

AbstractID: 12066 Title: Adapting Traditional Clinical Medical Physics to Digital Radiography

Development of standards for performance verification of digital radiographic systems has been outpaced by commercialization of the technology. Practitioners, operators, vendors, and medical physicists are uncertain as to how to configure, calibrate, and verify systems for the best diagnostic quality images at the lowest practical radiation exposure to the patient. Several manufacturers have fielded commercial systems for performance verification, but long term data indicating trends and action limits is rare. Sources of definitive information on practical clinical methods are also scarce in the scientific literature. This has led to the current situation where clinical imaging operations are routinely conducted using systems that are not optimized.

This workshop will discuss four important aspects of traditional medical physics practice that are modified when dealing with DR systems. These processes are of primary importance to medical physicists, because they affect both the quality of DR images and the ionizing radiation dose to patients. First, we consider how to perform an inspection on a radiographic unit using CR or DR. Second, we discuss how to set up the AEC for CR or DR exams. Third, we address how to verify the exposure indicator for CR and DR. Finally, we discuss available phantoms and their characteristics and limitations when used with DR.

Educational Objectives:

1. Understand how some conventional tests should be modified for a digital radiographic system that is integrated into an electronic image management system.
2. Identify key references and standards that can be useful in testing of DR.
3. Appreciate opportunities for improvement of testing of DR systems.