirty utility room. (See IC 23.0: Storage of Clean and Soiled Supplies)
16. Special considerations for prevention of infection:
 - a. IV catheters in place are not disturbed.
 - b. IV's are not connected until immediately before use.
 - c. IV solutions are not premixed.
 - d. When handling patients with indwelling urinary catheters, care is taken not to elevate the urine bag above the bladder to reduce the incidence of reflux back into the bladder. Bags are attached to the side of the bed or a bag holder is used.
 - e. Single vials of medication are used once and then discarded.
17. The *Infection Control Bit*, which includes the Bloodborne Pathogens Control Plan, TB Control Plan, and Isolation Guidelines are followed. The BIT can also be accessed on line at: http://www.medcom.lsuhscc.edu/cfdocs/policies/IC_Revisions.cfm

ISOLATION PROCEDURES

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 14 of 44

1. Standard precautions are used for all patients. When a patient who is in isolation is brought to the Radiology Department, personnel refer to the Infection Control BIT located in the department or available online. The transferring department must notify the receiving department when the patient requires isolation. Patients who are in isolation should have portable radiologic procedures performed at the bedside unless testing cannot be done portable.
2. If the patient requires respiratory isolation, the patient is immediately placed in procedure room D2-15A (Room 7). The exam is prioritized and the patient is returned to the nursing unit as quickly as possible. The healthcare worker wears a mask whenever in the room. The patient wears a mask in transport and during the entire visit. The Infection Control nurse is consulted as needed.
3. If the procedure is to be done in the patient's room, personnel wear the attire recommended on the isolation signage or as directed by the nursing service.
4. If the patient is coughing and is to have a chest x-ray it should be done in room D2-15A (Room 7). If other procedures are ordered, it may be necessary for the procedure to be done in other rooms.
5. Rooms where respiratory isolation patient are seen are left vacant for the appropriate time. (Refer to TB Exposure Control Plan)

PROCESSING OF EQUIPMENT

1. Disposable items are never reused.
2. Reusable items: Reusable items are sent to Central Medical Supply for cleaning and processing after each use. These items are not rinsed in this department. Refer to IC Policy 7.1: Reuse of Disposable Items and Equipment.

CLEANING OF ROOMS USED FOR INVASIVE PROCEDURES

1. Rooms are to be thoroughly cleaned by Environmental Services daily. Floors are to be mopped daily and when spillage occurs.
2. Radiology personnel clean tables after each procedure with the hospital approved disinfectant.

SPECIFIC PROCEDURES

1. See IC Policy 22.0, Skin Preparation for Invasive Procedures.
2. See Hand Hygiene Policy, IC 2.0.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 15 of 44

3. Strict adherence to aseptic technique must be observed for invasive procedures performed in the Radiology Department.
4. Personal protective equipment is available and worn if there is a possibility of splashing.
5. Procedure Group 1
 - a. Myelography
 - Handwashing with an antiseptic for 4-6 min.
 - Attire – Sterile gloves
 - b. ERCP (performed in Operating Room)
 - Thorough hand washing
 - GI nurse accompanies patient and GI Physician does the procedure.
 - Scope processed in Endoscopic Lab.

6. Procedures Group 2
 - a. Arthrography
 - Hand washing with an antiseptic for 4-6 min.
 - Attire of Physician and Assistant – Sterile gloves.

7. Procedures Group 3
 - a. Intravenous Pyleography
 - b. Venography
 - Handwashing –routine handwashing
 - No special attire for physician and assistant
 - Gloves

8. Procedures Group 4
 - a. Fistulography and T-Tube cholangiography
 - Hand washing with antiseptic for 4-6 min.
 - Attire – sterile gloves
 - Skin preparation for the procedure – Chlorhexidine prep
 - b. Hysterosalpingography – Done by Obstetrics Physicians, Upper GI, and Esophogram procedures
 - Hand washing- wash hands thoroughly with antiseptic before each procedure
 - No special attire
 - Skin preparation – No special skin preparation

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 16 of 44

INFECTION CONTROL TECHNIQUES IN BEDSIDE RADIOGRAPHY

1. Soiled equipment is not taken into patient's room. Care is taken that x-ray machines are kept clean daily by Radiology personnel using the hospital approved disinfectant. Equipment that is transported into patient isolation rooms requires cleaning and disinfection (all surfaces except wheels) before being transported into another patient room or returned to the Radiology Department.
2. CR plates/detectors and any parts of the equipment that touch a patient must be wiped with a clean wet cloth with the hospital approved disinfectant between each patient use.
3. When a mobile x-ray machine is taken to a patient in isolation, the technologist wears proper attire, as outlined on the Isolation Precaution Sign attached to the door, or as otherwise directed by the nursing service personnel.
 - a. When two technologists are entering the isolation room one is designated to operate the equipment only (clean person); the other is designated to position the patient and to manipulate the patient's environment (contaminated person), including the door and any other items coming in contact with the patient or his environment.

ROUTINE CLEANING OF THE RADIOLOGY DEPARTMENT

1. Daily routine cleaning of rooms with the housekeeping disinfectant is the responsibility of Environmental Services.
2. Radiographic tables and other stationary equipment is to be cleaned by Radiology personnel with the hospital approved disinfectant at least daily and between patients if there is spillage.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 17 of 44

3. Machines, chin rest, and CR plates/detectors are routinely cleaned when necessary by radiology personnel. Radiology equipment that comes in contact with intact patient skin requires low level cleaning and disinfection after each examination.
4. Tables and other equipment used for special procedures are to be thoroughly cleaned with housekeeping disinfectant immediately after use by Radiology personnel.
5. Overhead cables, tube support columns, control boards/panels and all other electrical equipment are dusted daily and PRN by Radiology personnel.
6. Ventilators and fan-outlet parts are to be cleaned during preventive maintenance by appropriate service engineers.
7. Shelves and other storage areas are cleaned monthly.
8. Floors are cleaned with the housekeeping disinfectant daily or more often as needed by Environmental Services personnel.
9. Lead aprons are cleaned with soap and water on a weekly basis and when soiled by radiology personnel.
10. Any spills of body fluids are cleaned by Environmental Services personnel unless spill is in a traffic area; in which case, the spill is cleaned immediately by Radiology personnel.

DISPOSAL OF WASTE

1. All contaminated waste is placed in a contaminated trash box to be incinerated. (Refer to IC Policy 6.0: Waste Policy: Contaminated/Regular.)

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 18 of 44

Historical note: Policy developed in conjunction with Infection Control Department. Original Policy maintained in Infection Control until revision of April 2005.

Association for Professionals in Infection Control and Epidemiology, APIC Text of Infection Control and Epidemiology, 3rd Edition, Chapter 64: Imaging Services and Radiation Oncology (page 1-6), 2009.

Infection Control Guidelines

Department of Radiology
 Ultrasound

A. I. PERSONNEL

A. Dress Code

1. All personnel required to enter a controlled area outside the department will change into the designated uniform, i.e., Surgery, NICU, etc
2. If an employee contaminates their uniform during the workday, they will change into another uniform and place contaminated clothing in a plastic bag and send to the Laundry. At no time will an employee wear contaminated clothing off the premises. Refer to IC Policy 5.0: Care of Personal Clothing Soiled with a Patient's Blood/Body Fluids.
3. All personnel shall practice good personal hygiene. Refer to IC Policy 2.0: Hand Hygiene.

B. Personal Precautions

1. Occupational Health Guidelines are followed.
2. All new employees are initially evaluated by the Occupational Health Clinic. Annual evaluations are required thereafter. All employees are urged to keep immunizations current. Supervisors should promptly schedule all employees with OHC for evaluation; immunization or follow-up as appropriate.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 19 of 44

3. Employees should not come to work if they are known or suspected of having a communicable disease. Any employee with a skin infection, weeping lesions or potentially transmissible infection must report to their supervisor who will refer to OHC as appropriate.
4. Standard precautions must be observed at all time.

II. PATIENT ASSESSMENT

- A. Patients are assessed when they arrive in the Ultrasound Department for possible infection. If the assessment indicates an infectious process, the patient is placed in a private room and seen immediately.

III. ENVIRONMENT

A. Department Work Areas

1. Examination rooms are to be kept clean and neat at all times with care taken to prepare the room for each patient according to the nature of the examination to be performed.
2. No food or drink will be allowed in the patient treatment or examination areas.
3. Food and drinks will be kept covered and will be stored in the employee refrigerators until consumption.

B. Linen

1. All dirty linen will be stored in the linen container within the workroom. Contaminated linen will be placed in a plastic bag before being placed in the linen container. At the end of the day all linen will be placed in the linen chute to the laundry.
2. All clean linen must be kept covered or stored in an enclosed cabinet or closet. Refer to Infection Control B.I.T. and Nursing Policy L-15 Linen Use/Bed Change Policy.

B. IV. HANDWASHING-Refer to IC 2.0 Hand Hygiene

A. Routine Patient Care

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 20 of 44

1. For routine patient contact, hand washing for 15-20 seconds with soap and water before and after contact with any patient. Alcohol-based hand wash is available and may be used when hands are not visibly soiled.

II.B. Invasive Procedures

1. A surgical hand scrub is performed before all invasive procedures.
2. Hands are scrubbed using Hibiclens (chlorhexidine gluconate 4%) surgical scrub for 6 minutes or Iodophor for 5 minutes.

A. V. PATIENT SKIN PREPARATION

A. Procedure for Invasive Procedures

Refer to IC 22.0 Skin Preparation for Invasive Procedures

http://www.sh.lsuhs.edu/policies/policy_manuals_via_ms_word/infection/IC%2022.0.pdf

III. VI. PROCESSING OF EQUIPMENT

A. Disposable

Disposables are used once then discarded, never reused. Refer to IC Policy 7.1: Reuse of Disposable Items and Equipment.

B. Reusable Items

1. Reusable items, i.e., gel containers are sent to Central Medical Supply for cleaning and processing before refilling; they are not to be refilled before being sterilized. These items are never cleaned in the ultrasound department.
2. When filling gel containers, gloves are worn.

IV.C. Transducers

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 21 of 44

1. The transducer head is cleaned thoroughly with hospital approved disinfectant (T-Spray) between patients.

2. Open Wounds: Where possible, avoid placing the transducer in an open wound. If this is unavoidable, cover the transducer with a disposable latex-free probe cover. After completion of scan, clean thoroughly with hospital approved disinfectant (T-Spray).

3. Endocavity transducers

4. A. Endovaginal Probe

The transducer is placed in a latex-free probe cover before use. Ultrasound gel is placed inside the probe cover to maximize conduction. The integrity of the cover is assured before use in high-risk areas and on non-intact skin. Probes are soaked in Glutaraldehyde (Cidex) for 45 minutes.

B. Processing with Glutaraldehyde (Cidex 2.4%)



SUBJECT: Infection Control

Written: 11/76
Reviewed:10/16

APPROVED BY: **Director of Radiology**

Page 22 of 44

1. Personal protective equipment (gloves, gown, eyewear, mask) is worn during the decontamination phase and when working with glutaraldehyde.
2. Glutaraldehyde is kept in a controlled area. Containers are kept covered to prevent the fumes of glutaraldehyde from disseminating into the air. The room should have at least 10 air exchanges.
3. The door to the processing room is kept closed at all times.
4. Used instruments are cleaned thoroughly with enzyme cleaner, rinsed with sterile water, and dried with a clean cloth. Hands are washed between the decontamination stage and the disinfectant stage.
5. The instrument is soaked for 45 minutes in Glutaraldehyde (2.4%)
6. Glutaraldehyde is thoroughly rinsed using sterile water from the probe and the probe is dried using a clean towel before use.
7. Glutaraldehyde is tested daily before placement of instruments using test strips with results recorded in a logbook.
8. Glutaraldehyde is monitored before each use using test strips.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 23 of 44

9. The dry instrument is stored in a clean dry area.

10. Glutaraldehyde is discarded in the appropriate container every 14 days or sooner if solution becomes diluted or soiled. Safety Office picks up used Glutaraldehyde for disposal.

11. Discard date is placed on disinfectant containers upon opening for initial use.

12. Safety Office is notified immediately and cleans all spills.

Portable Ultrasound Examinations

Transducers are covered with a non-latex probe cover for each patient in the NICU. The integrity of the cover is assured before use. Individual sterile gel packages are used on each patient. After scan, the transducer is wiped clean and non-latex probe cover is replaced for subsequent examinations. After returning to the department, the transducer is cleaned with the T-Spray.

VII. SPECIFIC INFECTION CONTROL PROCEDURES FOR ULTRASOUND

Invasive Procedures

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 24 of 44

A. Paracentesis, Thoroцентesis, Abscess drainage and Biopsies (Liver, Thyroid and Kidney)

1. A surgical scrub with an antiseptic is done.
2. Attire consists of appropriate PPE. ex.: sterile gloves, gowns, mask
3. Large sterile drapes are used for all procedures.
4. Sterile gel is used throughout the procedures and care is taken that only sterile personnel handle the transducer.
5. After the procedure the transducer is wiped with the T-Spray.

VIII. ISOLATION PROCEDURES

All isolation procedures are done portable.

A. Infection Control techniques for bedside ultrasound

1. Soiled equipment is not taken into the patient room. Care is taken that ultrasound machines are kept clean daily by ultrasound personnel using a housekeeping disinfectant.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 25 of 44

2. Transducers and any parts of the equipment that touch a patient must be wiped with a clean wet cloth with T-Spray between each patient use.

3. When a mobile ultrasound machine is taken to a patient in isolation, the technologist wears proper attire, as outlined on the isolation card attached to the door or as otherwise directed by Nursing Service personnel. Refer to Infection Control B.I.T. Equipment that is transported into patient isolation rooms requires cleaning and disinfection (all surfaces except wheels) before being transported into another patient room or returned to the Radiology Department

IX. GENERAL INFECTION CONTROL GUIDELINES

- A. Standard Precautions are used for all patients.

- B. If patient has a respiratory infection he is placed in a private room as soon as possible.

- C. Personnel maintaining good personal hygiene habits while working with patients, such as the wearing of clean uniforms or scrub suits and turning the head to cough or sneeze into a disposable tissue.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 26 of 44

D. Personnel should wear disposable gloves when there is contact with any patient’s secretions or other potentially infectious material.

E. Goggles and splash-proof gowns are available and should be worn when there is a possibility of splashing of body fluids.

F. Clinical Care of patient Includes:

1. IVs should not be disturbed. If they stop, call the physician in charge or the nurse in charge of patient.
2. When handling patient with indwelling urinary catheters, care should be taken not to elevate the urine bag above the bladder in order to reduce the incidence of reflux back into the bladder.
3. When in intensive care units such as NICU, PICU, SICU, or MICU that requires special attire, the persons doing the procedure must follow recommendations for infection control for that unit. Individual packets of sterile gel are used in NICU and sterile areas.
4. The hospital linen policy is followed.

X. DISPOSAL OF WASTE

Material saturated with any patient’s body fluids are considered contaminated waste and is placed in a contaminated trash box for incineration. The hospital policies for contaminated linen and sharps are followed. Refer to IC Policy 6.0: Contaminated/Regular Waste.

XI. ROUTINE CLEANING DONE BY HOUSEKEEPING PERSONNEL

- A. Routine cleaning of rooms with housekeeping disinfectant is done daily.
- B. Floors are to be mopped daily or more often as needed.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 27 of 44

- C. Housekeeping personnel clean all spills of body fluids.
- D. Shelves and other storage areas are cleaned monthly.

XII. ROUTINE CLEANING DONE BY ULTRASOUND PERSONNEL

- A. Ultrasound personnel clean ultrasound machines and equipment..
- B. Shelves and other storage areas are checked and cleaned monthly.
- C. Exam tables are cleaned when visibly soiled.

Written: 1979

Revised: 95, 97, 99, 01, 2/03, 4/05, 4/07, 4/09, 09/11

Infection Control Guidelines

Breast Imaging
Department of Radiology

INFECTION CONTROL GUIDELINES

PERSONNEL

- A. All personnel shall practice good personal hygiene. Refer to IC Policy 2.0: Hand Hygiene.
- B. If uniform becomes contaminated, employee will change into another uniform immediately and place contaminated clothing in plastic bag and send to the Laundry. At no time will an employee wear contaminated clothing off the premises. Refer to IC Policy 5.0: Care of Personal Clothing Soiled with Patient’s Blood/Body Fluids.
- C. Occupational Health Guidelines are followed. All new employees are initially evaluated by the Occupational Health Clinic. Annual evaluations are required thereafter. All employees are urged to keep immunizations current. Supervisors should promptly schedule all employees with OHC for evaluation, immunization, or follow-up as appropriate.
- D. Employees will not work if they are known or suspected of having a communicable disease.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 28 of 44

- E. Standard precautions must be observed at all times.
- F. Personal Protective Equipment (PPE) including splash proof gown, goggles, and gloves are available in each exam room for use if splashing/contamination of body fluids is a possibility.

PATIENT ASSESSMENT

- A. All patients are assessed upon arrival at the reception desk in Breast Imaging. If assessment indicates an infectious process, the patient is placed in a private exam room and seen immediately.
- B. Special procedure patients are reassessed during and following procedure. Patients are instructed not to remove the bandage or touch the wire for localization. Core biopsy patients are given home care instructions with additional bandages upon discharge.

HANDWASHING

- A. Refer to IC Policy 2.0: Hand Hygiene.
- B. Routine patient contact: For routine patient care, hand washing for 15-20 seconds with soap and water before and after contact with any patient.
- C. Invasive procedures: Antiseptics are used before performing any invasive procedure. Hands are scrubbed using Hibiclens (chlorhexidine gluconate) surgical scrub for six minutes or Iodophor for five minutes.

A. IV. PATIENT SKIN PREPARATION:

B. Refer to IC Policy 22:0 Skin Preparation for Invasive Procedures

C. http://www.sh.lsuhsu.edu/policies/policy_manuals_via_ms_word/infection/IC%20220.pdf

V. GLOVES

- A. Gloves are worn when it is anticipated that personnel may have contact with blood and/or body fluids, other potentially infectious materials, mucous membranes and non-intact skin.
- B. Gloves are worn when performing vascular-access procedures and when handling contaminated items and specimens.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 29 of 44

VI. EQUIPMENT

A. Processing of equipment

1. Disposable items are used once and discarded. They are not reused. Refer to IC Policy 7.1: Reuse of Disposable Items and Equipment.
2. Medication vials are initialed when opened and discarded as appropriate.
3. Reusable items are sent to Central Medical Supply (CMS) for cleaning and processing after each use. The trays used for special procedures are sent to Central after each use. These items are not cleaned in the department. This would include the gel used for ultrasound. Gel containers are returned to CMS for cleaning and processing before being refilled. Personnel are to wear gloves when refilling the containers with gel.
 4. X-ray and Ultrasound equipment that touch the patient are cleaned thoroughly with hospital approved (T-Spray) disinfectant between patient use.
 5. Open Wounds: When possible, avoid placing ultrasound transducer in an open wound. If unavoidable, cover the transducer with a disposable latex-free cover. The integrity of the cover is inspected prior to use. When the integrity of the cover is compromised and/or the transducer becomes contaminated, it will be processed using the Glutaraldehyde (Cidex) process below. When ultrasound exam is finished, clean the probe thoroughly with enzyme cleaner (alconox, etc.), rinse with sterile water, and dry with a clean towel. Probe is soaked in Glutaraldehyde (Cidex), 2.4% for 45 minutes. This is available for use in the Ultrasound Department.
 - a. Processing with Glutaraldehyde (Cidex), 2.4%
 1. Personal protective equipment (gloves, gown, eyewear, mask) is used.
 2. Glutaraldehyde is kept in a controlled area. Containers are kept covered to prevent the fumes from disseminating into the air. The room should have at least 10 air exchanges.
 3. The door to the processing room is kept closed at all times.
 4. Used instruments are cleaned thoroughly with an enzyme cleaner, rinsed and dried. Hands are washed between the decontamination stage and the disinfectant stage.
 5. The instrument is soaked 45 minutes in Glutaraldehyde (Cidex,) 2.4%.
 6. Glutaraldehyde is thoroughly rinsed using sterile water from the probe and the probe is dried using a clean towel before use.
 7. Glutaraldehyde is tested daily before placement of instruments using test strips with results recorded in a logbook.
 8. The dry instrument is stored in a clean dry area.
 9. Glutaraldehyde is discarded in the appropriate container every 14 days or sooner if solution becomes diluted or soiled.
 10. Discard date is placed on disinfectant containers when opened at the time of initial use.
 11. Safety office is responsible for cleaning up any spills of Cidex.
1. Digital Mammography Room

	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 30 of 44

A. Equipment Cleaning and Disinfection

1. The hospital approved disinfectant is to be used for the mammography equipment that comes in contact with the patient. This is done after each patient and/or use of equipment.
2. This is sprayed on the gauze wipe and is not sprayed directly onto the grid/receptor. Liquids should be avoided on this receptor to prevent moisture from penetrating the cover.

VII. SPECIFIC INFECTION CONTROL PROCEDURES FOR BREAST IMAGING

A. Invasive Procedures

1. An appropriate skin preparation is performed prior to any invasive procedure.
Refer to IC. 22.0
2. Refer to IC 2.0 Hand Hygiene
3. Sterile gloves are worn after the surgical scrub.
4. Attire consists of appropriate PPE (sterile gloves, gown, and mask).
5. Set up for sterile field includes checking all sterile packages for damage, date, and supplies. This field is supervised and protected for sterility.
6. Sterile drapes are used for all procedures.
7. Needle directed biopsy sites have Neosporin ointment applied and covered by sterile gauze and bandage.
8. Core biopsy sites have Neosporin ointment and Band-Aid applied before discharge.
9. If ultrasound procedure is performed, sterile gel is used throughout the procedures and care is taken that only sterile personnel handle the transducer.
10. After the procedure all equipment used is cleaned with hospital disinfectant.

B. Isolation Procedures

1. Standard precautions are used for all patients. Masks are available in each exam room.
2. When a patient requiring isolation arrives in the department, the technologist refers to the Infection Control B.I.T. located within department or available online for appropriate isolation practices.
3. Nursing service notifies the department when the patient is in isolation. This patient should be expedited through the department
4. If the patient requires respiratory isolation (TB, R/O TB, or Chickenpox) this exam is prioritized and the procedure is done in the negative pressure room. If a negative pressure room is not available and the patient requires respiratory isolation, the patient wears a mask to the department and while in the procedure room.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 31 of 44

5. Any part of the equipment that touches a patient must be wiped with hospital-approved disinfectant after exam.
6. After completion of exam, this room is left vacant for 30 minutes unless Infection Control is consulted for a shorter time.
Refer to the IC Tuberculosis Control Plan for exact time period.
7. Patient is to wear a mask and it is changed when moist. When patient should wear mask but is unable, department employees should wear mask when in contact with patient.
8. Infection Control practitioner is notified if any questions.

VIII. GENERAL INFECTION CONTROL GUIDELINES

- A. Personnel maintaining good personal hygiene habits while working with patients, such as the wearing of clean uniforms, or scrub suits and turning the head to cough or sneeze into a disposable tissue.
- B. Personnel wear disposable gloves when there is anticipated or known contact with any secretions or other potentially infectious material.
- C. Personal Protective Equipment including goggles and splash-proof gowns are available and should be worn when splashing/contamination of body fluids are a possibility.
- D. The hospital linen policy is followed.
- E. Needles, knife blades, and syringes are handled cautiously. The needle is not recapped after use. These items are placed in a sharps container. When the sharps container is 2/3 full, it is placed in the contaminated trash box for ultimate disposal.
- F. Clinical Care of Patient
 1. IV's should not be disturbed. If the IV stops, call nurse or unit in charge of patient.
 2. When handling patient with indwelling urinary catheters, care is taken not to elevate the urine bag above the bladder to reduce the incidence of reflux back into the bladder.

D. IX. ENVIRONMENT

- A. Department Work Areas
 1. Exam rooms are kept clean and orderly at all times. Care is taken to prepare the room for each patient according to the nature of the examination to be performed and special considerations as indicated.
 2. No food or drink is allowed in the treatment or exam areas during procedure.
- B. Linen
 1. All clean linen must be kept covered or stored in an enclosed cabinet or closet.
 2. All dirty linen will be stored in the linen container within the workroom.
 3. Contaminated linen will be place in a plastic bag before being placed in the linen container.
 4. At the end of the day all linen will be placed in the linen chute to the laundry.
 5. Refer to the hospital linen policy

	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 32 of 44

- V. X. DISPOSAL OF WASTE
 - A. All contaminated waste is placed in a contaminated trash box to be incinerated.
 - B. All laundry items contaminated with body fluids are placed in a plastic bag and sent to the laundry.
 - C. Any spills of body fluids are removed by using the housekeeping disinfectant and a disposable cloth.
 - D. Refer to the IC B.I.T. and IC Policy 6.0: Waste Policy Contaminated/Regular.

- VI. XI. ROUTINE CLEANING OF BREAST IMAGING DEPARTMENT
- VII. (HOUSEKEEPING)
 - A. Housekeeping Department Responsibilities
 - 1. Daily routine cleaning of exam rooms with the hospital-approved disinfectant.
 - 2. Floors are to be mopped daily or more often when necessary.
 - 3. Trash is emptied daily or more often as required.
 - 4. Needle boxes and contaminated boxes replaced as needed by hospital guidelines.
 - 5. All spills of body fluids. Emergency situations may require department employee to cover spill with sheet until housekeeping arrives.
 - B. Housekeeping Responsibilities for Breast Imaging Personnel
 - 1. Equipment is routinely cleaned and dusted weekly.
 - 2. Exam tables, compression plates, grids, and probes are cleaned with Cavi-wipes after each patient.
 - 3. Equipment used for invasive procedure is thoroughly cleaned with hospital-approved disinfectant immediately after each use.
 - 4. Lead aprons are cleaned with housekeeping disinfectant weekly and more often when soiled.

References:

- LSUHSC Hand Hygiene IC 2.0
- LSUHSC Infection Control Bloodborne Pathogen, Isolation, and Tuberculosis Control Plan (B.I.T.)
- LSUHSC IC Policy 5.0: Care of Personal Clothing Soiled with Patient’s Blood/Body Fluids.
- LSUHSC IC. 22.0: Skin Preparation for Invasive Procedures
- LSUHSC IC Policy 7.1: Reuse of Disposable Items and Equipment.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 33 of 44

INTERVENTIONAL RADIOLOGY DEPARTMENT

Patients having invasive radiological procedures are at increased risk for developing nosocomial infection. When the following guidelines are implemented the risk can be reduced.

Policy

The following infection control guidelines are followed in the Interventional Radiology Suites. It is the responsibility of the manager and the supervisor to assure these guidelines are carried out by all personnel.

I. STANDARDS FOR PROPER WEARING APPAREL

- A. Standard precautions are used for all patients. Protective attire, i.e., splash-proof gowns, gloves, masks, and goggles are available and should be worn whenever contact with blood or body fluids can be reasonably anticipated.
- B. The person performing the procedure and the first assistant must change into clean scrub clothes; wear clean mask, a cap, sterile gown, and sterile gloves. Other persons entering the room during procedure must wear a mask, a cap and clean scrub suit.
 - 1. A surgical mask is worn by the physician performing the procedure, his assistant, and the circulating person. The person setting up the sterile field must also wear a mask. Earloop masks are not appropriate for Interventional Radiology.
 - 2. The mask must cover the mouth and nose completely.
 - 3. The mask must be completely secured to prevent venting at the sides.
 - 4. Masks are either on or off. They are not to be saved by hanging around the neck or being tucked into a pocket for future use.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 34 of 44

- C. All hair, including sideburns and beards, is covered completely with a clean scrub hat.
- D. All scrubs are laundered within the hospital facilities daily.
- E. Attire must be changed if contaminated with any patient’s body fluids.
- F. Protective eye wear is available if splashing is a possibility; Lead glasses are also available for all staff.
- G. Sterile barrier gowns are available and worn as needed.
- H. Hypoallergenic gloves are available for people allergic to latex.

The Hand Hygiene Guidelines, IC 2.0, which can be accessed online at <http://www.sh.lsuhs.edu/policies/policy>. If scrub suits are worn outside the _____ unit, they must be fully covered with a full length, buttoned lab coat or cover _____ gown. If scrub suits are worn outside the unit without a cover, they must be _____ changed prior to patient care. Follow IC 13.0, “Hospital Scrub Suit Policy.”

- I. For purposes of hand hygiene, the Interventional Radiology Department is considered to be an operating room; therefore artificial nails and nail polish are not worn.

II. STANDARDS FOR SURGICAL HAND SCRUB

- A. Physician and assistant must perform surgical scrub.
 - 1. Prior to beginning surgical hand scrub:
 - a. Nails are free of polish, or other artificial substances, and kept short. Cuticles are in good condition and no cuts or skin problems exist. All jewelry is removed.
 - b. Place clean mask over nose and mouth and tie, assuring that there is no venting at the sides or chin; secure hair coverage.
 - c. Ascertain that scrub suit is fitted, tied, or tucked into the trousers.
 - 2. Wash hands and arms briefly to remove soil from the skin. Hibiclens (Chlorhexidine gluconate 4%) is the antiseptic of choice. (Scrub for six minutes). For those allergic to chlorhexidine gluconate, iodophor surgical scrub is available (scrub for five minutes). Open the sterile sponge, using care not to drop the contents. Remove the sponge and the nail cleaner from the package.
 - 3. Clean the nails and area under nails with the nail cleaner included with the sponge.
 - 4. Rinse hands and arms thoroughly.
 - 5. Wet the sponge with sufficient water to create a rich foam.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 35 of 44

6. Apply the foam to the hands. Scrub the hands and arms to two inches above the elbow for three minutes; in such a manner that solution flows from the fingertips to the elbows. Rinse thoroughly, holding the arms so that water flows from the fingertips to the elbows. Repeat this step for three additional minutes. The same sponge is used for both hands.
7. Discard the sponge in the trash, using care not to contaminate the hands or arms.
8. Hold hands up when entering suite to avoid hands and arms becoming contaminated. If contamination occurs, the scrub must be entirely repeated.
9. **Procedure for using Avagard Surgical Hand Scrub:**
 - a. Remove all jewelry. Perform a prewash as described above prior to the first scrub of the day.
 - b. For all subsequent scrubs, if hands are visibly soiled, prewash to remove organic soil.
 - c. Be certain that clean dry hands and nails are thoroughly clean and dry.
 - d. Dispense one pump (2ml) of Avagard into the palm of one hand.
 - e. Dip the fingertips of the opposite hand into the lotion and work it under the nails.
 - f. Spread remaining lotion over the hand and up to just above the elbow.
 - g. Using another 2 ml. of Avagard, repeat with the other hand.
 - h. Dispense another 2ml. of Avagard into either hand and reapply to all aspects of both hands up to the wrist.
 - i. Lightly and continuously rub hands together and allow the Avagard to dry before donning gloves.
 - j. DO NOT dry hands with a towel prior to donning sterile gloves.

B. Circulator washes hands thoroughly between each case and after contact with the patient's body fluids. Alcohol hand sanitizer (Avagard D) as described in the Hand Hygiene Guidelines, IC 2.0, may be used by the circulator and non scrubbed members of the team, but is not acceptable as a surgical hand scrub.

1. Invasive Procedures: antiseptics are used before performing any invasive procedure. Hands should be scrubbed using a surgical scrub-five minutes using iodophor, and six minutes with Chlorhexidine.
2. Routine Patient Care: For routine patient contact, handwashing for 15 seconds with soap and water before and after contact with any patient is

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 36 of 44

recommended. Friction is recommended to mechanically remove the bacteria. Alcohol based hand sanitizer may be used if the hands are not visibly soiled or contaminated with blood or other body fluids.

3. Reference: LSUHSC-Shreveport Hand Hygiene Policy number IC 2.0 for detailed instructions.

III. STANDARDS FOR PREOPERATIVE SKIN PREPARATION

Criteria for establishing effective preoperative skin preparation of patients. Chloraprep OneStep is the preferred skin prep. Shaving is not performed in the IR Department, only clipping is done when deemed necessary for the procedure.

Note: Chloraprep One-Step contraindications: Mucous membrane, denuded skin areas, donor skin graft sites, burn areas, ears, eyes, lumbar puncture or in contact with meninges, and chlorhexidine gluconate sensitive patients.

- A. Chloraprep One-Step – Chloraprep One-Step can be used on external genitalia.
1. Assure skin is thoroughly clean. (No soil, adhesive residue, blood, lotion, powder, open wounds or signs of infection). Wear sterile gloves. Pinch wings on applicator to break ampule. Do not touch the sponge. Wet the sponge by repeatedly pressing and releasing the sponge against the treatment area until liquid is visible on the skin.
 2. Dry surgical sites (such as abdomen): Using a scrubbing motion completely wet the treatment area, making certain that the entire prepared area is completely wet, approximately 30 seconds. Do not blot or wipe off.
 3. Moist surgical sites (such as the inguinal fold): Using a scrubbing motion completely wet the treatment area, making certain that the entire prepped area is completely wet for two minutes. Do not blot or wipe away.
 4. Allow the prepped area to dry completely.
 5. Discard the applicator after a single use. Do not use a single applicator to prep multiple sites, such as bilateral groin biopsies or bilateral breast biopsies.
 6. Multiple applicators may be used for large prep area.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 37 of 44

7. ChlorPrep contains alcohol, and therefore is flammable as long as fumes are present. Allow the solution to dry completely and remove any soaked materials, drapes, and gown before using an ignition source, such as an electrocautery. Be aware that hairy areas take longer to dry.

B. Chlorhexidine gluconate 4%

1. Chlorhexidine gluconate 4% is used full strength. It is not diluted.
2. Apply scrub to the operative site using standard surgical prepping technique and scrub thoroughly for three minutes, starting at the site of the incision and working in ever widening concentric circles to the periphery. Discard the sponge when the periphery is reached.
3. Blot off scrub with a sterile sponge or blotting towel, using care not to drag bacteria across the prepped area from the periphery.
4. Repeat the above procedure.
5. Blot dry with sterile sponge or blotting towel, using care not to drag bacteria across the prepped area from the periphery.
6. **This solution is not to be used on the face.**

C. Iodophor scrub (Povidone-iodine 7.5% scrub; Povidone iodone 10% aqueous solution)

1. Because Iodophor Surgical Scrub (Povidone Iodine 7.5%) contains detergents, it must be rinsed off.
2. Follow manufacturer's instructions.
3. Wet skin with sterile water. Apply Scrub, develop lather, and scrub thoroughly for 5 minutes. Starting at the site of incision or puncture, apply the antiseptic using concentric circles, working outward, making certain that the entire prepared area is completely wet. Do not allow Scrub to pool beneath the patient.
4. Rinse off with sterile gauze saturated with sterile water. Blot dry with a sterile sponge or towel.
5. Apply Iodophor Solution (aqueous solution of 10% povidone-iodine). Starting at the site of incision or puncture, apply the solution using concentric circles, working outward, making certain that the entire area is prepped. Do not allow solution to pool beneath the patient.
6. Allow solution to dry.
7. May be covered with a bandage if instructions from the manufacturer allows. (Check the label to be certain.)

D. DuraPrep

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 38 of 44

DuraPrep contraindications: Mucous membrane, denuded skin areas, donor skin graft sites, burn areas, ears, eyes and iodine sensitive patients. Can be used on external genitalia.

Follow the manufacturer’s instructions.

1. Ensure skin is thoroughly cleaned prior to prepping.
2. Do not use the 25 ml applicator for the head and neck or for an area smaller than 8x10 inches.
3. Do not use on patients with known allergies to iodine, open wounds, or infants under 2 months of age.
4. Avoid using on hairy areas. Wet hair is flammable, and drying may take up to one hour.
5. Starting at the site of incision or puncture and working toward the periphery, paint a single, uniform coat of the solution on the skin Use only light pressure. Do not scrub or go back over areas already prepped. If pooling occurs, immediately blot with the sponge applicator and continue. Allow solution to dry on hairless skin for at least 3 minutes. In hair, up to one hour may be required. Do not use towel to blot dry. Use sterile gauze to wick away any pooling.
6. Once dry, proceed with draping.

E. See LSUHSC-Shreveport Infection Control Policy IC 22.0 “Skin Prep for Invasive Procedures” for further detail.

III. PROCESSING OF EQUIPMENT

A. Disposables

Disposables are used once and discarded; they are never reused, nor reprocessed.

B. Reusable Items

1. Reusable items, i.e., gel containers are sent to Central Medical Supply for cleaning and processing before refilling; they are not to be refilled before being sterilized. These items are never cleaned in the department.

2. When filling gel containers, gloves are worn.

C. Transducers

1. The transducer head is cleaned thoroughly with T-spray between patients.

2. Whenever the transducer head must be used on broken skin, within a wound, for a sterile procedure, or on patients who are in isolation, the transducer head is covered with a disposable latex free sterile probe cover. After completion of the scan, clean the transducer head thoroughly with instrument cleaner and then wipe with the housekeeping disinfectant.

3. Rectal Probes:

a. The transducer is placed in a latex-free probe cover before use. Ultrasound gel is placed inside the probe cover to maximize conduction. The cover is checked for

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 39 of 44

holes or tears, and the integrity of the cover is ensured before use. Probes are soaked in Glutaraldehyde (Cidex 2.4%) for 45 minutes.

- b. The only instrument approved for disinfecting with gluteraldehyde by Special Procedures personnel is the rectal probe.
- c. Processing the Rectal Probe with Glutaraldehyde (Cidex 2.4%)
 1. Only personnel who are trained in the use of gluteraldehyde are allowed to disinfect instruments using it. Personal protective equipment (gloves, gown, eyewear, mask) is worn during the decontamination phase and when working with gluteraldehyde.
 2. Glutaraldehyde is kept in a controlled area. Gluteraldehyde is not kept in the Special Procedures department, but is located in the Ultrasound Department. Containers are kept covered to prevent the fumes of Glutaraldehyde from disseminating into the air.
 3. The door to the processing room is kept closed at all times.
 4. Used instruments are cleaned thoroughly with enzyme cleaner, rinsed and dried. Hands are washed between the decontamination stage and the disinfectant stage.
 5. The instrument is soaked for 45 minutes in Glutaraldehyde (2.4%), then rinsed 3 times in sterile water and dried with a freshly laundered towel that is used once and returned to the laundry.
 6. The dry instrument is stored in a clean dry area.
 7. Glutaraldehyde is discarded in the appropriate container every 14 days or sooner if solution becomes diluted, soiled, or loses efficacy. Safety Office picks up used Glutaraldehyde for disposal.
 8. Cidex containers are labeled with date mixed, expiration date, chemical name, and the initials of the person who mixed it.
 9. Cidex Activated Dialdehyde (2.4% glutaraldehyde) is tested daily before use for efficacy and test results are recorded in a log. Care is used to ensure that only Cidex Activated Dialdehyde Test Strips are used to test for efficacy, and that expiration date of the strips have not expired.

V. SPECIFIC INFECTION CONTROL MEASURES WHEN PERFORMING INVASIVE PROCEDURE

- A. Personnel setting up sterile field must wear mask and hands must be washed prior to opening or assembling of supplies.
- B. Sterile trays are not opened until immediately prior to use.
- C. Setting up of sterile trays is done immediately before use. They are not left unattended or covered.
- D. Unsterile personnel do not come within two feet of procedure or sterile field.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 40 of 44

- E. Doors are kept closed during all procedures.
- F. Interventional Radiology personnel are attentive to the environment, especially during invasive procedures. Activities that may cause dust disturbance, i.e., buffing floors or changing ceiling tiles, either in the room or the adjacent corridor are not permitted when sterile sets are open or patients are present.
- G. All reusable materials used for invasive studies are cleaned and processed by Central Service.
- H. The number of people in the room is to be kept to a minimum during procedures.
- I. All reusable supplies must be sent to Central Service for sterilization and disposable items are disposed of in the proper manner, following the LSUHSC-Shreveport policy IC 6.0, "Waste Policy".
- J. Any part of the equipment that touches a patient must be wiped with a disinfectant wipe or clean cloth wet in the housekeeping disinfectant between each patient use. If the item touches the patient or is placed over a sterile field, a sterile cover is placed over the equipment.

VI. GENERAL INFECTION CONTROL GUIDELINES

- A. Single-dose (unit dose) ampules are used and are discarded after each patient. Large vials are discarded after each use. They are inspected before ~~each~~ use for particles or discoloration of the solution, and integrity of the rubber port, and are discarded immediately if there is any question that the safety of the solution has been compromised. Multiple-dose ampules of contrast media are used only once. Unused portion is discarded immediately to avoid possible contamination. Xylocaine vials are discarded after each patient use.
- B. Disposable gloves should be worn by personnel during clean-up procedures when there is contact with body secretions or excretions; strict handwashing should also be observed after these procedures.
- C. Sinks should not be used for discarding patient secretions and excretions; a designated toilet is used and the material flushed into the sewer system.
- D. A suction machine is maintained in working order with a sterile suction catheter available to ensure that suction is readily available when needed. The suction canister, tubing, and catheter is changed between each patient use. They are placed in the contaminated waste container for disposal.
- E. The emergency cart contains an ambu or other breathing bag, three clean masks (small, medium, large) which are covered with plastic duct covers, as well as assorted sizes of airways, clean and ready for use at all times.
- F. Linen is changed between each patient procedure. The table is cleaned thoroughly with housekeeping disinfectant to remove any patient body fluid.
- G. Sterile supplies are rotated so that they do not become outdated. Expiration dates are checked before use. Chemical indicators in each pack are checked before use.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 41 of 44

- H. Used needles and syringes are handled cautiously. The needle is not recapped after use. The needle and syringe are placed in the contaminated needle box for ultimate disposal. If recapping is required, the single-hand procedure is used. Safety syringes and needles are used whenever possible.
- I. Sterile and clean supplies are stored separately but can be stored in the same room. They should be stored not less than 12 inches from the floor. Only dirty items can be stored in dirty utility room.
- J. Disposable items are never reused. Disposable items which are used once and discarded include arterial catheters, brush biopsy kits, and Roentgenography sets, and barium enema catheter tips.
- K. Reusable Items: Reusable items are sent to Central Service for cleaning and processing after each use. These items are not cleaned in this department.
- L. Invasive Procedures
 1. IV's are not connected until immediately before use.
 2. Contrast media is not drawn up into syringe until immediately before use. IV solutions are not premixed.
- M. When handling patients with IVs special care should be taken to avoid dislodgement and/or contamination. Follow the nursing policy for starting IVs.
- N. When handling patients with indwelling urinary catheters, care should be taken not to elevate the urine bag above the bladder in order to reduce the incidence of reflux back into the bladder. Bags are attached to the side of the bed if a urine bag holder is used. Catheters are also secured to the patient's leg to prevent pulling or migration.
- O. Dressings should not be disturbed. If a dressing falls off the wound, replace it using sterile gloves and sterile dressings to avoid contamination of the wound site. Sterile prepackaged dressings such as 4 x 4s are available in the department.

VII. OCCUPATIONAL HEALTH

- A. The Occupational Health guidelines are followed. Personnel performing procedures should be free from infections.
- B. Personnel should notify their supervisor immediately and go to the Occupational Health Clinic if they have a skin rash or skin infection, active respiratory infections, fever, influenza or any such symptoms. When exposed to any infectious disease the Occupational Health Nurse is consulted.
- C. For recommendations on prevention of bloodborne disease and TB, refer to the Bloodborne Pathogen and TB Standards in the Infection Control BIT.
- D. Employees will be compliant with Hospital Policy 3.16.0: Influenza (Flu) Vaccination Policy for Employees.

VIII. ISOLATION PROCEDURES

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 42 of 44

- A. The hospital infection control guidelines are followed for isolation. Patients requiring respiratory isolation, i.e., TB or chickenpox, will have the procedure done in the Operating Room. Reference IC Guideline 1.0, Infection Control B.I.T.

IX. STANDARDS FOR SANITATION

All unnecessary equipment is removed from room before a procedure begins. A fresh cleaning solution is prepared daily. Housekeeping is responsible for all routine cleaning, except during the surgical procedure.

Cleaning in this area is divided into three stages.

- A. Preparatory Cleaning
1. Housekeeping personnel must be properly dressed in gown and gloves when cleaning. Housekeeping must supply their gowns.
 2. Early each morning, the flat surfaces of the table, equipment, and over-head lights are damp dusted with a clean cloth that has been moistened with a housekeeping disinfectant. This is to be done as early in the morning as possible.
- B. During Surgical Procedure. Areas such as floors, tables, and walls contaminated by organic debris such as blood during the course of the procedure, receive immediate attention by applying a housekeeping disinfectant. Disinfectant is poured, never sprayed, onto the cleaning cloth or spill. Gloves should be worn during this procedure to remove the spill.
- C. Cleanup Between Procedures (Done by Environmental Services)
1. All horizontal surfaces of the furniture, equipment, and table are cleaned with a housekeeping disinfectant.
 2. The floor is spot cleaned between each case. The water and mop is changed between each case.
 3. Spot cleaning of the walls and ceiling is done when needed.
 4. Overhead lights are cleaned with detergent/disinfectant when dirty.
 5. Terminal Cleaning At the Completion of the Day's Schedule (Housekeeping Responsibility) This will be done only if the procedure room is used.
 - a. Furniture is thoroughly scrubbed by means of the housekeeping disinfectant with the use of good mechanical friction.
 1. Wheels and casters of furniture and equipment are cleaned and kept free of debris.
 2. Spotlights and tracks are cleaned.
 3. All wall-mounted or ceiling-mounted equipment is cleaned.
 - b. Kick-buckets and waste receptacles are cleaned and disinfected in the utility room.

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 43 of 44

- c. Scrub sinks are thoroughly cleaned daily. Articles are not left on sink since moisture provides media for bacteria to grow.
- d. Doors, cabinets, and all horizontal surfaces in all rooms are cleaned daily, especially around the handles and push plates.
- e. Transportation and utility carts are cleaned daily with specific attention being given to cleaning wheels and casters.
- f. Floors are scrubbed daily with a housekeeping disinfectant.
- g. Cleaning equipment is disassembled and cleaned with a house-keeping disinfectant. The equipment must be allowed to dry thoroughly.
- h. Overhead lights are cleaned thoroughly.

D. Weekly Cleaning (Interventional Radiology Staff)

- 1. IR Staff will assure that shelves in storage cabinets are cleaned at least monthly. (This may be done either by Environmental Services or IR Staff.)
- 2. Supplies are checked for date.
- 3. Walls and ceilings are cleaned when necessary.

E. Computers

- 1. Gloves are not worn during computer use.
- 2. Hands must be de-germed after accessing the computer, before touching patients in multi-bed rooms. Hands must be washed or alcohol based hand sanitizer used.
- 3. Computer surfaces, including keyboards, are cleaned/disinfected using hospital approved disinfectant wipes by wiping the surfaces with friction for 5 seconds once a day and when soiled.
- 4. Disinfectant wipes are used once and discarded.

X. DISPOSAL OF WASTE

Contaminated waste is placed in a contaminated trash box. All other waste is disposed of in regular trash. Chemo-waste is to be placed in the chemo-container and the safety department will be contacted for removal of waste. All chemo cases are to be scheduled in Neuro-IR with the eye wash station.

References:

Association of Operating Room Nurses, Inc. AORN Standards and Recommended Practices for Preoperative Nursing, Denver: Association of Operating Room Nurses, 2009.

CDC. Guideline for Environmental Control in Healthcare Facilities, available online at www.cdc.gov

 University Health™	Policy #:7.1
SUBJECT: Infection Control	Written: 11/76 Reviewed:10/16
APPROVED BY: Director of Radiology	Page 44 of 44

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