

AbstractID: 9790 Title: Personnel Protection During Fluoroscopic Procedures

Medical physicists have several roles in the management of personnel radiation exposure during fluoroscopic procedures. They may assist with the design of fluoroscopic procedure rooms, including equipment and control area placement, structural shielding specification and movable shielding device selection. They commonly are involved with fluoroscopic equipment purchase selection and system optimization, which includes evaluation of radiation exposure parameters. They may be asked to investigate instances of higher than expected personnel exposure levels and make specific recommendations for dose reduction. Most directly, they may be called on to provide radiation safety training to fluoroscopic system operators (radiologists, cardiologists, urologists, anesthesiologists, surgeons, ...) or other personnel exposed to stray radiation (radiologic technologists, nurses, nurse anesthetists, ...) from a range of equipment types (angiography systems, mobile C-arms, overtable tube and undertable tube R/F units, uroscopes, radiation therapy simulators, mini C-arms, ...) and procedure types (cardiac catheterization, interventional radiology, operating rooms, pain management, GI, GU, therapy simulation, extremity imaging, ...). This presentation will review information medical physicists need to know in order to competently complete these tasks. Specific objectives of this presentation include discussion of the following questions:

1. What is the nature of stray radiation produced during a fluoroscopic procedure?
 - what is the radiation source?
 - what is the radiation distribution?
 - what are typical radiation levels?
2. What can be done to reduce occupational exposure during fluoroscopy?
 - by operators?
 - by other assisting personnel?
 - by medical physicists?
3. What are the regulations and requirements related to radiation exposure of personnel?