Abstract Medical imaging procedures such as X-ray scans and computerized tomography scans are of great significance to the healthcare system since they aid physicians in diagnosing many medical conditions.Digital Radiography An imaging system that uses a digital detector rather than film to produce an image.In some radiographic procedures, technologists may rely on the use of electronic cropping after the image is acquired, rather than adjusting the beam before the exposure.Chapter 1: Introduction Statement of the Problem Inappropriate collimation techniques used during radiographic procedures may result in excessive patient doses due to radiation exposure.Background and Justification Radiation protection is an essential element of medical imaging since repeated exposure to radiation can lead to increased risk of health complications over time.Therefore, collimation is essential since it reduces the unnecessary radiation dose while producing quality images.This may result in the exposure of areas of the patient's body that are not essential for the diagnosis, as well as increasing the dose of the patient (Esmaeilian et al., 2024).The Research Problem The research problem of the study is the use of inappropriate collimation techniques, which may result in increasing the dose of the patient without improving the quality of the image acquired during digital radiography.Research has also shown that it is possible to optimize the imaging process to minimize the amount of radiation while improving the quality of the images (Mialkowskyj et al., 2026).maintaining the quality of the image produced..

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