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CardioVascular and Interventional Radiology

Volume 37, Issue 2, April 2014, Pages 289-298

Management of patient and staff radiation dose in interventional radiology: Current concepts (Review)

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Abstract

The increasing complexity and numbers of interventional fluoroscopy procedures have led to increasing patient doses of radiation and to increasing concern over staff doses. Hybrid rooms incorporate multiple imaging modalities and are used by multidisciplinary teams in interventional fluoroscopy suites and operating theaters. These rooms present additional radiation protection challenges. The new low annual exposure limit for the lens of the eye also requires specific measures to prevent cataracts in operators. The traditional attitude of radiation protection must be changed to one of proactive management of radiation dose and image quality. Incorporation of a comprehensive dose management program into the departmental quality assurance program is now essential. Physicians, radiographers, and medical physicists play an essential role in the safe use of fluoroscopy in medical practice. Efficient use of all imaging modalities (e.g., fluoroscopy, digital subtraction angiography, cone-beam CT) requires knowledge of the effects of different equipment settings on patient and staff doses as well as the skill and competence to optimize these settings for each procedure and patient. Updates and recommendations on radiation protection and dose management programs, including aspects of education and training, are presented. © 2013 Springer Science+Business Media and the Cardiovascular and Interventional Radiological Society of Europe (CIRSE).

Author keywords

Dosimetry; Radiation; Radiation protection

Indexed keywords

EMTREE medical terms: brain tumor; cataract; competence; cone beam computed tomography; diagnostic imaging; digital subtraction angiography; dosimetry; education; fluoroscopy; hospital personnel; human; hybrid; image quality; imaging; interventional radiology; lens; medical practice; medical staff; operating room; patient care; physician; pregnant woman; priority journal; quality control; radiation dose; radiation protection; review; safety; simulation; simulator; skill; training; virtual reality; female; interventional radiology; male; occupational exposure; occupational health; patient safety; prevention and control; procedures; radiation dose; Radiation Injuries; radiation monitoring; radiation response; radiometry; total quality management

MeSH: Dose-Response Relationship, Radiation; Female; Humans; Male; Occupational Exposure; Occupational Health; Patient Safety; Quality Improvement; Radiation Dosage; Radiation Injuries; Radiation Monitoring; Radiation Protection; Radiography, Interventional; Radiometry

Medline is the source for the MeSH terms of this document.

ISSN: 01741551 **CODEN:** CARAD **Source Type:** Journal **Original language:** English

DOI: 10.1007/s00270-013-0685-0 **PubMed ID:** 23860936 **Document Type:** Review

Publisher: Springer New York LLC