

PROPOSED PRELIMINARY DIAGNOSTIC REFERENCE LEVELS FOR THREE COMMON INTERVENTIONAL CARDIOLOGY PROCEDURES IN IRELAND

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Interventional cardiology (IC) procedures are responsible for some of the highest recorded patient doses, with physical manifestation of deterministic effects being reported on patients who have undergone these procedures. This study has gathered data from across Ireland to determine the range of radiation doses received during IC investigations.

Radiation doses for 3 common types of IC examinations were investigated: coronary angiography (CA), percutaneous coronary intervention (PCI) and pacemaker insertions (PPI). 22 cardiac imaging suites participated in the study. Radiation dose was monitored for 1804 adult patients using dose area product (DAP) meters. Operational and examination details such as cardiologist grade, patient details and examination complexity were recorded for each examination.

Both intra and inter-hospital variations were demonstrated by the results. Individual patient DAP values ranged from 136-23 101 cGycm², 475-41 038 cGycm² and 45- 17 192 cGycm² for CA, PCI and PPI respectively, with third quartile values of 4 654 cGycm², 10 650 cGycm² and 1 686 cGycm². Screening times varied from 0.22-27.6 min, 1.8-98 min and 0.33-54.5 min for CA, PCI and PPI respectively.

The importance of optimising radiation dose, whilst not compromising diagnostic efficacy is clear. Whilst setting reference levels for these complex procedures has some difficulties, it is important that some guideline values are available as a benchmark to guide the operators during these potentially high dose procedures. The third quartile values described above may offer such guidance.

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