

NSRT Conference – 2019

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Title: Shielding in CT – An Update for 2019

This lecture begins with an overview of the current state of overall dose reduction initiatives in computed tomography (CT). The current controversies regarding CT dose will be outlined. The primary focus will be the use of shielding during CT to reduce patient dose. The benefits and proper utilization of lead-equivalent shielding will be reviewed. The ongoing controversy regarding the proper use of bismuth in-plane shielding will also be discussed, including literature-supported best practices for the continued use of bismuth shielding. Participants will learn how to improve their utilization of shielding for appropriate CT examinations in their own practice.

Objectives

Upon completion of this session the attendee will be able to:

1. Contextualize the current controversies regarding the utilization of computed tomography (CT) examinations and the associated radiation dose/risk for patients.
2. Outline the current standards, regulations, guidelines, practices and technologies designed to minimize patient radiation dose during CT.
3. Discuss the current concepts and controversies regarding the efficacy of patient shielding during CT procedures.
4. Differentiate the literature-supported advantages and disadvantages for in-plane bismuth and out-of-plane lead-equivalent shielding during CT.
5. Apply best practices for appropriate shielding utilization during various CT procedures and in accordance with their dose reduction technologies.

Outline

- A. CT Utilization & Dose
 - 1) Latest US statistics on CT utilization
 - 2) Per capita radiation dose from CT
 - 3) Media coverage of CT dose & risk issues
- B. Our Profession's Response
 - 1) Image Gently, Image Wisely & Choosing Wisely
 - 2) NEMA Standard XR-29
 - 3) Vendor-based technologic advances
- C. Shielding in CT
 - 1) Practice Standards
 - 2) ASRT CT Radiation Survey
 - 3) Empirical support and best practices for lead (Pb) shielding
 - 4) AAPM position on bismuth shielding
 - 5) Empirical support and best practices for bismuth shielding