Guideline Implementation: Radiation Safety 1.4 CE www.aorn.org/CE

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Purpose/Goal

To provide the learner with knowledge specific to implementing the updated AORN "Guideline for radiation safety."

Objectives

1. Identify topics that should be addressed in policies and procedures as part of a radiation safety program.
2. Identify the principles to observe to keep radiation exposure as low as reasonably achievable (ALARA).
3. Describe measures for minimizing patients' and health care providers' exposure to radiation.
4. Discuss proper care of protective devices.
5. Describe additional precautions for patients or personnel who are pregnant and will be exposed to radiation.

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Jennifer L. Fencl, DNP, RN, CNS-BC, CNOR, has no declared affiliation that could be perceived as posing a potential conflict of interest in the publication of this article.

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ABSTRACT

Because radiologic technology is used in a variety of perioperative procedures and settings, it is essential for perioperative RNs to be knowledgeable of the risks related to radiation and the ways to adequately protect patients and health care providers from unintended radiation exposure. The updated AORN "Guideline for radiation safety" provides guidance on preventing injury from ionizing radiation exposure during therapeutic, diagnostic, and interventional procedures. This article focuses on key points of the guideline to help perioperative personnel practice radiation safety. The key points address the requirements for an organization's radiation safety program, measures used to keep radiation exposure as low as reasonably achievable, proper handling and testing of radiation protection devices, and considerations for protecting employees and patients who are pregnant and who will be exposed to radiation. Perioperative RNs should review the complete guideline for additional information and for guidance when writing and updating policies and procedures. *AORN J 102 (December 2015) 630-636. © AORN, Inc, 2015. http://dx.doi.org/10.1016/j.aorn.2015.10.010*

Key words: *radiation safety, ALARA, radiation exposure, personal protective equipment, radiologic technology.*

Wilhelm Conrad Roentgen, a German physicist, discovered the basic radiologic properties in 1895[1,2]; today, radiation technologies can be found in virtually all perioperative specialties and in a variety of settings (eg, ORs, ambulatory settings, physician's offices, catheterization laboratories, endoscopy suites).[1,3] Radiologic technologies can provide many benefits during a surgical procedure; these include direct imaging of a patient's anatomy to confirm diagnoses or to locate lesions or malformations, the ability to see movement in real time, confirmation of the progression of surgery, and assistance in accurately placing instrumentation.[4] However, use of radiation is not without risk of consequences that can potentially affect both patients and perioperative team members.[1] These consequences range from swelling and erythema to cancer and genetic effects.[1] Adding to the risk is that radiation itself cannot be seen, felt, or smelled. Therefore, understanding the risks inherent in using radiation technologies during a surgical procedure and knowing how to adequately protect patients and health care providers from unintended radiation exposure is critical to safe practice.[1,4-11]

The updated AORN "Guideline for radiation safety"[12] (formerly titled "Guideline for reducing radiological exposure") was published in June 2015. AORN guideline documents provide guidance based on an evaluation of the strength and quality of the available evidence for a specific subject. The guidelines apply to inpatient and ambulatory settings and are adaptable to all areas where operative and other invasive procedures may be performed.

Topics addressed in the radiation safety guideline include measures that should be a part of an organization's radiation safety program: keeping radiation exposure as low as reasonably achievable (ALARA) for patients and health care workers, considerations for pregnant employees and pregnant patients who will be exposed to radiologic technologies, proper handling

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