Radiation Safety

Clinical Evaluation

Clinical evaluation in imaging is the systematic and thorough assessment of diagnostic images in the context of a patient's clinical history and examination. It ensures that imaging procedures are accurately interpreted, supporting effective diagnosis and safe patient care. The requirement for clinical evaluation is mandated by the Ionising Radiation (Medical Exposure) Regulations 2017 (IR(ME)R 2017)[1] and supported by guidelines[2-3] from UK radiological societies, emphasising its role in upholding high radiological standards. Clinical evaluation includes formal assessments by radiologists and radiographers in imaging departments, as well as clinical evaluations by trained healthcare professionals outside of radiology. These professionals may conduct clinical evaluations either independently or before the formal radiology report, such as clinicians on the ward or in the emergency department.

This advice sheet is for healthcare organisations, clinical departments, and administrative personnel responsible for implementing and maintaining image clinical evaluation practices. Organisations are advised to follow the following recommendations to ensure effective provision.

Establish Clear Procedures

Develop comprehensive, written policies and procedures for clinical evaluation that are easily accessible and user-friendly for all staff. These documents should detail every step of the evaluation process and be regularly reviewed and updated to reflect current best practices and regulatory requirements.

Define Roles and Responsibilities

Clearly delineate the responsibilities of all duty holders involved in clinical evaluation. This includes outlining routine tasks and specifying contingency measures for situations when procedures do not proceed as planned. By explicitly defining who is responsible for each aspect of the clinical evaluation process, organisations can maintain accountability and ensure swift corrective action.

Implement a Robust Entitlement Process

Establish a thorough entitlement process to confirm that only individuals who are properly entitled, trained, and competent are allowed to perform clinical evaluations. This process should include formal training, competency assessments, and clearly defined duty volumes.

Maintain Training and Competency

Regularly assess and update the skills of all entitled IR(ME)R operators in clinical evaluation to ensure they remain within their defined scope of practice. This involves scheduled refresher courses, continuous professional development, and routine continuous competency evaluations. Keeping detailed records of each IR(ME)R operator's qualifications and training history is essential for ongoing compliance and quality assurance, in line with IR(ME)R 2017.

Documenting Evaluation

Implement a robust system for accurately documenting clinical evaluations, including all relevant details such as exposure factors, the location of evaluation, and the identity of the performer. Comprehensive record-keeping of clinical evaluation facilitates effective audits, supports quality assurance efforts, and ensures that the organisation can demonstrate compliance with regulatory standards.

Ensure Access to Previous Imaging

Develop clinical evaluation procedures ensuring all duty holders have efficient access to and review of prior imaging studies, enhancing diagnostic accuracy and supporting well-informed clinical decisions.

Manage Unexpected Findings

Develop a clear process for the prompt identification and communication of urgent or unexpected findings. This process should include escalation pathways and detailed documentation to ensure that referring clinicians are immediately informed, enabling rapid and appropriate patient management[4].

Manage Organisation Changes

Ensure processes are in place to mitigate the risks of failure to act by the IR(ME)R referrer on the resultant clinical evaluation for both acknowledgment and clinical management handover, as identified in the Academy of Medical Royal Colleges 'Alerts and notification of imaging reports recommendations' (2022)[5]. Processes should ensure continuity of care and address issues such as departure from post, annual leave, and sickness absences of IR(ME)R referrers.

Undertake Quality Management

Perform routine audits and evaluations to assess compliance with regulatory requirements (training, entitlement, and established procedures) and identify discrepancies in clinical evaluation practices. These quality management practices help organisations detect areas for improvement, ensure adherence to policies, and support continuous quality improvement.

Integrate the use of AI in Clinical Evaluation Responsibly

Explore the use of artificial intelligence (AI) and digital tools to support clinical evaluation. However, it is essential to recognise that AI serves only as an aid and should not replace human judgment. Organisations must maintain human oversight to ensure that final clinical decisions are guided by experienced professionals, in line with emerging radiological recommendations[6]. Furthermore, when clinical departments outside of radiology consider implementing AI for clinical evaluation, they should do so in consultation with local radiology departments.

Collaborate Across Organisational Departments

Encourage open communication and collaboration between radiology and other departments to ensure that clinical evaluations are consistently performed to high standards, even outside the traditional radiology settings. A multidisciplinary approach supports a cohesive healthcare delivery system.

[1] Gov.uk, 'The Ionising Radiation (Medical Exposure) Regulations 2017' (Legislation.gov.uk2017) https://www.legislation.gov.uk/uksi/2017/1322

[2] The Royal College of Radiologists, 'IR(ME)R Implications for Clinical Practice in Diagnostic Imaging, Interventional Radiology and Diagnostic Nuclear Medicine' (2020) https://www.rcr.ac.uk/media/mmab2tga/rcr-publications_ir-me-r-implications-for-clinical-practice-in-diagnostic-imaging-interventional-radiology-and-diagnostic-nuclear-medicine_june-2020.pdf

[3] Society of Radiographers, 'Radiographer Primary Clinical Evaluation, Second Edition | the Society of Radiographers (2024) https://www.sor.org/learning-advice/professional-body-guidance-and-publications/documents-and-publications/policy-guidance-document-library/radiographer-preliminary-clinical-evaluation/preliminary-clinical-evaluation-and-clinical-repor

[4] Royal College of Radiologists, 'Standards for Interpretation and Reporting of Imaging Investigations, Second Edition | the Royal College of Radiologists' (*www.rcr.ac.uk*) https://www.rcr.ac.uk/our-services/all-our-publications/clinical-radiology-publications/standards-for-interpretation-and-reporting-of-imaging-investigations-second-edition/

[5] Academy of Medical Royal Colleges, 'Recommendations on Alerts and Notification of Imaging Reports | the Royal College of Radiologists' (www.rcr.ac.ukOctober 2022) https://www.rcr.ac.uk/our-services/all-our-publications/clinical-radiology-publications/recommendations-on-alerts-and-notification-of-imaging-reports/

[6] Royal College of Radiologists, 'AI Deployment Fundamentals for Medical Imaging | the Royal College of Radiologists' (Rcr.ac.uk August 2024) https://www.rcr.ac.uk/our-services/all-our-publications/clinical-radiology-publications/ai-deployment-fundamentals-for-medical-imaging/

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