

## GLANDULAR DOSE AND IMAGE QUALITY IN DIGITAL MAMMOGRAPHY PERFORMED WITH CR IN BRAZIL

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### Abstract

To date, the most effective method for early detection of breast cancer has been x-ray mammography for which the screen/film (SF) technique has been the gold standard. However, even though SF combinations have been improved and optimized over the years for breast imaging, there are some critical limitations, including a narrow exposure range, image artifacts, film processing problems, and inflexibility in image processing and film management. In recent years, digital mammography has been introduced in cancer screening programs with the screen/film techniques gradually being phased out. Computed radiography (CR), also commonly known as photo stimulable phosphor (PSP) imaging or storage phosphor, employs reusable imaging plates and associated hardware and software to acquire and to display digital projection radiographs. In this work, image quality and average glandular dose (AGD) was evaluated with computed radiography systems for mammography. The image quality control was performing through visual analysis from phantom CDMAM 3.4 imaging. The phantom was positioned between PMMA plates each one with 20 mm of thickness and placed on the bucky for exposures. AGD measurements were performed by exposures of PMMA plates in the thickness range from 20 to 70 mm (steps of 10 mm), using the automatic exposure control (AEC) settings. These factors were recorded. The image quality visual evaluation of CDMAM phantom showed that 53 percent of the facilities were able to produce images of excellent quality. The average glandular doses, which patients may be getting to perform an examination, were below the action levels recommended by the European Guidelines for Quality Assurance in Mammography Screening and Diagnosis..

**Keywords:** breast cancer, Computed radiography, image quality, digital mammography

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