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Dosimetry in Diagnostic Radiology
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Are accreditation bodies interested in diagnostic radiology dosimetry?

Wilkins H, ……. .. ……

Background. The best known UK accreditation scheme in the diagnostic radiology field is the Imaging Services Accreditation Scheme (ISAS)[1], managed and delivered by the United Kingdom Accreditation Services (UKAS)[6]. UKAS, the UK's national accreditation body, is also currently developing accreditation of Medical Physics and Clinical Engineering (MPACE) services, against the published British Standard BS 70000, *Medical physics, clinical engineering and associated scientific services in healthcare – Requirements for quality, safety and competence*[4].

UKAS accredits medical imaging services against the ISAS standard, which assesses services against five domains, including 'Safety' (SA). Standard SA1 states that: *The service implements and monitors systems to manage risks associated with ionising radiation.* This is augmented by a criterion requiring that systems are in place to ensure that radiation doses to patients are as low as reasonably practicable[2]. The scope of the ISAS standard states that *no service can be accredited if it fails to meet all applicable statutory* requirements[3].

IRMER requires employers to provide relevant diagnostic reference levels, and operators and practitioners to ensure that doses arising from diagnostic medical exposures to ionising radiation are kept as low as reasonably practicable consistent with the intended purpose[5].

Methods. Radiation dose audits in an NHS foundation trust had shown that doses to patients undergoing common diagnostic x-ray procedures in the Medical Imaging and Cardiology departments were substantially higher than relevant national DRLs. The trust's RPA and most senior MPE had drawn attention to this non-compliance with IRMER requirements and was seeking to implement a dose management system to: improve the auditing system, simplify derivation of local DRLs, facilitate provision of data to national dose surveys, and improve optimisation. Managers were however resistant to his warnings that evidence showed that the trust was non-compliant with IRMER. Knowing that the Medical Imaging service was undergoing assessment with a view to ISAS accreditation he assumed that accreditation would be withheld in the light of clear evidence that doses to patients from common diagnostic radiology procedures were higher than relevant national benchmarks.

Results. To the astonishment of the trust's RPA and lead MPE the Medical Imaging department was awarded ISAS accreditation, despite this clear evidence of non-compliance with a fundamental IRMER requirement.

Discussion. Trust managers argued that ISAS accreditation indicates participation in a quality improvement process, rather than an indication that an absolute standard has been met. This interpretation is not shared by the RPA / lead MPE, whose credibility was called into question - he is no longer employed by the trust. He has asked UKAS why they awarded accreditation in the light of evidence of IRMER non-compliance and has been asked to make a formal complaint.

Conclusion. ISAS accreditation of the Medical Imaging department has had a number of profound consequences which continue to reverberate. Dosimetry in diagnostic radiology is a complex subject, and it is important that accreditation bodies, and trust managers, recognize the need for expert advice to ensure that patients consistently receive high quality services.

Key references.

1. Imaging Services Accreditation Scheme (ISAS) https://www.isas-uk.org/default.shtml
2. ISAS criterion SA1C2
3. ISAS Standard v 2.1, January 2013; v3.0, 2017
4. Medical Physics and Clinical Engineering (MPACE) http://www.ukas.com/services/technical-services/development-of-new-areas-of-accreditation/current-pilot-projects/medical-physics-and-clinical-engineering-mpace/
5. The Ionising Radiation (Medical Exposure) Regulations 2017, S.I. 2017/1322
6. United Kingdom Accreditation Service (UKAS) https://www.ukas.com/