


Name of Policy:	<u>Radiation Safety for Radiation-Generating Equipment</u>	
Policy Number:	3364-135-108	
Department:	Radiology	
Approving Officer:	Chief Operating Officer - UTMC	
Responsible Agent:	Chairman & Professor, Radiology	
Scope:	Radiology	
		Effective Date: 8/1/2022
		Initial Effective Date: 6/22/1999
<input type="checkbox"/> New policy proposal <input checked="" type="checkbox"/> Minor/technical revision of existing policy <input type="checkbox"/> Major revision of existing policy <input type="checkbox"/> Reaffirmation of existing policy		

(A) Policy Statement

As prescribed by the Ohio Administrative Code, radiation safety procedures shall be in place for all types of radiation-generating equipment at the University of Toledo Medical Center.

(B) Purpose of Policy

To provide procedures for the safe operation of radiation-generating equipment.

(C) Procedure

1. Radiation Generating Equipment is located in the following areas:
 - a. Radiographic Stationary: UTMC Radiology, Regency, Comprehensive Care Center, ED Trauma, Dana Cancer Center, Orthopedic Center
 - b. Radiographic Mobile: UTMC Radiology
 - c. Bone Densitometry: Dana Cancer Center, Regency
 - d. Computerized Tomography: UTMC Radiology, Nuclear Medicine, Heart Station
 - e. Mammographic: UTMC Radiology, Dana Cancer Center
 - f. Fluoroscopic Under Table: UTMC Radiology
 - g. Fluoroscopic C-arm Stationary: Cath Lab, Surgery, UTMC Radiology
 - h. Fluoroscopic C-arm Mobile: Surgery, Pain Clinic, Sim Center, ECORE Lab
 - i. Fluoroscopic C-arm Miniature: HEB 030
 - j. Simulator CT: Dana Cancer Center
 - k. Integrated kVp: Dana Cancer Center
 - l. Therapy-, Operates >= MV (Linac): Dana Cancer Center
 - m. Cabinet System Exclude Admittance: Surgery
2. All rooms, with Radiation Generating Equipment in use, are restricted areas. In addition, any room in which a portable radiographic or fluoroscopic unit is being used is considered a restricted area.

RADIATION SAFETY RULES FOR RADIOGRAPHY

1. The radiographer shall stand behind a protective barrier when a radiographic exposure is made. Exposure switches have been mounted so that it is not possible to make an exposure from outside the operator's barrier.
2. No employee shall hold a patient during an x-ray exposure unless absolutely necessary for the completion of the examination. All other means of patient restraint should be used before consideration of an employee holding a patient. If holding is necessary, the individual shall wear a full lead apron for protection, as well as gloves if the holder's hands are in the primary beam. The holder must be >18years old and not pregnant.

3. The patient must always be observed from the control area when any exposure is made.
4. Accurate technique is essential to reducing retakes. When manual technique factors are used, reference should be made to charts available for each room and patients should be measured.
5. The radiation should always be restricted to the area of clinical interest using collimation or cones.

RADIATION SAFETY RULES FOR PORTABLE RADIOGRAPHY

1. The radiographer shall wear personal radiation protection (full lead apron) when performing portable radiography.
2. All non-essential persons should vacate the room. Any individual remaining in the room must be provided with protective shielding or must be at least six feet from the x-ray tube and patient.
3. The primary x-ray beam should be pointed away from any other person in the room, preferably toward an outside wall.

RADIATION SAFETY RULES FOR FLUOROSCOPY

1. All persons present in the room during the procedure shall wear protective full lead aprons or be positioned behind a portable protective shield.
2. When practical, protective lead drapes or pull-down shields should also be used during fluoroscopy.
3. The patient should always be positioned as close to the image intensifier as possible.
4. Technical features such as last image hold and pulsed fluoroscopy should be used to minimize both patient and personnel exposure. High level fluoroscopy should be used only when all other techniques have failed to produce adequate imaging.
5. Care should be taken to minimize the time of exposure, consistent with achieving the goals of the study.

RADIATION SAFETY RULES FOR MOBILE FLUOROSCOPY

1. All persons present in the room during the procedure shall wear protective full lead aprons or be positioned behind a portable protective shield.
2. A spacer cone must be attached to the c-arm at all times. If a lateral beam orientation is to be used or, potential contamination of the sterile field the cone may be removed during the procedure. If at any other time the physician determines that the cone inhibits performance of the procedure it may be removed at that time.

RADIATION SAFETY RULES FOR COMPUTED TOMOGRAPHY

1. The patient must always be observed from the control area during the scanning procedure.
2. The operator must be prepared to terminate the scanning sequence if the patient's condition would cause the scan to be unusable.
3. Any person whose presence is required in the room during the procedure shall wear protective full lead apron.

RADIATION SAFETY RULES FOR MAMMOGRAPHY

1. The mammographer shall stand behind the protective barrier when an exposure is made.
2. The patient must always be observed during the radiation exposure.
3. Special attention must be paid to positioning of the patient, which is critical to obtaining optimal imaging and avoiding retakes.

RADIATION SAFETY RULES FOR BONE DENSITOMETRY

1. The operator shall be a least 1 meter from the primary beam or shall be behind a shield.
2. The patient must always be observed during the radiation exposure.
3. The operator shall advise the patient that the bone densitometry examination is a type of x-ray procedure.

<p>Approved by:</p> <p><u>/s/</u> _____ <u>07/22/2022</u> Haitham Elsamaloty, M.D. Date Chairman & Professor, Radiology</p> <p><u>/s/</u> _____ <u>07/26/2022</u> Christine Stesney-Ridenour, FACHE Date Chief Operating Officer - UTMC</p> <p><u>/s/</u> _____ <u>07/20/2022</u> Joe Agosti, CNMT Date Radiation Safety Officer</p>	<p>Review/Revision Date: 5/13/2005 5/28/2008 5/20/2011 6/3/2014 5/23/2016 5/23/2019 1/1/2020 8/1/2020 8/1/2022</p>
Next Review Date: 8/1/2025	
Policies Superseded by This Policy: R-024	