

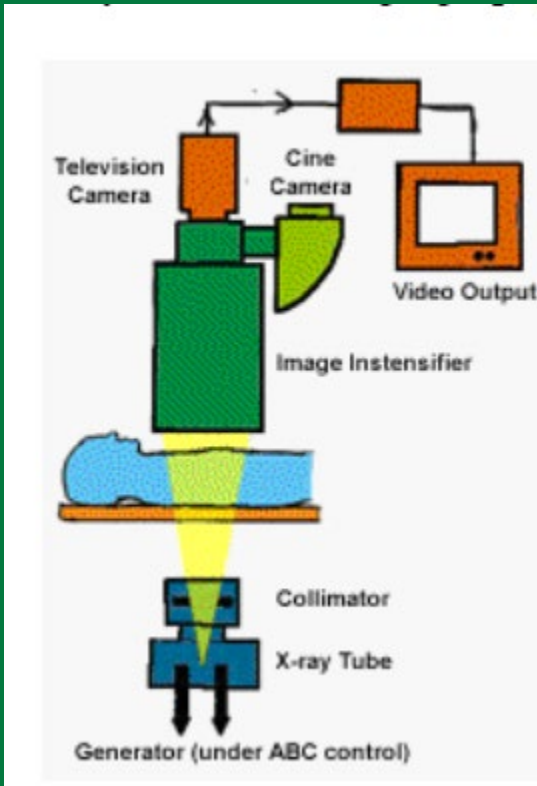


CT and Fluoroscopy Safety

Fluoroscopy Patient Safety:

Basic Components of Fluoroscopy

- Radiation exposure during fluoroscopy is directly proportional to the length of time the unit is activated by the foot switch.
- The typical exposure rate at the X-ray beam entrance into the patient (ESE, or Entrance Skin Exposure) is 2 R/min.
- Most fluoroscopy systems allow the operator to reduce the field size through the use of lead shutters or collimators.
- Extensive use of fluoroscopy can induce severe skin damage, even under the most favorable geometries.
- Previous procedures can lower the skin's tolerance for future irradiation.



Fluoroscopy Safety:

- Steep angled views, especially in large patients, often require penetration of large masses of tissue and dense bone, creating situations in which x-ray output rates are driven near or at the maximum (10 R/min).
- Minimizing time, increasing distance away from tube, and lead shielding are the best ways for staff to minimize radiation exposure.
- All personnel operating fluoroscopy equipment must wear film badges at the collar, outside of their lead.

Image Gently Campaign

www.imagegently.org

- Children are more sensitive to radiation.
- Remember to child-size the kVp and mA.
- Image only the indicated area.

Image Gently Campaign

What Can You Do?

1. Speak up to increase awareness to decrease dose.
2. Be committed to make a change in your daily practices by working as a team.
3. Know your practice standards. Ask questions when you need to!
4. Review protocols frequently. More dose is not better. Adult-size KV and mAs are not always necessary for small bodies.
5. Be involved with your patients. Be prepared to answer questions and reassure parents/caregivers that you will only image the area that is absolutely needed to obtain the necessary information.

Image Wisely Campaign

www.imagewisely.org

- Only use the radiation necessary to produce diagnostic-quality images.
- Share best-practices to reduce radiation dose with your imaging team.
- Communicate optimal patient imaging strategies to referring physicians and be available to answer questions.
- Review imaging protocols to ensure that the least radiation necessary is used to acquire diagnostic-quality images for each exam.

Image Wisely Campaign

www.imagewisely.org

- Physicians must select the right test and consider relative radiation dose.
- Physicians should use available resources, such as the American College of Radiology Appropriateness use criteria (ACR AC), as a tool to make safe clinical decisions for their patients.
www.acr.org/ac
- Risk vs. benefit must be considered and proper steps made to reduce radiation dose.
- The risks to NOT perform an exam includes missing a diagnosis and/or initiating treatment too late to improve medical outcomes. The potential to reduce a patient's overall life expectancy due to a disease must be considered in conjunction with the latency period for radiation-induced cancer and the age of the patient.

How Mon Health Medical Center is Meeting the Joint Commission Requirements

At Mon Health Medical Center, all physicians performing fluoroscopy must include the number of minutes of fluoro time in the procedural dictation.

The Radiologist must include the total CT dose (CTDIvol or DLP) in every CT report.

A diagnostic medical physicist conducts a performance evaluation of all CT and/or fluoroscopic imaging equipment on an annual basis. The evaluation results, along with recommendations for correcting any problems identified, are documented.

Mon Health Medical Center has worked with the medical physicist to put mechanisms in place to identify radiation exposure and skin dose threshold levels. If max limits exceeded, there are triggers to further review and evaluate/assess for adverse radiation effects on the individuals.

How Mon Health Medical Center is Meeting the Joint Commission Requirements

The following triggers have been established to identify possible skin dose thresholds:

* Fluoro for 60 minutes on patients over 300 lbs, or fluoro for 90 minutes on patients under 300 lbs), which require further patient monitoring for radiation skin burns.

*Max CT dose exposures per exam have been set, and alerts will be immediately sent to designated personnel if exceeded by the CT dose software (Sectra).

How Mon Health Medical Center is Meeting the Joint Commission Requirements:

Mon Health Medical Center has established and adopted CT and Diagnostic protocols based on current standards of practice. These protocols are reviewed at least annually by the medical director, medical physicist, imaging director.

Mark Perna is our Radiation Safety Officer. He is responsible for ensuring that radiological services are provided in accordance with law, regulations, and organizational policy.

Review

- Radiation exposure during fluoroscopy is directly proportional to the length of time the unit is activated by the foot switch.
- Most fluoroscopy systems allow the operator to reduce the field size through the use of lead shutters or collimators.
- Extensive use of fluoroscopy can induce severe skin damage, even under the most favorable geometries.
- www.imagegently.org and www.imagewisely.org are resources for everyone to learn how to reduce radiation dose.
- Any questions about dose should be directed to Mark Perna, our Radiation Safety Officer.