

Image Optimisation Teams

Why?

UK law requires medical radiation exposures for patients to be justified (they should provide sufficient benefit to the exposed individual to outweigh the potential risk of the use of the radiation) and optimised, with procedures and techniques in place to keep radiation exposures as low as reasonably practical.

An integrated radiation safety culture and consistent approach to patient dose management within radiology and radiation oncology teams are needed to ensure that neither image quality nor safety of the patient are compromised. Having these in place can lead to better diagnosis, more accurate treatment and better clinical outcomes for the patient.

Who?

It is recommended that all ionising radiation imaging services develop a multidisciplinary approach to radiation safety, by means of Image Optimisation Teams (IOTs). These should include (as a minimum) radiologists, radiographers and medical physics staff. All of these staff groups are required, since no individual group can optimise the exposures without the input from the others. Physics staff, for example, will have expertise in the appropriate adjustment of exposure factors, but not in the image quality requirements. It may also be beneficial to include other groups, such as manufacturers or governance groups; this should be determined locally.

What?

The Terms of Reference for the IOT must be agreed by all stakeholders, so that each one is aware of the purpose and aims of the team, and of the commitment and level of input that is required from them. It is essential that there is management 'buy-in' so that sufficient resources can be appointed to carrying out the optimisation work, rather than simply attending meetings. It should also be made clear who the IOT reports to within the organisation, and who is responsible for authorising changes, such as changes to protocols or exposure techniques.

Where?

Image Optimisation Teams were first suggested in the 16th COMARE report [1] in relation to CT doses, but it is now widely accepted that they should be in place for all patient imaging services involving ionising radiation.

When?

Optimisation work will be continuous, but IOTs should meet at a frequency that allows for meaningful discussion on findings from the analysis of the data. This should be agreed locally.

[1] Committee on Medical Aspects of Radiation in the Environment (COMARE). Sixteenth Report. Patient radiation dose issues resulting from the use of CT in the UK

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