

Estimation of Adult Patient Doses for Chest X-Ray Diagnostic Examinations in a Tertiary Institution Health Centre

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Abstract : This study is on the estimation of adult patient doses for Chest X-ray diagnostic examinations of new admitted undergraduate students attending a tertiary institution health centre as part of their routine clearance and check up on admitted into the institution. A total of 531 newly admitted undergraduate students were recruited for this survey in the first quarter of 2016 (January to March, 2016). CALDOSE_X 5.0 software was used to compute the Entrance Surface Dose (ESD) and Effective Dose (ED); while the Statistical Package for Social Sciences (SPSS) version 21.0 was used to carry out the statistical analyses. The basic patients' data and exposure parameters required for the software are age, sex, examination type, projection posture, tube potential and current-time product. The mean Entrance Surface Dose and Effective Doses of the undergraduate students were calculated using the software, and the values were compared with existing literature and internationally established diagnostic reference levels. The mean ESD calculated is 0.29 mGy, and the mean effective dose is 0.04 mSv. The values of ESD and ED obtained are below the internationally established diagnostic reference levels, which could be attributed to good radiographic techniques employed during the chest X-ray procedure for these students.

Keywords : x-ray, dose, examination, chest

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