

FACILITY: Reading Hospital	
MANUAL: Organizational	FOLDER: Environment of Care / Radiation Safety
TITLE: Minimizing Patient Dose during X-ray Imaging Procedures	DOCUMENT OWNER: Radiation Safety Officer
DOCUMENT ADMINISTRATOR: Administrative Director and Department Chair	KEYWORDS: shielding, radiation
ORIGINAL DATE: 3/29/2012	REVISION DATE(S): 5/2014, 4/2018, 11/2021, 12/2021, 1/2022

SCOPE:

All Reading Hospital patients undergoing imaging procedures/studies using x-rays.

PURPOSE:

To minimize the radiation dose to patients from x-ray procedures.

POLICY:

- A. All Reading Hospital staff performing x-ray imaging procedures, including fluoroscopy shall follow practices and procedures outlined below to minimize patient radiation dose.
- B. Each physician/technologist shall accept responsibility for controlling and minimizing the radiation exposure to patients under his/her care.
- C. The physician/ technologist shall educate other healthcare workers and visitors by utilizing radiation safety principles such as time, distance and shielding to limit exposure to ionizing radiation.

DEFINITIONS:

PROCEDURE:

- A. **Patients Undergoing Imaging** The following are some ways to reduce patient exposure, and should be utilized as applicable:
 - 1. Minimizing repeat images
 - 2. Accurate collimation – The operator must limit the useful beam to the smallest area consistent with clinical requirements.
 - 3. Optimal exposure factors
 - 4. Protection for pregnancy
 - 5. Use of specific procedures and auxiliary equipment to minimize patient and personnel exposure, while acquiring the needed diagnostic information
- B. **Patient Shielding in Shared Areas (ex: semi-private room)**
 - 1. Only the staff, ancillary personnel and other persons required for the medical procedure or training shall be in the room during a radiographic exposure.
 - 2. Other than the patient being examined, patient(s) who cannot be removed from the room shall be protected from the scatter radiation by protective barriers of at least 0.5 millimeter lead equivalent material unless the shield would compromise the health of the individual.

3. Other than the patient being examined, patient(s) who cannot be removed from the room shall be positioned in such a way that he/she is not in the direct line of the useful beam and if possible, the nearest portion of the body is at least 2 meters (6.56 feet) from both the tube head and the nearest edge of the image receptor. This pertains to situations such as portable imaging on the unit and in PACU.

C. **Pregnancy Imaging**

Refer to Radiology Department Manual document entitled: *Imaging Pregnant Patients*

GUIDELINE:

PROVIDER PROTOCOL:

EDUCATION AND TRAINING:

REFERENCES:

10CFR 20: Standards for Protection Against Radiation
Behavioral and Performance Expectations Reading Hospital Human Resources Manual
<https://trh.ellucid.com/documents/view/12970>

COMMITTEE/COUNCIL APPROVALS:

Department of Radiology, Chair; Department of Radiology, Administrative Director; Department of Cardiac Vascular Services, Administrative Director; Radiation Safety Officer, Radiation Safety Committee

CANCELLATION:

The content of this document supersedes all previous policies/procedures/protocols/guidelines, memoranda, and/or other communications pertaining to this document.