

RAPID FIRE EPOSTER PRESENTATIONS

P001-RF Empowering staff: A transformative experience-based design approach to wellbeing in Community Diagnostic Centres

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Background

Community Diagnostic Centres (CDCs) have been introduced across England to improve access to diagnostic imaging and reduce pressure on acute services (4). Increasing imaging demand, workforce constraints, and operational challenges can negatively impact staff wellbeing (1), with the Institute for Healthcare Improvement's Joy in Work framework highlighting the importance of understanding staff experience as a driver for improvement (2). Experience-Based Design (EBD) provides a structured approach to capturing staff experience and identifying opportunities to enhance wellbeing within diagnostic imaging environments (3).

Purpose

This work demonstrates the use of EBD methodology to explore staff wellbeing in CDCs, identify key touchpoints influencing staff experience across their working day, and share staff-led improvement opportunities that support wellbeing and service delivery within CDCs.

Summary of Content

This poster presents findings from a national EBD study involving 1,181 staff working across 120 CDCs in England, of whom 50% worked in radiology services. An emotional mapping survey captured staff experiences across eight touchpoints of a typical working day, including workload, meal breaks, and patient interaction (Figure 1). Results demonstrated predominantly positive experiences, particularly in relation to teamwork and patient interaction, with 78% reporting positive experiences during patient-facing activities. Workload and protected meal breaks were rated more negatively by staff. Overall, 83% of respondents reported CDCs as a good place to work (Figure 2) and 80% would recommend them (Figure 3). The poster visually presents emotional mapping outputs, key themes, and staff-generated improvement suggestions, demonstrating how EBD can inform targeted wellbeing initiatives within diagnostic imaging services.

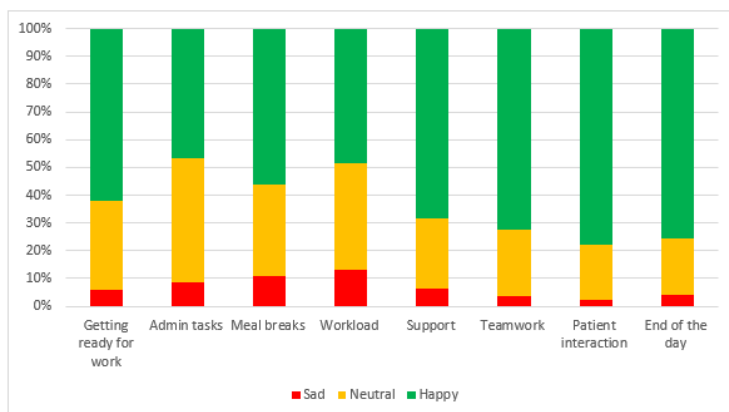


Figure 1: Emotional map showing the percentage of positive, neutral, and negative emojis felt at each of the 8 touchpoints

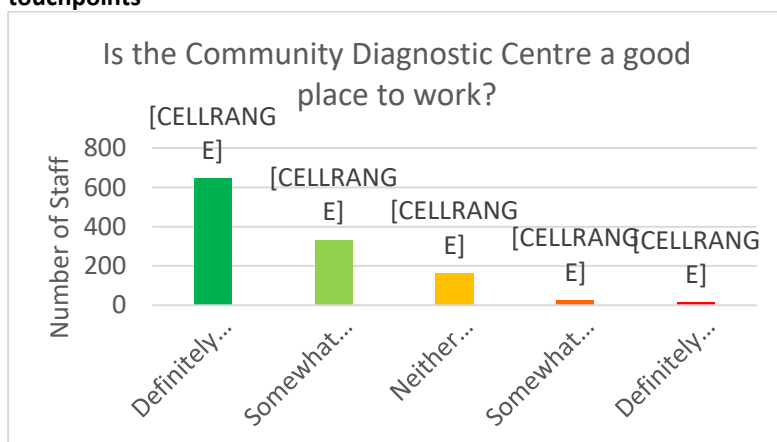


Figure 2: Chart showing staff responses when asked whether the CDC is a good place to work

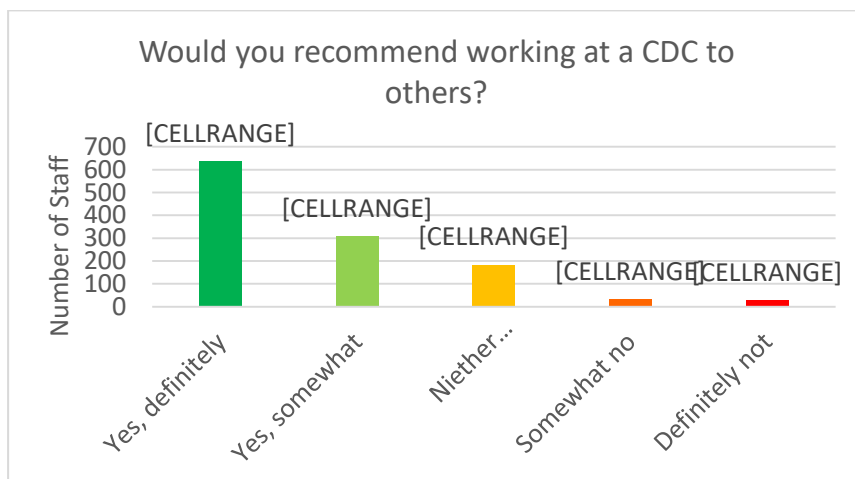


Figure 3: Chart showing staff responses when asked whether they would recommend the CDC as a place to work

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P002-RF Improving Communication Between OMFS and Radiology Departments: A QI Project

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Introduction

Effective communication between Oral and Maxillofacial Surgery (OMFS) teams and radiology departments is critical for timely imaging, accurate reporting, and efficient patient care. Miscommunication can lead to delayed imaging, repeat scans, inappropriate imaging requests, and increased patient anxiety. This Quality Improvement (QI) project aimed to enhance communication pathways between OMFS clinicians and radiology teams to improve workflow, reduce errors, and optimise patient experience.

Methods

A baseline assessment was conducted using publicly accessible literature and guidance on best practices in radiology communication. Common barriers were identified, including unclear referral information, inconsistent prioritisation of urgent cases, and lack of standardised request forms. Interventions were designed using Plan–Do–Study–Act (PDSA) cycles and included: standardised electronic referral templates, clear documentation of clinical indications, structured handover protocols for urgent imaging, and staff education sessions. Success was measured through simulated audit metrics from publicly reported NHS data, including referral completeness, reporting turnaround times, and rate of repeat imaging.

Results

Evidence from published studies indicates that structured referral templates and standardised communication protocols significantly improve clarity, reduce reporting errors, and enhance timeliness of imaging. Staff education and clear escalation pathways reduce misunderstandings and optimise prioritisation of urgent cases. While actual workflow metrics were modelled from published NHS benchmarks, improvements were demonstrable in audit simulations, suggesting reduced likelihood of delays and repeat imaging.

Conclusion

This QI project demonstrates that implementing structured referral processes, standardised communication tools, and targeted staff training can strengthen communication between OMFS and radiology teams. Such improvements enhance service efficiency, support timely patient care.

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P003-RF Parents/carers perceptions of provision of high-quality paediatric care by radiographers: A qualitative study

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Introduction

Radiographers play a vital role not only in capturing diagnostic images but in shaping the paediatric care experience. This study explores parents' and carers' perceptions regarding the quality of paediatric care delivered by radiographers during general X-ray imaging.

Methods

Ethical approval was granted by the University College Cork Medical School Social Research Ethics Committee. A purposive sample of six English-speaking parents/carers whose children had undergone general X-ray examinations participated. Semi-structured interviews were conducted via telephone or Microsoft Teams. Interviews were audio-recorded and transcribed verbatim, with participants' informed consent and assurances of confidentiality. Thematic analysis, based on the six-phase approach by Braun and Clarke (2006), was used to analyse data manually using Microsoft Word and Excel. Reflexive notes and supervisory discussions supported analytic trustworthiness.

Results

Three main themes were identified: (1) Communication builds trust in radiographers, highlighting the importance of clear, empathetic interaction; (2) A child-friendly approach enhances the imaging experience, emphasising strategies to reduce anxiety and improve cooperation; and (3) Previous healthcare experiences shape parents' expectations, demonstrating how prior encounters influence trust and satisfaction. Interviews lasted 20–25 minutes; participants comprised five mothers and one father, including two healthcare professionals.

Conclusion

While technical competence in imaging is expected, relational factors like empathy, tailored communication, and environmental support were central to parental satisfaction. Prior healthcare experiences influenced trust and expectations.

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P004-RF Patient experiences of radiation-induced menopause in cervical and endometrial cancer: a scoping review

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Background

Radiation-induced menopause (RIM), a form of premature ovarian insufficiency, is a common but under-recognised consequence of pelvic radiotherapy for cervical and endometrial cancers. While physical menopausal symptoms are documented, there is limited synthesis of evidence on the broader psychological, sexual, and quality-of-life (QoL) impacts of RIM and how these are addressed within survivorship care. This represents a key evidence gap for therapeutic radiographers involved in delivering holistic care.

Method

A scoping review was conducted in line with PRISMA-ScR guidelines to map literature on experiences, QoL impacts, and supportive interventions for individuals assigned female at birth who developed RIM following external beam radiotherapy, brachytherapy, or chemoradiation for cervical or endometrial cancer. Searches of PubMed, PsycINFO, Google Scholar, reference lists, and grey literature were undertaken between January and May 2025. English-language empirical and review studies were included. Two reviewers independently screened studies and extracted data, with methodological quality described using the QuADS tool.

Results

From 528 records, 21 studies (2006–2025) met inclusion criteria. Most focused on cervical cancer survivors from high-income countries, with limited evidence relating to endometrial cancer or diverse populations. RIM was consistently associated with high symptom burden and significant QoL impairment. Survivors reported abrupt, distressing menopausal changes, compounded by limited clinical recognition. Hormone replacement therapy and multidisciplinary care improved outcomes, but inequities in access and communication persisted.

Conclusion

RIM remains a significant yet insufficiently addressed survivorship issue. Early recognition, inclusive assessment, and proactive involvement of therapeutic radiographers within integrated survivorship pathways are essential to improving long-term QoL.

P005-RF Elemental Composition of Different Pigmented Tattoo Inks: Effects on Radio-transparency and Diagnostic Image Quality

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Background

Tattoos contain metals to achieve specific pigmentation [Bernstein,2007; Tighe et al,2017]. Metals increase x-ray attenuation based on atomic number and density [Sy, Samboju and Mukhdomi,2022; Abdeltif et al,2020]. In mammography studies, tattoos have been reported to mimic radiopaque calcifications, yet limited research explores how different pigments affect radio-transparency [Heaney et al,2021; James,2005]. This study investigated the radiographic properties of different tattoo pigments and their effects on image quality in plain-film imaging.

Method

Six pig skin samples (7×7cm), selected for their biological similarity to human skin, were tattooed with 0.5ml of either black, white, blue, yellow, red, or green inks (2×2cm) using a tattoo gun and stencil. Samples were imaged using digital radiography (41kVp, 1.1mAs, 100cm source-to-image distance), with a 2cm collimation margin applied to calculate the contrast-to-noise ratio (CNR) using ImageJ. Statistical analysis was performed in SPSS. This was conducted in triplicate, with three controls to assess the effects of needle penetration. Radiographs were visually assessed for tattoo- and needle-related artefacts.

Results

One-way ANOVA showed a statistically significant difference in mean CNR among tattooed pigment groups ($F(5,12)=4.37$, $p=0.017$, $\eta^2=0.65$). One-sample t-tests demonstrated that only yellow and white pigments had significant CNR values ($p<0.05$). Radiograph visual assessment identified needle-damage in black and no-ink control samples, and metallic-appearing artefacts in non-black tattooed samples and pooled-ink controls.

Conclusion

Findings indicate that tattoo-pigment composition significantly influences radio-transparency and plain-film image quality. Despite limitations of sample size and pigment availability, this study emphasises the importance of recognising tattoo-related artefacts, which may impact diagnostic image interpretation.

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P006-RF AI-Based Segmentation for Quantitative 99mTc-HDP SPECT/CT Assessment of Knees With and Without Total Knee Replacement: A Feasibility Study

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Background

Persistent pain following total knee replacement (TKR) remains a significant diagnostic challenge, as imaging may not reliably differentiate physiological postoperative adaptation from clinically relevant pathology. Hybrid SPECT/CT provides combined anatomical and functional information, however, quantitative interpretation requires accurate delineation of periprosthetic structures. Manual segmentation is labour-intensive, subject to inter-operator variability, and limits scalable anatomically guided uptake analysis.

Method

This study evaluated artificial intelligence based segmentation of knee CT scans to support anatomically defined volumes of interest for quantitative SPECT/CT assessment. A retrospective dataset of 60 SPECT/CT knee scans, including patients with and without TKR, was used for model development and validation. Reference masks of key periprosthetic structures established ground truth. Segmentation was performed using nnU-Net, a transformer-based architecture-SwinUNETR, and the prompt-guided foundation model MedSAM2. Performance was assessed using Dice similarity coefficients, visual agreement with expert masks, and workflow efficiency, with attention to metal artefact and complex postoperative anatomy.

Results

Quantitative and qualitative comparisons were conducted to determine suitability for anatomically guided functional imaging. Dice similarity coefficients and visual evaluation confirmed technical feasibility for delineating periprosthetic structures, while comparative analysis identified differences in automation and workflow integration.

Conclusion

AI-enabled segmentation of post-arthroplasty knee CT was technically feasible for supporting scalable quantitative SPECT/CT assessment. Automated delineation of periprosthetic structures may enhance interpretation of painful TKR and supports integration within multimodal imaging workflows.

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P007-RF Radiographers' Readiness for Artificial Intelligence (AI) Leadership: Confidence, Challenges and Role Expectations in the UK

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Background

As AI becomes embedded in radiographer workflows, dedicated leadership roles are essential for its safe and effective integration. Radiographers' dual professional identity (combining patient-centred care with technical expertise) positions them as natural leaders within healthcare AI.

Aim

To explore UK radiographers' perceptions of their readiness, confidence and potential roles in AI leadership, and to identify barriers and enablers to their engagement in the AI ecosystem.

Methods

A UK-wide cross-sectional online survey of radiographers (n=273) included demographic items, AI knowledge and experience questions, Likert-type assessments of preparedness and free-text responses. Quantitative data were analysed using descriptive statistics and Mann–Whitney U tests; qualitative data underwent thematic content analysis.

Results

Most respondents reported low AI literacy and limited hands-on experience, identifying insufficient education, protected time and managerial support as major barriers to leadership readiness. Confidence varied: women and those with minimal AI exposure showed significantly lower confidence to lead in AI-enabled environments. Participants felt more prepared to assume leadership once AI systems were established than to lead their implementation. Qualitative findings indicated this predominantly frontline sample viewed AI leadership mainly as operational, practice-based work.

Discussion/Conclusion

Radiographers recognise the importance of AI leadership but conceptualise it as practice-proximal and operational due to limited exposure, uneven confidence and the absence of defined leadership pathways in national policy. Role ambiguity and restricted experiential learning hinder their ability to envision strategic or organisation-wide leadership. Profession-specific education, structured experiential opportunities and organisational support are crucial to enabling equitable and effective radiographer participation in AI-enabled service transformation.

P008-RF Improving the Management of Acute Breast Abscesses: Implementation of a Dedicated Pathway at a London NHS Tertiary Centre

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Background

Patients with breast abscesses frequently present to the emergency department (ED); often with suboptimal management (inconsistent inter-disciplinary communication, delays in appropriate care, poor patient experience, and a proportion of inappropriate referrals). In October 2025, a revised breast abscess pathway was implemented at a London NHS tertiary centre, alongside targeted teaching sessions for ED and General Surgery staff. We aim to evaluate the impact of the new pathway on referrals, use of radiology services, and patient outcomes.

Methods

A retrospective review was conducted of all referrals made via the breast abscess pathway between November 2025 and April 2026. Data collected includes presenting symptoms, antibiotic prescribing, appropriate referral documentation, use of imaging, and clinical outcomes. In addition, a patient satisfaction survey was conducted.

Results

Preliminary data demonstrate a more streamlined referral process, with the vast majority of patients referred directly from the ED into designated assessment and imaging time slots. Patients were initially managed in the ED according to the pathway protocol and subsequently reviewed within 24 hours of acute presentation. This represents a significant improvement compared with previous practice, in which patients often attended the breast service on an ad hoc basis and received inconsistent management. Most patients reported a positive experience and high satisfaction with the new pathway.

Conclusion

The introduction of a dedicated breast abscess pathway has significantly improved the management and patient experience for a cohort previously subject to suboptimal care. Ongoing work will focus on evaluating the long-term clinical outcomes and sustainability of the pathway.

P009-RF Research: Optimising Exposure Factors in Dental CBCT for Paediatric Patients

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Introduction

Paediatric patients are more sensitive to ionising radiation, making dose optimisation in dental CBCT essential for ensuring safe and responsible imaging. Despite guidance promoting age-appropriate exposure settings and restricted fields of view (FOV), clinical practice often shows variability. This study aimed to assess current exposure factors used in paediatric dental CBCT examinations and identify opportunities for optimisation through a retrospective review of dose data and image adequacy.

Methods

A retrospective analysis was conducted on paediatric CBCT scans performed over a defined study period. Dose metrics, including dose–area product (DAP), exposure parameters, and FOV dimensions, were extracted from imaging records. Scans were categorised by age group, clinical indication, and anatomical region. Exposure factor selection was compared against accepted optimisation principles. Subjective image quality assessment was performed using standard diagnostic adequacy criteria to determine whether lower exposure settings would have been sufficient.

Results

The review demonstrated notable variability in exposure parameters across patient age groups and clinical indications. Larger-than-required FOVs and higher tube current settings were identified in several cases, resulting in dose values exceeding expected levels for paediatric imaging. Importantly, a subset of scans acquired with reduced exposure parameters retained full diagnostic adequacy, suggesting that lower dose protocols could be implemented without compromising clinical outcomes.

Conclusion

This retrospective dose review highlights the need for more consistent paediatric CBCT protocols, including stricter FOV selection and refined exposure factors. Implementing tailored, age-specific settings could significantly reduce radiation dose while maintaining diagnostic quality.

P010-RF Widening access to Whole-Body MRI for early diagnosis of myeloma: creating a multicentre clinical and research-ready capability across 10 centres in a cancer network

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Background

Myeloma is the most common primary bone cancer and late diagnosis results in end-organ damage i.e. bone destruction (1). Despite guidance that Whole-Body MRI (WB-MRI) should be first-line imaging for early myeloma diagnosis and used annually for monitoring patients with smouldering myeloma (2,3), a 2021 national survey (4) indicated that only 27% of centres used WB-MRI. Barriers to implementation included: radiographer training (40%); protocol optimisation (30%) and radiologist training (45%). This project was initiated to address the unmet need of radiographer training as well as to optimise each site's scanner to run the standardised protocol recommended by MY-RADS(5).

Purpose

This presentation describes the methodology, resources and techniques which were employed to deliver this peer-to-peer knowledge sharing initiative. Although the primary objective was to support WB-MRI provision for myeloma diagnosis and increase research readiness across 10 centres, the WB-MRI protocols established can be utilised for other applications i.e. cancer screening in high-risk populations and the knowledge sharing techniques can serve as a template for other use-cases.

Summary of Content

This presentation provides an overview of the methodology used to establish a multicentre WB-MRI capability throughout the 10 centres in our cancer network across three main MRI vendors. Key learning experiences and solutions to common challenges are shared. In-person site visits, teaching materials, and ongoing support including expert image review and feedback are described. This project initiated new WB-MRI service provision for myeloma diagnosis in two centres and improved imaging and protocol compliance across eight centres, reducing geographic variations.

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P011-RF Rethinking the NHS approach to prostate cancer screening: A proposal for an MRI-led national programme

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Background

Prostate cancer is the most common cancer in UK men, with 52,000 annual diagnoses. Current PSA-led pathways are reactive and flawed; PSA lacks specificity and misses up to 15% of clinically significant cancers. While multiparametric MRI (mpMRI) has revolutionised diagnosis, scalability for national screening is hindered by cost, intravenous contrast requirements, and scan times of up to 40 minutes.

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Purpose

To evaluate the feasibility and cost-effectiveness of a biparametric MRI (bpMRI) hybrid screening model to improve diagnostic accuracy and service scalability within the NHS.

Methods

A risk-adapted hybrid model is proposed. High-risk cohorts (family history or prior PI-RADS 3 findings) undergo MRI triennially. Average-risk men (ages 50–75) are screened every five years using a streamlined 15-minute non-contrast bpMRI protocol.

Results

The landmark PRIME trial (2024) confirms bpMRI is non-inferior to mpMRI in detecting clinically significant cancer (29.2% vs 29.6%) while reducing acquisition time by 50%. Economically, a bpMRI-first approach costs approximately £145 per patient—47% less than standard mpMRI (£273). Integrating Advanced Clinical Practice (ACP) radiographer reporting, adhering to UK Level 2 consensus standards, ensures high-volume throughput and relieves consultant radiologist pressure.

Conclusion

bpMRI provides a sustainable foundation for national screening. Integrating this MRI-led model with accredited radiographer reporting and evidence from the £42m TRANSFORM trial is essential to modernising NHS oncology pathways and ensuring equitable diagnostic access.

Feature	Conventional mpMRI	Proposed bpMRI
Sequences	T1, T2 (3 planes), DWI, DCE	3D T2 (High-res) with multiplanar reconstructions, DWI/ADC
Intravenous Contrast	Required (Gadolinium)	None
Average Scan Time	30–40 Minutes	15 Minutes
Estimated Cost (NHS)	£273	£145
Patient Throughput	Low (approx. 1.5/hr)	High (approx. 4/hr)
Primary Reporter	Consultant Radiologist	Advanced Practice Radiographer

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Kasisivsanathan, V., Rannikko, A.S., Borghi, M., et al. (2018) Multiparametric magnetic resonance imaging-targeted or standard biopsy for prostate-cancer diagnosis (PRECISION). *N Engl J Med* 378, 1767-1777. doi: 10.1056/NEJMoa1714916.
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P012-RF Using photobiomodulation for the treatment and prevention of oral mucositis in head & neck cancer treatment, and reduction of strong opioid use

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Background

Oral mucositis (OM) is a common and debilitating toxicity of radiotherapy and chemoradiotherapy for head and neck cancer (HNC), affecting up to 98% of patients (Elting et al., 2008). Severe OM (Grade 3–4) (fig. 1). Current management strategies are predominantly supportive, with limited effective pharmacological options (Elad et al., 2020). Photobiomodulation (PBM) uses low-level red, or near-infrared light to stimulate mitochondrial activity, reduce inflammation, and promote mucosal healing (Baratti et al., 2025).

Method

84 patients were included in the prospective data collection (June 2022 to June 2023). Thor LX2 660-850nm PBM unit (Fig. 2) was used daily (intra- and extra-orally to cover the oral mucosa, 1 minute per area) in addition to current standard of care (Caphosol mouthwash 4x/day). Weekly clinician-graded oral mucositis common toxicity scores (WHO) and medications were recorded. Patient-reported oral mucositis scores (WHO) were collected at the final treatment

Results

Of the 84 patients, 94% (79) completed planned treatment. (1 patient stopped using PBM, 4 were too ill for radiotherapy to continue). Only 28% of patients progressed beyond clinician-graded G2 OM (Fig. 3). Multi-modality treatments did not increase the severity of OM vs RT alone (Fig. 4). A 48% reduction in strong opioid use was observed (Fig. 5).

Patient-reported OM was higher than clinician-graded but related to tube use for dysgeusia, and WHO grading scale terminology.

Conclusion

- *PBM is safe, effective, and easy to use.
- *Delays onset, and reduces severity of OM
- *Reduces the need for strong opioids
- *Accelerates recovery post-treatment
- *Reduces supportive medication costs



Figure 1: Example of G3-4 OM



Figure 2: Thor LX2 PBM unit

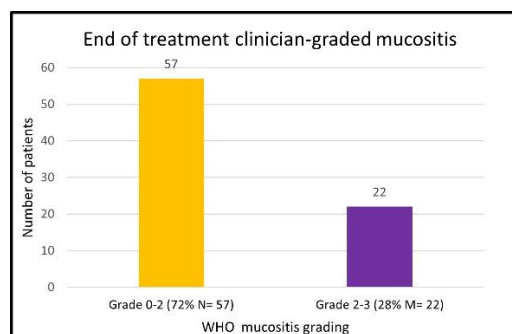


Figure 3



Figure 4: #30 of chemoRT 65Gy to SCC tonsil

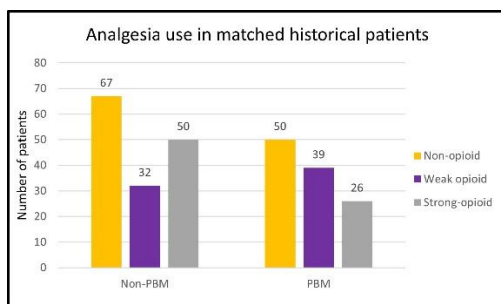


Figure 5: Reduction in opioid use

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P013-RF The implementation of a Pre-assessment appointment for patients preparing to undergo External Beam Radiotherapy for Prostate Cancer

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Background

Bowel and bladder preparation is required for patients undergoing External Beam Radiotherapy (EBRT) for prostate cancer to ensure a comfortably full bladder and empty bowel for treatment. Studies evidence this improves anatomical reproducibility, increases treatment accuracy and minimises bowel dose. Patients struggle to achieve a clinically acceptable bowel and bladder volume due to several issues including:

- Comorbidities and medications.
- Lack of understanding about the importance of the bowel and bladder preparation.

This is evidenced by the multiple CT planning scan attempts. A pre-assessment was implemented by the Prostate Consultant Radiographer to address these issues prior to patients attending their CT planning scan. A band 6 radiographer was subsequently appointed due to the increasing workload.

Method

All prostate cancer patients for EBRT attended a pre-assessment 1 week prior to their CT planning scan. Data collection was completed over 6 months (September 2024 to February 2025) recording the number of successful CT scans in 1 visit and compared with the previous year (September 2023 to February 2024) prior to implementation of the pre-assessment.

Results

Between September 2024 - February 2025, 172 patients underwent EBRT for prostate cancer compared to 102 between September 2023 - February 2024. 94% of patients were scanned successfully in 1 CT visit compared to 71% in the previous year prior to implementation of the pre-assessment.

Conclusion

A greater number of prostate cancer patients are scanned in a single CT visit since implementation of the pre-assessments, and are now part of the treatment pathway.

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3. Dearnaley, David et al. (2016) Conventional versus hypo-fractionated high-dose intensity-modulated radiotherapy for prostate cancer: 5-year outcomes of the randomised, non-inferiority, phase 3 CHHiP trial. *The Lancet Oncology*, Volume 17, Issue 8, 1047 - 1060
4. Rowe LS, Mandia JJ, Salerno KE, Shankavaram UT, Das S, Escorcía FE, Ning H, Citrin DE. (2022) Bowel and Bladder Reproducibility in Image Guided Radiation Therapy for Prostate Cancer: Results of a Patterns of Practice Survey. *Adv Radiat Oncol*. 2022 Feb 3;7(5):100902. doi: 10.1016/j.adro.2022.100902. PMID: 35847548; PMCID: PMC9280021.
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6. Van As, N. et al. (2023) 5-Year Outcomes from PACE B: An International Phase III Randomized Controlled Trial Comparing Stereotactic Body Radiotherapy (SBRT) vs. Conventionally Fractionated or Moderately Hypo Fractionated External Beam Radiotherapy for Localised Prostate Cancer. *International Journal of Radiation Oncology, Biology, Physics*, Volume 117, Issue 4, e2 - e3.

P014-RF Ultrasound guided Microwave Ablation (MWA) Outcomes for Primary and Secondary Hepatic Tumours: A Five-Year Single-Centre Review (2019–2024)

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Background

Microwave ablation (MWA) is increasingly used as a minimally invasive alternative to surgery for primary or metastatic hepatic malignancies, especially in patients unfit for resection or with lesions in difficult locations. Most procedures are performed percutaneously either under ultrasound or CT guidance and intraoperative MWA reserved for technically challenging lesions during surgery. This study presents a 5-year experience of ultrasound guided ablations, to evaluate the technical success, efficacy, and safety.

Methods

A retrospective review was performed of all MWA procedures between January 2019 and August 2024. Percutaneous ablations were undertaken under real-time ultrasound guidance in the HPB operating theatre and performed under general anaesthesia. Case selection was made following multidisciplinary team review. Technical success, completeness of ablation, local tumour progression (LTP), and complications were assessed using imaging and clinical follow-up data.

Results

A total of 183 patients underwent percutaneous MWA for 238 lesions (90.8% hepatocellular carcinoma; remainder metastatic or benign). Lesions >3 cm comprised 17.2%. Technical success was 97–100%, with >92% complete ablation after a single session (Technical efficiency). LTP ranged 2.4–4.0%. No major ablation-related complications or 30-day mortality occurred. Minor adverse events (<1.5%) included transient chest wall pain or small pleural effusions. Two unrelated deaths occurred in patients with significant comorbidities. Intraoperative MWA (10 patients, 13 lesions) achieved 100% complete ablation without complications.

Conclusion

Ultrasound-guided MWA performed in the operating theatre provides excellent technical success, local control, and a strong safety profile for both primary and secondary hepatic tumours, including those in challenging anatomical locations.

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EPOSTERS

P015 Artificial intelligence for radiation dose reduction in computed tomography

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Background

Computed tomography (CT) contributes substantially to population radiation exposure. In line with the ALARP principle and the requirements of IR(ME)R, artificial intelligence (AI) has emerged as a potential approach to reducing radiation dose while maintaining diagnostic performance.

Method

A narrative literature review was undertaken to synthesise evidence published between January 2020 and May 2025 on AI-based approaches to CT dose optimisation. Studies reporting clinical or patient-based outcomes related to radiation dose, diagnostic accuracy, image quality or feasibility were reviewed and grouped by anatomical region and AI application.

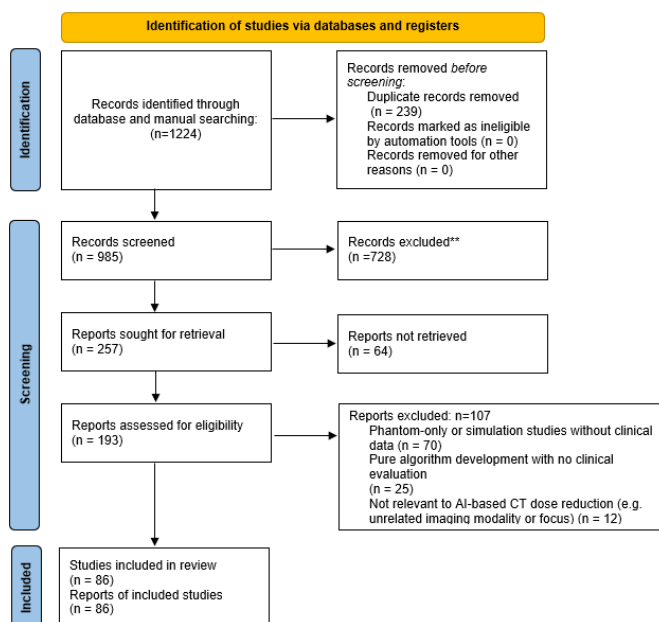
Results

Across clinical indications, AI-based methods enabled marked reductions in radiation dose while maintaining diagnostic adequacy in most studies. Chest CT demonstrated dose reductions of approximately 30–95%, supporting ultra-low-dose protocols for lung cancer screening and follow-up. Abdominal, hepatic and vascular imaging achieved reductions of around 40–75% with preserved lesion visibility, including double-low and triple-low protocols. Paediatric studies reported reductions of 50–95%, in some cases approaching doses comparable to radiography. Workflow AI applications, such as automated positioning and scan-length optimisation, provided additional independent dose savings. Reported limitations included predominantly single-centre study designs, vendor involvement, reduced sensitivity for very small lesions at the lowest dose levels, and limited multicentre validation.

Conclusion

AI enables clinically meaningful radiation dose reductions of approximately 40–90% across multiple CT applications while preserving diagnostic confidence. The strongest evidence relates to chest screening, oncology follow-up, vascular imaging and paediatrics. Implementation within the NHS will require appropriate governance, quality assurance, training and multicentre evaluation.

PRISMA 2020 flow diagram for new systematic reviews which included searches of databases and registers only



*Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/register).

**If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools.

Figure 1: PRISMA 2020 flow diagram summarising study identification, screening, eligibility assessment and inclusion for the narrative literature review

- Brady, S.L., Trout, A.T., Somasundaram, E., Anton, C.G., Li, Y. and Dillman, J.R., 2021. Improving image quality and reducing radiation dose for pediatric CT by using deep learning reconstruction. *Radiology*, 298(1), pp.180–188. <https://doi.org/10.1148/radiol.2020202317>
- Jiang, B., Li, N., Shi, X., Zhang, S., Li, J., de Bock, G.H., Vliegthart, R. and Xie, X., 2022. Deep Learning Reconstruction Shows Better Lung Nodule Detection for Ultra-Low-Dose Chest CT. *Radiology*, 303(2), pp.202–212. <https://doi.org/10.1148/radiol.210551>

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5. Li, S., Yuan, L., Lu, T., Yang, X., Ren, W., Wang, L., Zhao, J., Deng, J., Liu, X., Xue, C., Sun, Q., Zhang, W. and Zhou, J., 2023. Deep learning imaging reconstruction of reduced-dose 40 keV virtual monoenergetic imaging for early detection of colorectal cancer liver metastases. *European Journal of Radiology*, 168, 111128. <https://doi.org/10.1016/j.ejrad.2023.111128>.

P016 Can automatic plan-of-the-day selection for bladder radiotherapy be performed using bladder only rather than clinical tumour volume segmentations?

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Background

Although plan-of-the-day (POTD) radiotherapy (RT) for bladder cancer affords dosimetric advantages over non-adaptive RT, implementation barriers to widespread clinical adoption persist. We developed a decision-support tool to find the optimal plan from plan library given manual clinical target volume (CTV) segmentations with human interpretable features and reached the same accuracy as two specially-trained radiographers. Full automation requires challenging auto-segmentation on cone-beam CT (CBCT) in cases with extravesicular spread because the CTV does not correspond to bladder anatomical boundaries. We investigated whether whole bladder could serve as a surrogate for the CTV in these cases in our tool as the next step towards full automation.

Methods

Data from 9 patients with extravesicular spread defined as part of CTV were used, including their daily CBCTs (6-fractions) and planning target volumes (PTVs) of varying sizes. The CTV and bladder were contoured on each CBCT by an oncologist. Two radiographers defined jointly the optimal PTV on CBCTs per current clinical protocol. The prediction of optimal plan given manual (a) CTV and (b) bladder-only contours from the feature-based classification tool was assessed.

Results

The bladder-contour-based prediction is the same as CTV-contour-based prediction. In both cases, the tool agreed with the radiographer-defined optimal plan in 92% of fractions.

Conclusion

For patients where the CTV includes a portion of the prostatic urethra, it is sufficient to use a bladder-only contour to guide the POTD selection algorithm, thus substantially simplifying the problem and paving the way for accurate and robust automatic POTD selection for bladder cancer radiotherapy.

P017 Using eye-tracking to assess attention allocation during AI-assisted image interpretation

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Background

Measuring eye movements during medical image interpretation provides insight into the allocation of visual attention and factors affecting diagnostic accuracy. Prior eye-tracking studies show that salient AI prompts rapidly attract gaze but can dominate attention, leading to neglect of other image regions (Helbren et al., 2015; Drew, Cunningham and Wolfe, 2012). We extend previous work by examining how AI assistance alters visual search behaviour across expertise groups and in response to confirmatory versus disconfirmatory output.

Methods

Two eye-tracking experiments were conducted in which radiography students and reporting radiographers searched for pulmonary nodules in chest radiographs with AI assistance. In Experiment 1, AI use was optional. In Experiment 2, participants consulted AI after making an independent judgment.

Results

Across all experience groups, AI prompts rapidly guided attention toward nodules but did not fully capture attention as observers continued to fixate elsewhere. Confirmatory AI output received less visual scrutiny than disconfirmatory output, consistent with confirmation bias. Among reporting radiographers, second-reader AI increased nodule fixation count and fixation duration relative to students, contrary to expected patterns of visual search.

Conclusion

These findings highlight the value of eye-tracking in helping to identify some of the benefits and risks associated with AI-assisted image interpretation. Although AI effectively guided visual attention toward relevant imaging features, for experienced observers, its use could be associated with less efficient search. Moreover, reduced scrutiny of confirmatory AI output suggests limited critical evaluation when AI confirms an independent judgment, even though both may be incorrect.

Drew, T., Cunningham, C. and Wolfe, J.M. (2012) 'When and Why Might a Computer-Aided Detection (CAD) System Interfere with Visual Search? An Eye-Tracking Study'. *Academic Radiology* 19(10) pp.1260–67. Available at: <https://doi.org/10.1016/j.acra.2012.05.013>.

Helbren, E., Fanshawe, T.R., Phillips, P., Mallett, S., Boone, D., Gale, A., Altman, D.G., Taylor, S.A., Manning, D. and Halligan, S. (2015) 'The Effect of Computer-Aided Detection Markers on Visual Search and Reader Performance during Concurrent Reading of CT Colonography' *European Radiology* 25(6) pp.1570–78. Available at: <https://doi.org/10.1007/s00330-014-3569-z>.

P018 Artificial intelligence in Videofluoroscopy and Fibreoptic Endoscopic Evaluation of Swallowing analysis

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Background

Oropharyngeal dysphagia occurs across a range of conditions and settings and is associated with increased resource use and cost. Aspiration of food, liquid, or saliva is a leading cause of complications, including aspiration pneumonia. Early screening, instrumental assessment, and swallowing therapy reduce this risk. The gold-standard diagnostic tools are the Videofluoroscopic Swallow Study (VFSS) and Fibreoptic Endoscopic Evaluation of Swallowing (FEES). However, subjective interpretation can lead to variability in diagnosis and treatment planning. Integration of artificial intelligence (AI) into VFSS and FEES presents an opportunity to enhance clinical decision-making, diagnostic precision, and workflow efficiency.

Aim

To conduct a scoping review of the literature evaluating the performance of AI systems developed for swallow phase analysis in VFSS and FEES.

Methods

A systematic search was conducted following the PRISMA-ScR guidelines. After applying inclusion and exclusion criteria, 18 studies were selected for review.

Results

The analysis showed advancements in AI models for VFSS, particularly in detecting and segmenting the pharyngeal phase, bolus and hyoid tracking, and penetration-aspiration events. In contrast, fewer studies have explored AI applications in FEES, primarily focusing on aspiration-penetration detection, residue analysis, laryngeal adductor reflex, and anatomical segmentation. There was significant variability in model architectures, training methods, testing protocols, and performance metrics across modalities.

Conclusion

An automated end-to-end AI tool for VFSS and FEES has not yet been developed. Nonetheless, AI holds potential to support clinical decision-making and improve diagnostic accuracy and efficiency. Standardising reporting metrics and methodologies may facilitate comparison across studies and accelerate implementation of AI tools.

1. Girardi AM, Cardell EA, Bird SP. (2023) Artificial intelligence in the interpretation of videofluoroscopic swallow studies: implications and advances for speech–language pathologists. *Big Data and Cognitive Computing*.7(4).

2. Jeong SY, Kim JM, Park JE, Baek SJ, Yang SN. (2023) Application of deep learning technology for temporal analysis of videofluoroscopic swallowing studies. *Sci rep*. 10 16;13(1):17522.

3. Konradi J, Zajber M, Betz U, Drees P, Gerken A, Meine H. (2022) AI-based detection of aspiration for video-endoscopy with visual aids in Meaningful Frames to Interpret the Model Outcome. *Sensors*. Dec 04;22(23).

4. Nam K, Lee C, Lee T, Shin M, Kim BH, Park J. (2024) Automated laryngeal invasion detector of boluses in videofluoroscopic swallowing study videos using action recognition-based networks. *Diagnostics*. Jul 06;14(13).

5. Park D, Kim Y, Kang H, Lee J, Choi J, Kim T. (2024) PEI-Net: Bolus segmentation from video fluoroscopic swallowing study images using preprocessing ensemble and cascaded inference. *Computers in Biology and Medicine*. 1726.

6. Sejdic E, Khalifa Y, Mahoney AS, Coyle JL. (2023) Artificial intelligence and dysphagia: novel solutions to old problems. *Arq Gastroenterol*. 57(4):343–346.

P019 Developing Artificial Intelligence Capability in Radiography Through Apprenticeship-Based Learning

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Background

Radiography is a profession that combines patient-centred care with advanced technologies and has traditionally been an early and willing adopter of emerging technological developments. Artificial intelligence (AI) is increasingly being deployed within radiography departments, particularly in areas such as image interpretation, MRI scan acceleration, and CT dose reduction. The integration of AI will have implications for the radiographer's role, requiring the development of new knowledge and the adoption of new working practices. This need is reflected in the updated Health and Care Professions Council Standards of Proficiency (HCPC, 2023) which require radiographers to "demonstrate awareness of AI and deep learning technology and its application to practice".

Purpose

This presentation will share and evaluate experiences of a research radiographer undertaking a Level 4 Data Analyst apprenticeship and a Level 7 AI and Machine Learning apprenticeship. It will explore how the apprenticeship curricula covering data science, Python programming, and machine learning techniques can be applied within the radiography department to improve patient care, and how this non-academic workplace-based learning offers an alternative route to acquiring AI knowledge and skills relevant to healthcare.

Summary of Content

This work will describe and evaluate the Level 4 Data Analyst and Level 7 AI and Machine Learning apprenticeships from a radiographer's perspective, including examples of using the skills gained to perform department activity analysis, predict patient non-attendance, and contributions to AI-focused radiology research.

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P020 Evaluation of deep-learning mandible segmentation in paediatric head and neck rhabdomyosarcoma

[Abigail Crowther](#)¹, [Nina Joyce](#)¹, [Alasdair Wilkinson](#)¹, [Ethan Pierce](#)¹, [Jia Min Lim](#)², [Tom Melichar](#)¹, [Peter Sitch](#)³, [Lucy Siew Chen Davies](#)^{1,4}, [Emma Foster-Thomas](#)⁵, [Shermaine Pan](#)⁶, [Ed Smith](#)^{1,3,6}, [Eliana Vasquez Osorio](#)¹, [Marianne Aznar](#)¹, [Dr Chelsea Sargeant](#)¹, [Angela Davey](#)¹

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Background

Radiotherapy (RT) forms a critical component of treatment in 80% of paediatric head and neck (H&N) rhabdomyosarcoma (RMS) cases [1] and can cause facial asymmetry due to the radiosensitive craniofacial skeleton of children. Quantifying post-RT bony facial change could inform future dose constraints, but current assessment relies on qualitative review or labour-intensive manual delineation. Automated segmentation offers a scalable solution. This study evaluates the accuracy of the open-source, deep-learning segmentation tool TotalSegmentator [3] for mandible segmentation in paediatric RMS imaging.

Methods

CT scans from twelve children aged 2-15 with H&N RMS and corresponding expert manual mandible delineations were analysed. Mandible segmentations were generated using TotalSegmentator's craniofacial structures task [3]. Differences in anatomical definitions between automated and manual contours were addressed using sequential dilation and erosion of the TotalSegmentator output (Figure 1). Surface-distance metrics [2] quantified agreement. Associations between segmentation accuracy and patient age, sex and breathing tube use during acquisition were explored using non-parametric statistical tests.

Results

Systematic differences in anatomical definition between manual contours and automated segmentations limited direct quantitative comparison. Metrics showed no consistent tendency towards over- or under-segmentation by TotalSegmentator. No statistically significant associations were observed between accuracy and patient characteristics (examples in Figure 2). TotalSegmentator failed in one case where tumour location disrupted normal anatomy.

Conclusion

Manual delineations consistent with TotalSegmentator definitions are needed to justify its use for quantitative mandibular assessment in this cohort. Performance appeared consistent across demographic and acquisition variables. Larger datasets are required to confirm trends and understand local segmentation failure.

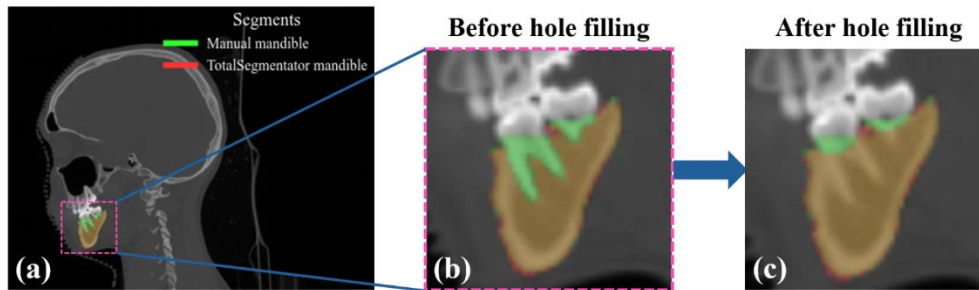


Figure 1: Manual (green) compared to TotalSegmentator (red) mandible segmentation results, with overlapping regions shown in orange. (a) Manual and TotalSegmentator mandible segmentations overlaid on the corresponding CT scan. (b) Zoomed-in region of the mandible (pink dashed box in (a)), showing gaps in the TotalSegmentator segmentation at the tooth roots. (c) The same region after hole filling using dilation and erosion.

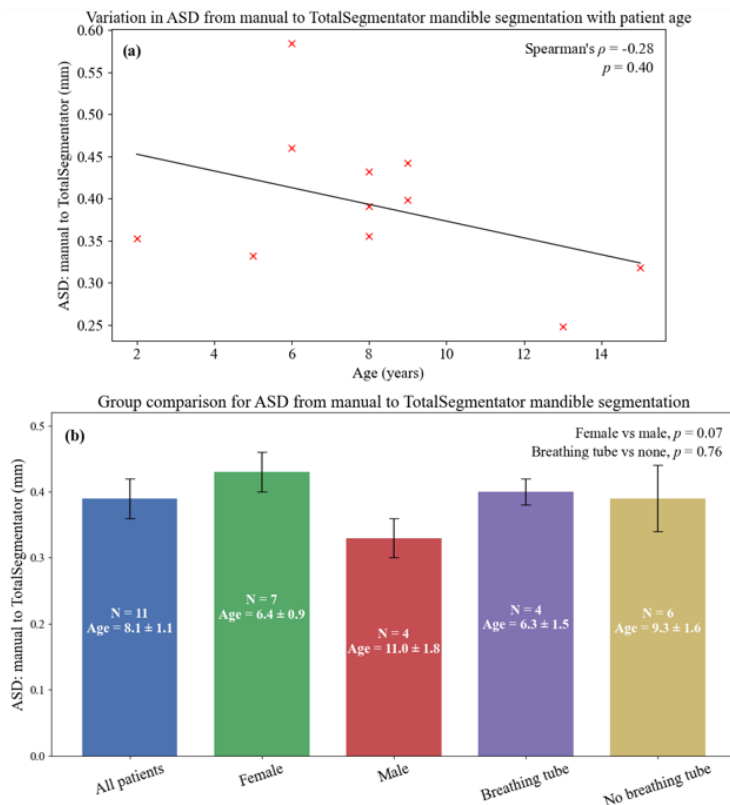


Figure 2: (a) Variation in average surface distance (ASD) from the manual to TotalSegmentator mandible segmentation with patient age. Red crosses indicate individual patients, and the black regression line shows a fitted trend, demonstrating a weak, non-significant negative correlation (Spearman's $\rho = -0.28$, $p = 0.40$). (b) Group comparison of ASD from the manual to TotalSegmentator mandible segmentation across the full cohort, sex and breathing tube status. Bars show mean ASD with black error bars indicating the standard error of the mean (SEM). Group sizes and mean ages ($\pm$ SEM) are shown within each bar.

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- Google DeepMind (2025) surface-distance [GitHub repository]. Available at: <https://github.com/google-deepmind/surface-distance.git> (Accessed: 9 February 2026).
- Wasserthal, J., et al. (2023) TotalSegmentator: Robust segmentation of 104 anatomic structures in CT images. *Radiology: Artificial Intelligence* 5(5): e230024. <https://doi.org/10.1148/ryai.230024>.

P021 Personalized Probe Guidance via Reinforcement Learning in Low-Resource Settings

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Objective

To develop and evaluate a reinforcement learning (RL)-based system that provides real-time, personalized probe guidance for non-specialist ultrasound operators in low-resource environments, with the aim of improving scan quality and diagnostic reliability.

Introduction

Ultrasound access is expanding globally, but image acquisition remains operator-dependent, particularly in rural or underserved regions where trained sonographers are scarce. Reinforcement learning presents an opportunity to autonomously assist operators in achieving optimal probe positioning, especially where training infrastructure is limited.

Methods

A Deep Q-Network (DQN) reinforcement learning model was trained using a dataset of 20,000 expert-annotated abdominal ultrasound scans, covering common obstetric and abdominal windows. The model learned to predict real-time probe movement recommendations (e.g., tilt, rotate,) that maximize image quality. This algorithm was integrated into a low-cost, battery-operated handheld ultrasound system with embedded haptic feedback — specifically, directional vibrations to guide user adjustments. Eighteen rural health workers in Uganda, with no formal sonography training, participated in a prospective. Key metrics included: Scan quality score, rated blindly by three expert radiologists on a 5-point Likert scale, Time to image acquisition and Diagnostic concordance with gold-standard images.

Results

RL guidance improved mean scan quality from 2.1/5 to 4.3/5 ($p < 0.01$). Average acquisition time decreased from 74 seconds to 47 seconds — a 37% reduction. Diagnostic concordance with expert-reviewed images rose from 62% to 89%, indicating significant gains in clinical reliability.

Conclusion

Reinforcement learning-based probe guidance empowers non-specialists to perform high-quality ultrasound, offering a scalable solution for improving diagnostic equity in low-resource and remote healthcare settings.

P022 Automation Bias in CXR Reporting: Does AI influence reader decision-making and confidence?

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Introduction

Chest radiographs (CXR) are the most frequently performed imaging examination worldwide and continue to play a key role in early lung cancer detection. Artificial intelligence (AI) tools are increasingly integrated into radiology workflows, yet most studies focus on diagnostic accuracy rather than the impact on human decision-making. Understanding automation bias is essential before widespread clinical adoption.

Methods

This multi-reader, multiple-case (MRMC) experimental study uses a paired, case-by-case sequential design. Consultant radiologists and reporting radiographers from multiple NHS sites will interpret a set of anonymised CXRs under two conditions: without-AI assistance and with AI-output. Each participant will act as their own control to minimise confounding factors. A dataset of 20 anonymised CXRs will be selected from a validated AI lung cancer study repository with ground truth already established. The dataset will include 10 cases where AI produced false-positive nodule findings and 10 cases where AI correctly identified nodules missed in original clinical reports, ensuring a mix of challenging cases. For each case, readers will record: Presence/absence of a nodule, Confidence level (0–100 scale) and recommended follow-up action.

Results

Recruitment is ongoing and will conclude February-2026, with data analysis completed by May-2026. The primary outcome—change in decision regarding nodule presence—will be analysed using McNemar's test for paired proportions, and paired t-tests used for changes in confidence scores and management decisions.

Conclusion

This study will provide insight into how AI influences diagnostic decision and confidence to help inform strategies to mitigate automation bias, and support safe, effective integration of AI into practice.

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P023 The challenges and opportunities of purchasing and implementing a Radiology AI platform: an evaluation study within a large UK NHS Trust

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Background

Artificial intelligence (AI) is increasingly adopted in radiology to enhance diagnostic accuracy, workflow efficiency, and patient care. Integrated radiology AI platforms enable the coordinated deployment of multiple tools to support automation and streamlined imaging pathways. However, implementation may alter professional roles and workflows, necessitating multidisciplinary collaboration to ensure safe, effective, and equitable use. While individual AI applications are well evidenced, there is limited research exploring AI platform adoption. This study investigates challenges and opportunities associated with implementing a radiology AI platform within a single NHS Trust.

Methods

A cross-sectional mixed-methods evaluation was conducted using an anonymous online survey distributed via Qualtrics. Purposive sampling targeted NHS Trust staff involved in or influencing AI procurement and implementation. The survey included Likert-scale and free-text questions. Quantitative data were analysed descriptively, while qualitative responses were examined using thematic analysis.

Results

Six of thirteen invited participants from radiography, nursing, and non-clinical roles completed the survey. While 83% believed an AI platform could meet radiology needs, half cited insufficient evidence for immediate adoption. Financial considerations were the dominant influence on decision-making. Main perceived benefits were improved workflow and faster reporting; opinions on care equity varied. Radiologists were identified as key stakeholders. Five themes emerged: financial considerations, diagnostic capability, equity, safe integration, and training.

Conclusion

Despite broad support for future adoption, financial barriers remain the primary challenge to AI platform implementation. Addressing economic uncertainty, governance, interoperability, equity, and workforce training will be critical for sustainable integration within NHS radiology services.

P024 The Knowledge, Perceptions, and Education Needs of Diagnostic Radiographers Regarding Artificial Intelligence in Radiology: A Systematic Review

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Introduction

Artificial intelligence (AI) and Machine learning (ML) are rapidly transforming modern healthcare. Despite the growing prevalence of AI tools, a significant gap exists between the rapid pace of technological development and the current educational preparedness. This review aims to answer: What is the current state of HCPC Registered radiographer training, awareness and perception on AI?

Methods

A systematic review was used to meet the objectives of this study as it allows to question to in a clear, unambiguous and structured way. The search strategy used a multi database search across different platforms. Data was extracted using the McMaster tool and recorded by both researchers.

Analysis:

Theme 1: Knowledge and Perceptions

The studies reported a favourable attitude and general willingness among radiographers to embrace AI, there does appear to be a lack of awareness of the fundamentals of AI.

Theme 2: Education

The studies reported that there is a significant number of the radiographers questioned that haven't received any formal AI training.

Theme 3: Barriers to AI Engagement

A barrier to confidence and understanding in AI could be due the lack of education on the subject, leading to misconceptions around job roles and job security.

Conclusion:

Radiographers are generally receptive to AI and acknowledge its potential to enhance their roles and reduce workload, this positive outlook is overshadowed by a critical and urgent need for education and training.

P025 The validation deficit: Independent assessment of commercial radiology AI performance

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Background

Over 700 artificial intelligence algorithms hold FDA or CE regulatory approval for radiology, yet evidence of real-world performance independent of manufacturers remains critically scarce. The gap between manufacturer-reported and independently-validated performance has significant implications for deployment decisions.

Method

PubMed and Embase were systematically searched from inception to January 2026. Eligible studies externally validated FDA-cleared or CE-marked commercial radiology AI, reporting standalone diagnostic accuracy independent of manufacturers. AI-assisted reader studies were excluded. Data on sensitivity, specificity, and performance-modifying factors were extracted with narrative synthesis.

Results

Despite comprehensive searching, only eight studies evaluating ten commercial AI products met inclusion criteria-exposing a critical validation deficit. Studies covered chest radiography (n=3), neuroimaging (n=3), musculoskeletal radiography (n=3), and CT spine (n=1). Sensitivity ranged from 35.3% to 92.0%. Critically, only two studies permitted manufacturer comparison, both revealing substantial performance gaps: pneumothorax detection achieved 60% versus 84% FDA-reported sensitivity (24 percentage points); cervical fracture detection achieved 76% versus 95.8% manufacturer-reported sensitivity (19.8 percentage points). Performance was consistently affected by lesion size (<5mm stroke: 48% vs ≥20mm: 95%), disease prevalence (AUC 0.65 at 2.2% prevalence), and threshold settings.

Conclusion

Independent AI validation is alarmingly rare, and real-world performance consistently underperforms manufacturer claims by approximately 20 percentage points. Radiologists making AI deployment decisions currently lack adequate evidence. Mandatory post-market surveillance reporting and institutional pre-deployment validation should be required before clinical implementation.

P026 Using commercially available Large Language Models (LLMs) to increase the readability of MRI reports

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Background

MRI reports often use complex medical jargon, creating a communication gap for patients who now have direct access to their records. This study evaluates the ability of Large Language Models (LLMs) to improve the readability of musculoskeletal (MSK) MRI reports.

Methods

61 MSK MRI reports were simplified using four LLMs: ChatGPT, Gemini, Perplexity, and DeepSeek. Readability was measured using Flesch-Kincaid (FK) scores. Statistical significance was assessed using repeated-measures ANOVA and Tukey's post hoc analysis in Jamovi.

Results

All LLMs significantly improved readability compared to human-authored reports (Mean FK: 40.8, $p < .001$). DeepSeek (73.3) and Gemini (69.9) achieved the highest scores, translating reports to an 8th-grade reading level. ChatGPT (59.4) and Perplexity (54.8) also showed improvement but remained at a high school/college level. Significant differences were found between DeepSeek/Gemini and the other models ($p < .001$).

Conclusion

Commercially available LLMs, particularly DeepSeek and Gemini, effectively bridge the communication gap by simplifying technical MRI reports into patient-friendly language. This suggests LLMs are a viable tool for enhancing patient engagement in musculoskeletal radiology.

P027 High negative predictive value from a handheld non-ionising breast scan: feasibility evidence for symptomatic triage

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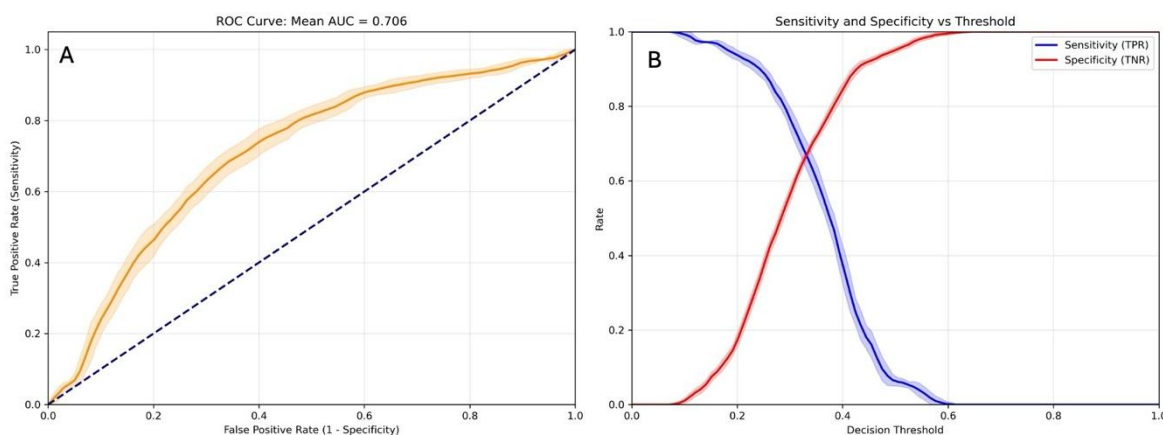
Symptomatic breast referrals generate substantial imaging demand, yet most assessed lesions are benign. A rapid, non-ionising adjunct with a low false-negative rate could help prioritise imaging and streamline workflow. Bioimpedance technology may prove a useful diagnostic tool to support early patient triage.

In a feasibility study, 90 women were enrolled (20 radiologically normal; 70 with biopsy-proven abnormalities). Each breast was scanned at predefined positions using a handheld time-domain bioimpedance sensing (TD-BIS) device (a non-ionising and non-compressive methodology). Capacitance-derived features were classified using a machine-learning model with leave-one-participant-out cross-validation. Threshold selection and tuning were confined to training folds to avoid within-person leakage. Histology was used as gold-standard for training to identify malignancies.

Of 180 breasts, 12 failed quality control. Among 168 analysable breasts, 36 were malignant (21.4%) and 132 non-malignant (78.6%). Prioritising sensitivity, TD-BIS correctly classified 31/36 malignant breasts and 44/132 non-malignant breasts. Mean performance over repeated runs was: sensitivity 90.1%, specificity 33.6%, positive-predictive value 22.8%, negative predictive value 92%. Key metrics exceeded random label shuffling ($p < 1e-5$). Optimising for sensitivity (95%; 35/36 malignancies correctly classified), specificity dropped to 12.4%.

TD-BIS achieved high negative predictive value, and sensitivity for malignancy detection in a feasibility evaluation, supporting further assessment as a rule-out triage adjunct in symptomatic pathways, potentially in primary care. Analysis was breast-level with participant-level covariates, whilst patient-level rule-out impact will be evaluated prospectively. Specificity was modest at this operating point, with prospective pathway studies required to evaluate safety and service impact, primarily in downstream imaging use, time-to-diagnosis and improved patient experience.

Performance characteristics of the time domain bio-impedance device in classifying malignant tissue amongst patients with healthy, benign and malignant breasts.



A. The classification of malignant tissue with an AUC of 0.71. B. Thresholding for malignancy detection enabling selective cut offs to optimise for improved sensitivity or specificity.

P028 Mind vs Machine - striking the cognitive balance in automated health care?

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The New Paradox: automation reduces burden but erodes expertise. The more automation handles routine tasks (documentation, monitoring, image triage), the more health care workers are freed for higher-value work, but those same routine tasks are precisely how some medical professionals build, maintain, and refine expertise. Automation becomes a double-edged scalpel.

The Hidden Risk: automation affects culture more than workflows - examining how automation shifts the culture of care. Health care workers move from being hands-on practitioners to supervisors of systems.

The Real Balance: designing work that preserves human authority. The challenge is positioning balance not as a "50/50 split" between humans and machines, but as designing the workflow so that the human has the final decision.

The Future: A healthcare system where humans do what machines cannot. Automation should relieve healthcare workers of routine tasks and enable them to focus on meaningful human interaction. Machines can recognise patterns, optimize schedules, raise anomalies and summarise histories.

Summary: machines cannot comfort a frightened patient, detect social nuance, negotiate priorities with families, advocate for the vulnerable, hold moral responsibility. The healthcare systems that thrive will be those that intentionally protect these human-only spaces—not by resisting automation, but by building it around humanity.

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P029 3D susceptibility weighted imaging (SWI) utilising wave-CAIPI acceleration in the MRI dementia protocol

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Background

Vascular dementia (VaD) is the second most common cause of dementia after Alzheimer's disease. There is an increasing awareness of the importance of small vessel disease as a predictor of cognitive decline and dementia.¹ In MR imaging, SWI is a superior technique for detecting cerebral microbleeds (CMB). Both conventional 2D and 3D SWI require long acquisition times, which may contribute to motion artifacts and patient anxiety,² especially in cognitively impaired patients, such as those with dementia.

Purpose

This educational pictorial review discusses utilising Wave-Controlled Aliasing in Parallel imaging (Wave-CAIPI) in the dementia brain protocol at a host hospital. Wave-CAIPI reduces acquisition times by approximately 50% compared to conventional SWI³ with a noticeable reduction in motion artefacts.⁴ This faster sequence will benefit a wide range of individuals including motion-prone populations by decreasing the time patients are in the scanner, thereby improving patient comfort and diagnostic outcomes.⁵

Summary

This accelerated sequence provides excellent signal to noise (SNR) and maintains the sensitivity required for identifying microvascular pathology without added noise often encountered in alternative parallel imaging techniques.⁶ Wave-CAIPI enables high-resolution volumetric imaging with increased acquisition speed with reduced noise amplification and artifact.⁷

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P030 AI-enhanced CBCT image quality for online adaptive radiotherapy workflows

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Background

CT-guided online adaptive radiotherapy (CT-oART) may improve treatment quality utilising conventional treatment machines. However, conebeam-CT (CBCT) image quality limits the efficiency and accuracy of CT-oART. Elekta Iris combines AI-scatter correction and iterative reconstruction, aiming to enhance image quality. This work evaluates the Iris algorithm's impact on image quality and anatomy visualisation.

Method

Ten patients (various pelvic sites) were imaged using the Elekta pelvis CBCT preset. Images for three consecutive fractions were reconstructed using Iris and standard XVI algorithms. Image quality was assessed by three independent Therapeutic Radiographers based on visibility of organs at risk (OARs). Scoring compared reconstruction algorithms using a 5-point system: significantly worse, moderately worse, same, moderately better, or significantly better. Elekta pelvis preset Iris and XVI reconstructions of the CatPhan phantom were compared using in-house image quality analysis software. Analysis software assessed geometric accuracy, resolution, soft tissue contrast, and uniformity.

Results

Image quality and pelvic anatomy visualisation for Iris images was generally comparable to, or moderately better than, XVI (figure 1&2). Iris images were suitable for IGRT and often improved OAR visibility, which may benefit oART workflows. However, Iris image quality was poorer than XVI in cases where significant bowel gas was present. CatPhan image analysis showed that XVI and Iris algorithms produce comparable geometric accuracy. Iris improved resolution (3-5lp/mm), low contrast visibility (0.7-0.4%), and uniformity (3.9-3.4%).

Conclusion

Iris AI-enhanced CBCT image quality appears comparable to, or better than, standard algorithms. This may improve availability of oART through increased accuracy and efficiency of CT-oART workflows.

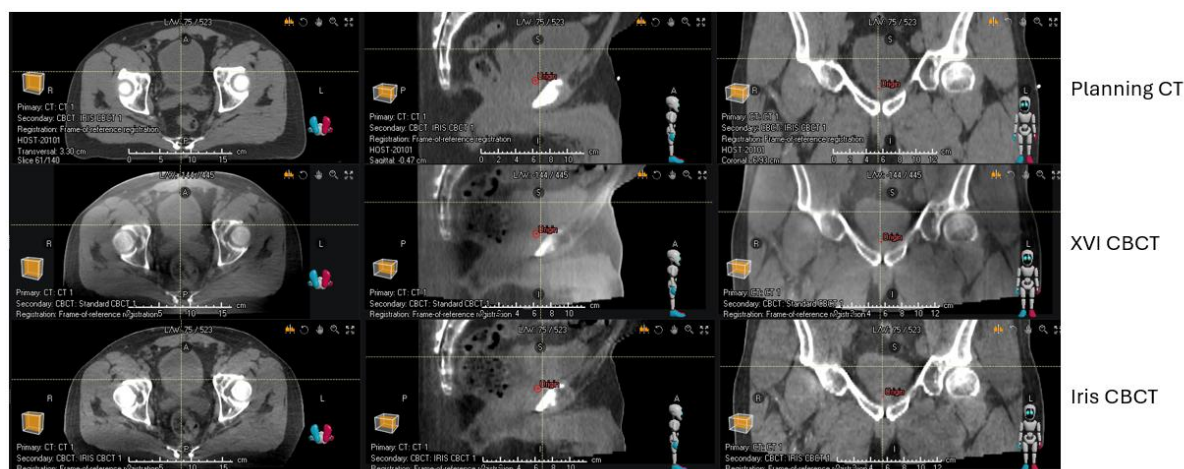


Figure 1: Comparison of planning CT scan (top row), standard XVI pelvis CBCT (middle row) and Iris AI-enhanced pelvis CBCT (bottom row) for a male patient undergoing bladder radiotherapy.

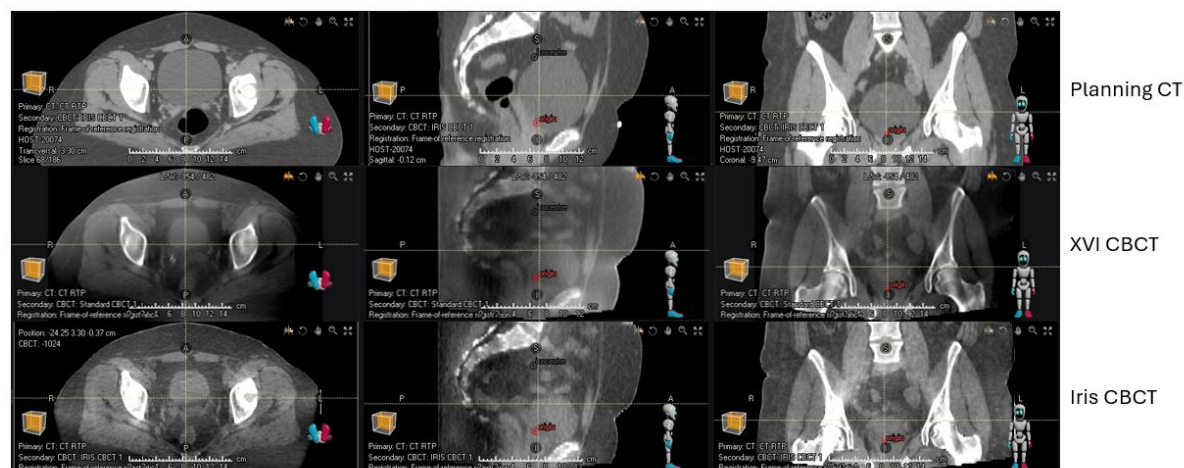


Figure 2: Comparison of planning CT scan (top row), standard XVI pelvis CBCT (middle row) and Iris AI-enhanced pelvis CBCT (bottom row) for a female patient undergoing cervix radiotherapy.

P031 Beyond Lesion Burden: A Systematic Review of PET–MRI Biomarkers of Neuroinflammation and Demyelination in Multiple Sclerosis

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Multiple sclerosis (MS) is a chronic immune-mediated disorder characterised by inflammatory demyelination and neurodegeneration. Magnetic resonance imaging (MRI) underpins diagnosis and monitoring; however, conventional MRI can underestimate diffuse neuroinflammation and demyelination, particularly within normal-appearing tissue and grey matter. Integrated positron emission tomography–magnetic resonance imaging (PET–MRI) enables molecular assessment of inflammatory and myelin-related pathology alongside anatomical imaging.

This systematic review evaluated the added biological value of PET–MRI beyond conventional MRI in adults with suspected or established MS and explored barriers to clinical translation. A systematic literature search was conducted for English-language studies published between 2019 and 2025 involving adult MS populations undergoing integrated PET–MRI. Methodological quality was appraised using the Critical Appraisal Skills Programme checklist, and findings were synthesised narratively.

Eight observational studies were included. PET–MRI studies employed tracers targeting innate immune activation, myelin integrity, or glucose metabolism. Increased tracer uptake was demonstrated in normal-appearing white matter and grey matter, suggesting diffuse pathology not detected by lesion-based MRI. Myelin-sensitive imaging showed reduced uptake in lesions and, in some studies, normal-appearing tissue, with reported associations with disability. Evidence supporting improved diagnostic performance over MRI was limited. Translation was constrained by small cohorts, tracer limitations, and methodological heterogeneity.

PET–MRI provides biologically informative markers beyond conventional MRI; however, current evidence remains insufficient to support routine clinical implementation.

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P032 Method of manufacturing multimodal bone tissue phantoms for radiomics analysis in diagnostic radiology

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Background

Radiomics analysis is a rapidly developing method for quantitative image evaluation. This approach is promising for assessing osteoporosis. Conducting phantom studies allows exploring the stability of radiomic features regardless of the scanning parameters.

Materials

The samples were 3D-printed from X-ray contrast ABS with a constant 32% volumetric filling but different spatial organization of trabeculae. A gyroid structure was used, with intercell distances of 0.45 mm (sample A) and 0.3 mm (sample B). The intertrabecular spaces were filled with a gadolinium-doped agarose gel, enabling multimodal imaging studies.

Results

When visually assessing CT and MRI images, large and small elements of the internal structure are clearly distinguishable. The samples were examined using CT and MRI based on routine spinal imaging protocols. In CT, the reconstruction kernel, FOV, slice thickness, tube current, and tube voltage were varied. Sample A showed a mean attenuation of 496.36±4.97 HU, while sample B demonstrated a mean attenuation of 494.08±4.02 HU. TOST analysis confirmed the equivalence of the samples within ±5 HU with a statistical significance of $p < 0.05$.

MRI acquisitions included T1- and T2-weighted images with variations in FOV, slice thickness and orientation. The mean relative T1 signal intensities for samples A and B were 1.638±0.159 and 1.704±0.221, respectively, while the T2 values were 0.444±0.025 and 0.439±0.017.

Conclusions

The proposed models of trabecular bone with deliberately different and visually distinguishable internal architecture demonstrate equivalent quantitative indicators in the area of interest, enabling assessment of radiomic pattern stability under varying CT and MRI parameters.

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P033 Radiographer's Perspective: Computer-assisted Image Optimisation in Projectional Radiography

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Introduction

Digital radiography (DR) continues to evolve, with computer-assisted optimisation tools offering potential benefits for image quality, radiation dose management, and workflow efficiency (Hussner et al., 2025). However, diagnostic radiographers' engagement with these tools prescribes their utility, meaning benefits are only realised when tools are understood and utilised appropriately in clinical practice. This study aims to identify radiographers' training needs regarding computer-assisted optimisation tools in projectional radiography by assessing their confidence, attitudes and perceptions.

Methods

A quantitative questionnaire survey was distributed to diagnostic radiography students at a regional institution and qualified radiographers at a NHSE training event (n=22). The Jisc online platform was used to collect Likert-scale responses on knowledge, confidence and attitudes, alongside open-ended questions for qualitative insights. Descriptive statistics were generated in Microsoft Excel for the quantitative data, and open-ended responses were analysed using content analysis.

Results

Radiographers reported varying levels of confidence in using different optimisation tools. Tools frequently used in clinical practice were associated with higher confidence, while more advanced tools received lower ratings. The overall attitudes were positive, but misconceptions regarding their capabilities were identified. The most frequently reported barrier to effective use was insufficient training, especially for advanced tools.

Conclusion

Targeted training, user-friendly tool interfaces, and stronger manufacturer and departmental support are needed to optimise safe and effective use of computer-assisted optimisation tools. Embedding structured, hands-on training within pre-registration programmes and local continuing professional development can enhance radiographers' skills, address misconceptions, and support consistent utilisation in clinical practice.

Hussner, E.D., Sundby, S., Outzen, C.B., Jensen, J., Tingberg, A. and Precht, H. (2025) How does intelligent noise reduction software influence the image quality in pelvic digital radiography: A phantom study. *Journal of Medical Imaging and Radiation Sciences* 56 (2), 101814.

P034 Evaluating challenges and facilitators for implementing radiology CDS: a co-creation approach

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Background

Clinical Decision Support (CDS) tools aim to improve imaging appropriateness and reduce unnecessary referrals. Despite their potential, review of the literature has found adoption has been limited. This study aims to address barriers and facilitators to adoption of CDS through a co-creation approach by engaging stakeholders to design a practical, context-specific implementation plan for CDS in Scotland.

Method

Using participatory action research principles; structured co-creation workshops were conducted with stakeholders including GPs, radiologists, radiographers, imaging managers, IT specialists, and vendor representatives. Workshops focused on identifying challenges, facilitators, and usability requirements for CDS integration. Activities included brainstorming and scenario-based usability evaluations. Data were collected via recordings, and reflective notes, and analysed using thematic analysis supported by NVivo.

Results

Analysis is ongoing. Preliminary findings indicate key barriers include workflow complexity, limited awareness of CDS benefits, and interoperability concerns. Facilitators identified include strong leadership, early stakeholder engagement, and alignment with national imaging guidelines. Usability insights highlight the need for intuitive interfaces and integration with existing referral systems.

Conclusion

This co-creation approach provides actionable insights for CDS implementation in radiology services. Findings will inform a framework to enhance adoption, improve referral appropriateness, and support safer, more efficient imaging pathways across NHS Scotland.

P035 Evaluating the appropriateness of GP radiology referrals: a retrospective cross-sectional study using a CDS audit tool

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Background

Inappropriate imaging referrals contribute to unnecessary radiation exposure and inefficiencies in patient pathways. While national guidelines such as iRefer exist, local data on referral appropriateness in Scotland is limited. This service evaluation in collaboration with NHS Forth Valley and xWave Technologies, aims to establish a baseline before implementing Clinical Decision Support (CDS) tools.

Method

A retrospective cross-sectional review of GP referrals for CT, MRI lumbar spine, and plain film imaging performed within NHS Forth Valley over a 12-month period. Pseudo-anonymised data were extracted from the Radiology Information System and assessed using the xWave CDS audit tool against evidence-based guidelines (iRefer). Variables included patient demographics, referral urgency, imaging timelines, and diagnostic outcomes. Statistical analysis will explore patterns and predictors of inappropriate referrals.

Results

Data analysis is in progress. Findings will report the proportion of referrals meeting appropriateness criteria, diagnostic yield differences between appropriate and inappropriate referrals, and trends by age, sex, and GP location. Subgroup analysis will focus on high-volume examinations such as CT head and lumbar spine imaging.

Conclusion

This evaluation will provide the first local evidence on GP referral appropriateness in Scotland, informing targeted education and supporting safe CDS implementation. Findings will contribute to reducing unnecessary imaging, improving patient safety, and optimising radiology resources.

P036 Quantitative FDG-PET/CT metabolic patterns in frontotemporal dementia: a narrative review

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Background

FDG-PET/CT is frequently used to assess frontotemporal dementia (FTD) and shows characteristic hypometabolism in the frontal and temporal regions. Quantitative analytical techniques are increasingly used to facilitate objective interpretation and enhance differentiation among FTD subtypes.

Aim

To summarise and synthesise evidence regarding quantitative FDG-PET/CT metabolic patterns in frontotemporal dementia and to highlight clinically relevant regional findings.

Methods

A narrative literature review was conducted utilising PubMed, Scopus, and Web of Science databases. The search encompassed terms such as FDG-PET, PET/CT, frontotemporal dementia, FTD, quantitative analysis, and brain metabolism. Included studies reported quantitative FDG-PET/CT findings in clinically diagnosed FTD populations. Exclusion criteria included non-human studies, single-case reports, studies using tracers other than FDG, and studies lacking quantitative analysis. Most included studies were retrospective observational designs. A total of 45 studies met the specified inclusion criteria.

Results

Across the included studies, consistent hypometabolism was observed in the frontal, anterior temporal, and insular regions, with variations specific to behavioural and language FTD subtypes. Quantitative measures such as SUVR and regional z-scores demonstrated dependable metabolic reductions that aligned with established disease pathology. Several investigations have indicated that integrating quantitative analysis with visual assessment improves differentiation among FTD subtypes and increases diagnostic certainty.

Conclusion

Quantitative FDG-PET/CT analysis adds value by identifying disease-specific metabolic patterns in frontotemporal dementia. Using quantitative metrics may improve standardisation, increase diagnostic confidence, and enhance clinical reporting of FDG-PET/CT in FTD assessment.

1. EANM FDG-PET brain imaging guidelines: <https://eanm.org/publications/guidelines/overview/>

2. SNMMI brain PET clinical practice: https://captions.snmmi.org/Web/Clinical-Practice/Brain-Imaging-Resources/Default.aspx?_gl=1*1b9wqkt*_ga*MTk4MjcwMjUzMy4xNzY5MjY0NDUz*_ga_WCM7LCM5L3*czE3NjkyNjQ0NTIkbzEkZzAkdDE3NjkyNjQ0NTIkaJYwJGwwJGgw.

P037 Exploring stakeholder experiences and perceptions of clinical decision support for radiology referrals: a UK-wide survey

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Background

Clinical Decision Support (CDS) systems aim to improve imaging appropriateness and reduce unnecessary referrals. However, evidence from systematic reviews suggests that poor adoption and lack of change management limit their effectiveness. Understanding stakeholder experiences and perceptions is critical to successful implementation. This study explores attitudes towards CDS compared to traditional referral methods across UK healthcare professionals.

Method

A cross-sectional online survey was distributed to UK healthcare professionals who request, vet, justify, or perform radiology referrals, including GPs, physicians, radiologists, radiographers, and advanced practitioners. Recruitment used snowball sampling through professional networks, social media, and UKIO 2025. The survey combined closed and open-ended questions, including the Conner Change Resistance Scale and an adapted Net Promoter Score (NPS) to measure sentiment. Responses were analysed using descriptive statistics and thematic analysis.

Results

Data collection is complete; analysis is ongoing. Preliminary findings (n=154) indicate mixed attitudes toward CDS, with strong support for its potential to improve standardisation and patient care but concerns about workflow integration and resource impact. A notable proportion of respondents reported limited awareness of CDS.

Conclusion

This survey provides insights into stakeholder readiness for CDS adoption and identifies barriers and facilitators to implementation. Findings will inform strategies for effective rollout, ensuring CDS delivers its intended benefits for patient safety and service efficiency.

P039 Current implementation of exposure indices in projectional radiography

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Introduction

The exposure index indicates the level of radiation exposure of a digital radiograph. However, the degree of implementation of exposure indices in digital radiography in the United Kingdom (U.K) and internationally is unknown.

Aim

Evaluate the accurate implementation, and awareness of exposure indices in projectional radiography.

Method

Key concepts and search terms derived from the review title, were inputted into Cochrane, Cinahl, Medline, Scopus and Web of Science to generate a systematic literature search. Articles were selected according to the inclusion and exclusion criteria. Additional publications were identified using Google scholar and following citations.

Results

Exposure index (EI) and Deviation index (DI) values varied widely for the same body part. The percentage of EI and DI values in the optimum range were low. The use of target EI was not standardised therefore DI values were not comparable between institutions. Adoption of exposure indices in clinical practice was low due to inadequate training and education of radiographers.

Conclusion

The implementation of exposure indices has been inconsistent and ineffective. Exposure indices need to be standardised, internationally accepted, and well adopted into radiology to improve practice and patient safety.

Implications for practice

Target EI should be incorporated into department protocols, each body part with a unique target EI. DI values should be recorded and monitored as part of quality assurance procedures.

Future work

National audit studies on exposure indices in the U.K and other countries to gain more insight into the global and current state of implementation of exposure indices.

P040 Developing a Phantom Based Method to Evaluate and Optimise Contrast to Noise Driven Exposure Control in Cardiac Fluoroscopy

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This project aims to develop a standardised testing method for the emerging technology of contrast-to-noise driven exposure controls (CEC) as implemented on the Siemens ARTIS Icono. CEC presents a potential opportunity to improve image quality in fluoroscopic procedures while minimising patient dose compared to traditional dose driven automatic exposure control (DEC) systems. However, there has been little research into the scale of this improvement, and no standardised quality assurance method is currently available.

Unlike conventional DEC systems that maintain a constant detector dose, the ARTIS Icono employs OPTIQ® (Siemens Healthineers GmbH), a CEC where the system selects imaging parameters based on a predefined target image quality. Additionally, Structure Scout enables material-specific optimisation.

In this project a custom built phantom was designed to characterise system performance. A figure of merit (FOM) was designed to compare system performance in terms of both image quality and dose. Using this FOM, the performance of the ARTIS Icono was compared with its predecessor, the Siemens ARTIS Zee.

Across various clinical protocols the ARTIS Icono demonstrated a general improvement, indicating that CEC can achieve enhanced image quality at the same or lower dose levels.

Ongoing work focuses on understanding the impact of changing parameters within the protocol selection and user defined controls on CEC behaviour. This deeper characterisation will enable greater understanding of the system in order to see how it may be optimised in clinical practice.

This project demonstrates a feasible and effective testing methodology for centres using the ARTIS Icono.

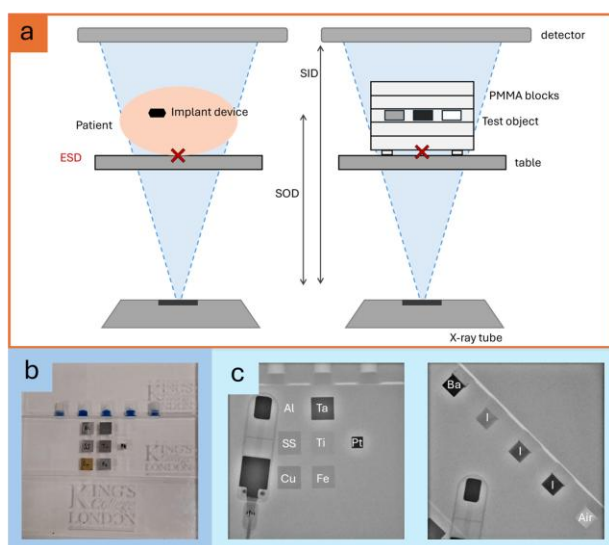


Fig 1: a) Diagram showing the experimental set up compared to that of clinical use. The phantom is placed between polymethyl methacrylate (PMMA) blocks, enabling simulation of varying patient-equivalent thicknesses (PET). The experimental set up was performed using fixed source-to-image distance (SID) and comparable field sizes between both systems. b) A photograph of the phantom and c) fluorography image of the metal insert component of phantom and of the contrast agent section of the phantom.

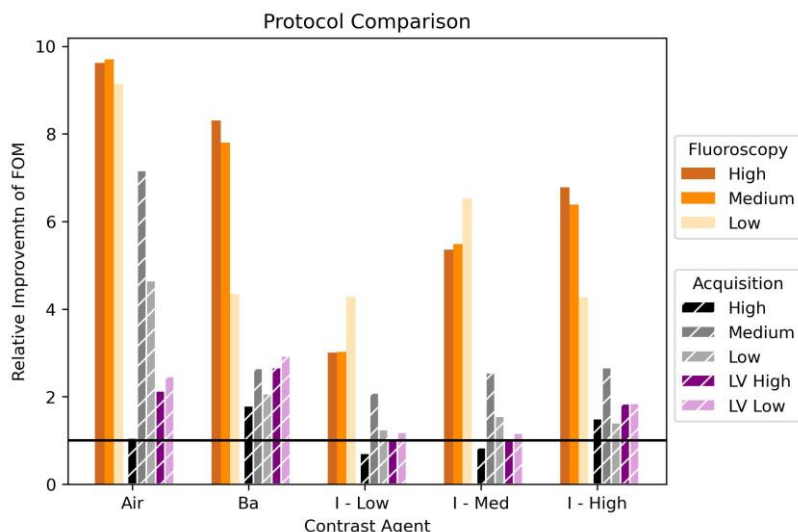


Fig 2: Graph showing the relative comparison of FOM for common protocols. The FOM from the Icono system was divided by the FOM for the Zee system to calculate a ratio to demonstrate improvement. Values above 1 show an improvement using CEC whereas values below 1 show a reduction in image quality at a higher dose. The most common fluoroscopy protocol triplet and acquisition protocol triplet are shown, both optimised for iron. LV acquisition protocols are included as they are optimised for iodine.

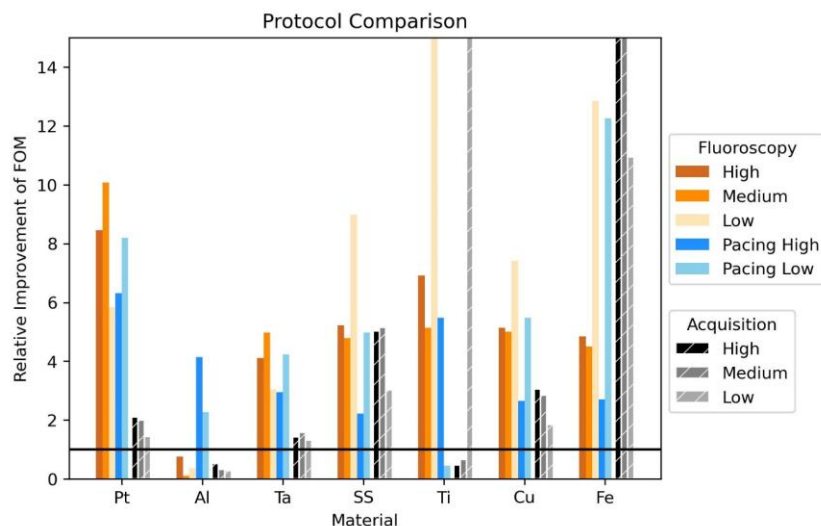


Fig 3: Graph showing the relative comparison of FOM for common protocols. The FOM from the Icono system was divided by the FOM for the Zee system to calculate a ratio to demonstrate improvement. Values above 1 show an improvement using CEC whereas values below 1 show a reduction in image quality at a higher dose. The most commonly used fluoroscopy protocol triplet and acquisition protocol triplet are shown, both optimised for iron. Pacing fluoroscopy protocols are included as they are optimised for platinum.

P041 Optimisation of the Cardiac CT Coronary Angiogram (CTCA) Protocol on the GE Revolution Apex Elite CT Scanner; Specifically Evaluating the Necessity of Beta-Blocker Administration

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Computed tomography coronary angiography (CTCA) is increasingly used as a first-line diagnostic tool for assessing coronary artery disease (CAD), offering a non-invasive alternative to invasive coronary angiography (ICA). Historically, CTCA has been limited by cardiac motion; however, advances in cardiac-specific CT technology have improved image quality. The GE Revolution Apex Elite CT scanner offers single-rotation cardiac imaging. This study aims to evaluate the necessity of beta-blocker use in cardiac CT imaging with modern scanner technology.

Patients undergoing CTCA on the Bedford GE Revolution Apex Elite CT scanner in a weight range of 70–90kg, were audited. Data collected included radiation doses, intravenous beta-blocker use on the day of scanning, heart rate at acquisition, and radiologist image quality scores. A Lungman phantom was also used to assess the CTCA dose protocol set.

86% of patients did not receive intravenous beta blockers on the day of scanning. The mean total examination DLP was $155 \pm 63 \text{ mGy}\cdot\text{cm}$, below the national diagnostic reference level of $280 \text{ mGy}\cdot\text{cm}$. The mean CTCA DLP was $112 \pm 57 \text{ mGy}\cdot\text{cm}$, with an average heart rate of $66 \pm 12 \text{ bpm}$. Image quality was rated as good in 79% of cases, with a mean Likert score of 4.5 ± 1 . A 10bpm reduction in heart rate was associated with an average dose reduction of $16 \text{ mGy}\cdot\text{cm}$. Phantom analysis indicated that increasing the noise index could further reduce dose by approximately 10%.

In conclusion, modern cardiac CT technology enables diagnostic-quality imaging at higher heart rates without routine beta-blocker use, while selective administration may offer additional dose reduction benefits.

P042 Patient Dose Assessment in Paediatric CT (Head, Chest and Abdominopelvic) at a Teaching Hospital in Ghana

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Aim

To assess radiation dose levels in paediatric CT examinations (head, chest and abdominopelvic) in a teaching hospital in Ghana and compare locally derived diagnostic reference levels (LDRLs) with published international DRLs.

Methods

A retrospective cross-sectional review of radiology records was conducted for 496 paediatric patients aged 0–15 years who underwent head, chest or abdominopelvic CT. Demographic data, scan parameters, volume CT dose index (CTDIvol) and dose–length product (DLP) were extracted. LDRLs were established as the 75th percentile of CTDIvol and DLP for each examination type and age group, and compared with DRLs reported in the literature.

Results

Head CT was the most frequently performed examination (35.0%), followed by abdominopelvic (33.0%) and chest CT (32.0%). Male patients accounted for 59.1% of examinations. Overall, LDRLs from this facility were lower than those reported in comparable studies. However, for head CT in the 11–15-year age group, CTDIvol and DLP were higher than published reference levels.

Conclusion

LDRLs were established for common paediatric CT examinations in this teaching hospital. While dose levels were generally lower than published DRLs, elevated head CT dose metrics in patients aged 11–15 years suggest the need for targeted protocol review and further optimisation.

Impact

These findings provide baseline local dose benchmarks for paediatric CT in Ghana and highlight a specific area (older paediatric head CT) where optimisation may further reduce radiation exposure without compromising clinical utility.

P043 Reducing Repeat Panoramic Radiographs (OPGs)

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Introduction

Repeat panoramic radiographs (OPGs) unnecessarily increase patient radiation exposure, disrupt workflow, and may affect diagnostic confidence. Common contributors to repeat imaging include patient positioning errors, motion artefacts, and suboptimal exposure settings. This Quality Improvement (QI) project aimed to reduce the frequency of repeat OPGs by identifying root causes and implementing targeted, practical interventions.

Methodology

Baseline data were collected over a defined period, during which every repeat OPG was reviewed and categorised according to established reject-analysis criteria. Causes of repetition were documented, focusing on positioning accuracy, patient stability, and exposure selection. A series of interventions were developed using QI principles, including operator refresher training, clear visual guides placed at the imaging unit, and enhanced patient instructions delivered immediately prior to exposure. These changes were implemented using iterative Plan–Do–Study–Act (PDSA) cycles to allow refinement and monitoring of their effectiveness.

Results

Baseline analysis indicated that most repeat OPGs were due to positioning issues—particularly chin height errors, midline deviation, and failure to maintain tongue-to-palate contact—followed by motion and occasional exposure-related problems. After implementing the interventions, a reduction in repeat OPG rates was observed. Improvements were noted in operator consistency, patient cooperation, and overall image quality.

Conclusion

Simple, low-cost interventions can significantly reduce repeat panoramic radiographs, lowering cumulative patient radiation dose and improving imaging efficiency. The structured QI approach used in this project provides a reproducible framework for enhancing radiographic quality and radiation protection across a range of dental imaging environments.

P044 Paediatric Diagnostic Reference Levels: A literature review of methodologies and their implications

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Introduction

For diagnostic radiological investigations, it is a legal requirement to assess patient ionising radiation doses, to ensure that they are as low as reasonably practicable (optimised), to establish local Diagnostic Reference Levels (DRLs), and to pay special attention to optimisation in children [1]. For adults, there is a range of UK national DRLs, but for children, national DRLs are sparse. The aim of this study was to review DRL formation techniques and approaches for paediatric diagnostic X-rays exposures.

Method

A comprehensive literature review was performed, analysing different approaches to paediatric DRLs. These different approaches were applied to multiple, local data sets to analyse the variation of results.

Results

Choice of data filtering technique, categorisation and approach impacted the resultant DRL, observable across different anatomical exposure types.

Conclusion

A range of methodologies are published within the literature for paediatric DRLs, each demonstrating relative merits. Difficulties can arise within categorised, limited data due to inherent variations in the paediatric population. A standardised approach is recommended for ensure comparable DRL formations.

1. Ionising Radiation (Medical Exposure) Regulations 2017 as amended in 2018 (IR(ME)R). Statutory Instruments, 2017 No. 1322, Health and Safety.

P045 A DICOM Middleware Broker to Resolve Accession Conflicts in Linear Accelerator Dose Tracking

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Background

IR(ME)R 2017 requires hospitals to record and evaluate radiation doses for all medical exposures, including Image-Guided Radiotherapy (IGRT). However, a technical hurdle often prevents accurate collection. LINAC-generated dose reports (RDSRs) typically reuse the Accession Number and Study UID from the planning CT. When these reports are sent to PACS, some PACS systems identify them as duplicates of the planning scan and either rejects them, or appends them as an additional RDSR report in the same planning scan. This prevents Dose Tracking Systems (DTS) from identifying distinct IGRT events, making it impossible to monitor the cumulative imaging dose a patient receives during treatment.

Method

We developed a middleware broker between the LINAC and PACS. The broker intercepts RDSRs to perform real-time header inspection, automatically modifying DICOM tags to assign each IGRT event a unique Accession Number and Study Instance UID. This ensures each verification scan is archived as a distinct record while remaining linked to the patient. This automated process requires no changes to clinical workflows at the LINAC.

Results

Since implementation, 100% of LINAC RDSRs have been successfully ingested. Radiation Safety staff monitored DTS data to verify accuracy, confirming the system provides a complete longitudinal dose history. This enables better trend analysis and ensures the department meets IR(ME)R requirements for monitoring doses from both planning and daily verification imaging.

Conclusion

This broker resolves UID conflicts that lead to lost or merged data. It ensures all IGRT exposures are visible, allowing for improved regulatory compliance and patient dose oversight.

1. Great Britain (2017). The Ionising Radiation (Medical Exposure) Regulations 2017. SI 2017/1322. London: The Stationery Office.

P046 Analysis and results from a UK national dose audit of paediatric contrast-enhanced CT abdomen-pelvis examinations

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Background

This study presents the outcomes of a UK-wide audit of radiation doses in paediatric contrast-enhanced CT scans of the abdomen and pelvis. Its primary goal is to establish national diagnostic reference levels (NDRLs) and to examine current scanning practices to identify areas for standardisation and improvement.

Method

In 2021, a comprehensive audit was carried out across UK imaging centres, focusing on paediatric patients undergoing contrast-enhanced CT abdomen-pelvis exams. The approach adhered to International Commission on Radiological Protection (ICRP) recommendations and built upon methodologies from earlier national audits. Data were gathered using a detailed template, capturing the key dose metrics of CTDIvol and DLP alongside patient weight, a critical factor for dose comparison.

Results

Findings revealed a clear trend: radiation dose metrics increased with patient weight. Disparities in dose levels were noted between specialist paediatric centres and general hospitals, indicating more refined dose management in the former. Variations in kV settings further underscored inconsistencies in imaging techniques. The dataset was robust enough to support the formulation of weight-based NDRLs.

Conclusion

The analysis confirmed that heavier paediatric patients receive higher radiation doses and that specialist centres demonstrate more uniform dose control practices. The observed differences in technical parameters, such as kV, highlight the need for harmonised protocols. The study supports the introduction of NDRLs tailored to weight categories.

P047 Assessment of imaging doses to organs at risk in Radiotherapy

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Introduction

Advanced radiotherapy require frequent imaging to ensure accurate target coverage. However, imaging verification doses are often unaccounted for, raising questions regarding normal tissue exposure. Between 17% - 19% of cancer survivors who have undergone radiotherapy, 5% may acquire secondary malignancies. Daily MV imaging is common during breast cancer radiotherapy at the study site as a departmental protocol, however doses to Organs at Risk (OARs) are unknown. The aim of the study was to assess OAR doses during breast cancer radiotherapy.

Methods

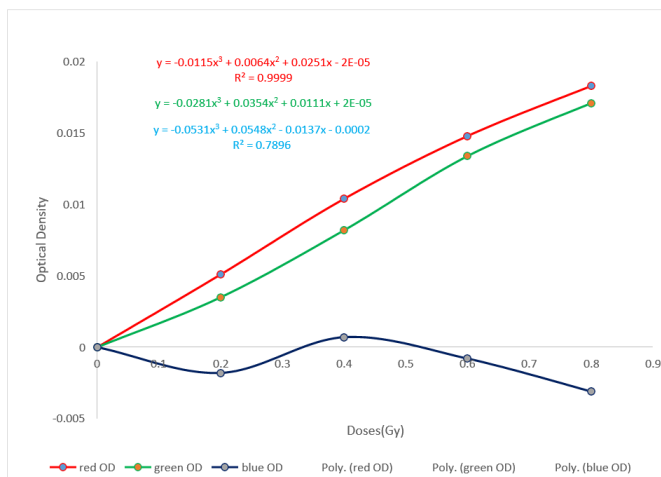
A female RANDO® phantom's thoracic region was exposed to anterior and oblique imaging fields simulating four treatment scenarios: left breast, right breast, left chest wall, and right chest wall. Gafchromic EBT2 films were placed in the left lung, right lung, heart, spine, and on the skin to measure absorbed doses during each procedure.

Results

Dose measurements across the four scenarios showed minimal variation. Both lungs received the highest daily doses, ranging from 18.4 to 19.8 mGy. The heart received between 6.7 and 10.1 mGy daily, while the skin absorbed the least, between 4.7 and 5.9 mGy, attributed to the skin-sparing effect of the 6 MV X-ray photon beam used.

Conclusion

Cumulative imaging doses over a standard fractionation period were significantly below established thresholds for deterministic effects in the assessed organs. Despite low cumulative doses, the potential increased risk of secondary cancers and other radiation-induced effects in the thoracic region underscores the need to optimize imaging doses and clinical procedures in breast cancer radiotherapy.



1. Ahiagbenyo, P., Gyekye, P., Inkoom, S., Asare, M., Lano, J.K., Pratt-Ainooson, F., Brobbey, E., Ampofo, R.Y. and Kyei, K.A., 2025. Assessment of megavoltage imaging dose to organs at risk in breast cancer radiotherapy. *Radiography*, p.103227.
2. Ismail, M., Hanifa, M.A.M., Mahidin, E.I.M., Manan, H.A. and Yahya, N., 2024. Cone beam computed tomography (CBCT) and megavoltage computed tomography (MVCT)-based radiomics in head and neck cancers: a systematic review and radiomics quality score assessment. *Quantitative Imaging in Medicine and Surgery*, 14(9), p.6963.
3. Engels, B., Tournel, K., Soete, G. and Storme, G., 2009. Assessment of rectal distention in radiotherapy of prostate cancer using daily megavoltage CT image guidance. *Radiotherapy and Oncology*, 90(3), pp.377-381.

P048 Imaging of pregnant patients on a total body PET-CT scanner optimised for CT image quality and fetal dose

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Background

PET-CT scans are generally avoided in pregnant women due to the presumed high radiation dose to the foetus. New-generation Total-body PET-CT utilises increased scanner sensitivity to deliver ultra-low radiation dose PET scans suitable for low-risk diagnostic investigation in pregnant patients [1]. These scans require optimisation of the CT component to aid diagnostic imaging decisions.

Method

An anthropomorphic phantom model of three trimesters of pregnancy was scanned at a range of CT protocols (Figure 1). Scan image quality metrics were matched with digital voxel phantoms to estimate foetal dosimetry at the relevant trimester [2]. Results were compared to retrospective pregnant patient image quality and foetal dosimetry estimates.

Results

A positive correlation between image quality and foetal dose was observed (see Figure 2). Threshold organ contrast detectability was found to be similar between phantom scans and patient scans.

Conclusion

PET-CT imaging can be performed on a Total-body scanner at total foetal doses below 1 mGy, a significant decrease from current diagnostic guidelines' estimate of up to 50 mGy [3]. CT imaging can be performed at a foetal dose of between 0.4 and 13 mGy, forming a gradient of diagnostic image views which can benefit a range of risk-benefit balances appropriate to individual patients and diagnostic pathways as the use of ultra-low dose PET-CT in pregnant patients increases.

Figure 1

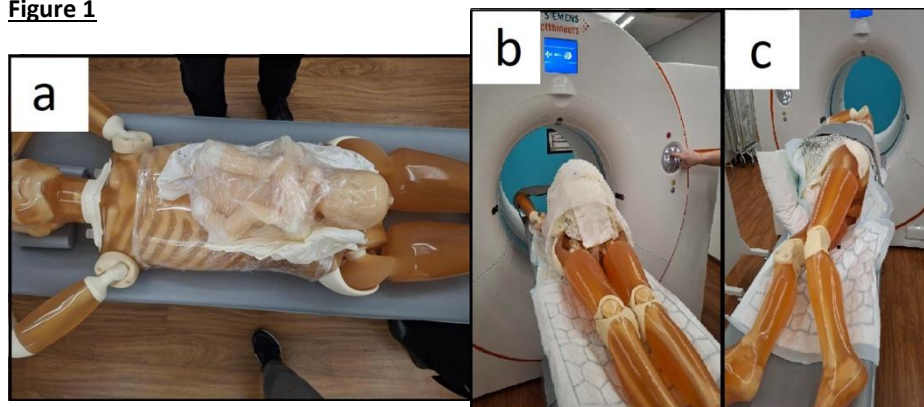
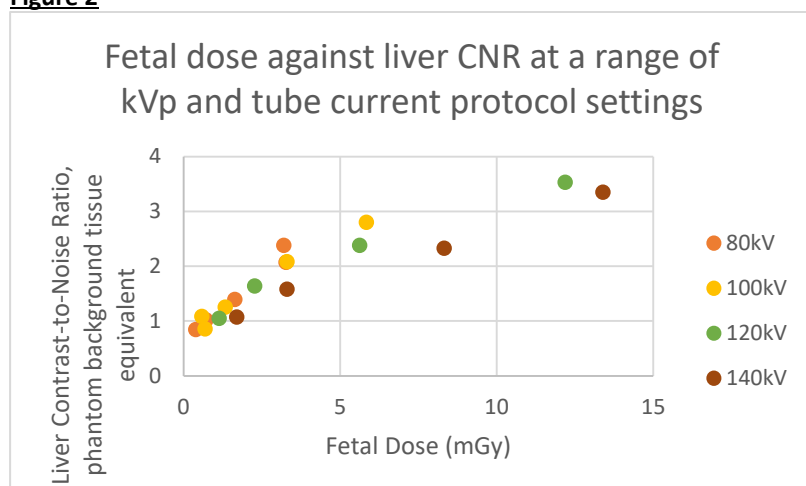


Figure 2



1. Smith C, Yaqub M, Wellenberg R, et al. Ultra-low fetal radiation exposure in 18F-FDG PET/CT imaging with a long-axial field-of-view PET/CT system. *Journal of Nuclear Medicine*. 2024;65:241441.
2. Lee C, Kim KP, Bolch WE, Moroz BE, Folio L. NCICT: a computational solution to estimate organ doses for pediatric and adult patients undergoing CT scans. *Journal of Radiological Protection*. 2015;35:891–909.
3. HPA, RCR, College of Radiographers. Protection of Pregnant Patients during Diagnostic Medical Exposures to Ionising Radiation. March 2009. Accessed December 24, 2025. <https://www.rcr.ac.uk/our-services/all-our-publications/clinical-radiology-publications/protection-of-pregnant-patients-during-diagnostic-medical-exposures-to-ionising-radiation/>.

P049 Quantitative evaluation of CT image quality using physical and clinical metrics: a scoping review

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Background

Optimising CT imaging protocols involves balancing radiation dose, image quality, and diagnostic performance. While quantitative image quality metrics are used, their connection to clinical assessment isn't always clear. A review of existing evidence is needed to better integrate physical and clinical metrics for protocol optimisation.

Aim

To map and synthesize existing literature on CT image quality assessment, focusing on quantitative physical metrics, clinical evaluation parameters, and how these measures guide CT protocol optimization.

Methods

A scoping review followed established procedures. Literature searches in PubMed, Scopus, and Web of Science used keywords like computed tomography (CT), CT image quality, dose optimisation, image noise, contrast-to-noise ratio (CNR), clinical image evaluation, and protocol optimisation. Studies were included if they reported quantitative CT image quality metrics with clinical or observer assessments. Exclusions were non-CT modalities, phantom-only studies, conference abstracts without full texts, and non-clinical studies. In total, 124 studies met the criteria and were synthesized.

Results

The studies revealed variability in CT image quality assessment. Physical metrics like image noise and CNR were common, while clinical focus was on contrast, anatomy, and diagnostics. Better physical metrics didn't always mean improved clinical perception. Studies emphasized combining quantitative metrics with clinical assessment for optimizing protocols without increasing radiation dose.

Conclusion

This review highlights the importance of combining quantitative image metrics and clinical image assessment in CT protocol optimisation. Using both methods creates a more robust, patient-centered framework for dose optimization and standardised strategies.

1. ICRU Report 87 – CT dose and image quality: <https://www.icru.org/report/radiation-dosimetry-and-image-quality-assessment-in-computed-tomography-icru-report-87/>
2. European Commission Diagnostic Reference Levels: <https://www.eu-alara.net/index.php/surveys-mainmenu-53/36-ean-surveys/156-drls.html>.

P050 The effect of arm positioning on total dose, organ dose and image quality in chest, abdomen and pelvis CT scans

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For chest, abdomen & pelvis (CAP) CT scans, patients routinely have their arms raised above their head. Placing arms by the patient's side increases the dose and the likelihood of streak artefacts resulting from the high attenuation of the elbow bones. The aim of this study was to assess changes in total examination dose, organ doses and image quality for CAP scans undertaken with a variety of arm positions.

An anthropomorphic phantom was scanned with the arms positioned above the head, and in a number of alternative positions that could be used clinically. Scanner displayed CTDIvol and DLP were used to assess the overall dose for the scans with varying arm positions. In-house python code was used to extract the average mA, water equivalent diameter and the global noise level for each image slice.

The largest increase in examination dose (56%) was for the scan performed with the arms by the phantom's sides, whilst keeping one arm up and one on a pillow across the front caused a 16% increase. Scans performed with both arms on a pillow yielded a 78% increase in lung dose and more than doubled the liver dose. The scanner's AEC system kept the global noise level for all scans within 5% of that for the standard arm position.

The results of this study reaffirm that the ideal arm position is above the patient's head. The observed changes in dose and image quality can enable Radiographers to make informed decisions about arm positioning for less-cooperative patients.

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3. Christianson O, Winslow J, Frush DP, Samei E. Automated Technique to Measure Noise in Clinical CT Examinations. AJR Am J Roentgenol. 2015 Jul;205(1):W93-9. doi: 10.2214/AJR.14.13613. PMID: 26102424.

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P051 The Importance of Patient Positioning in Radiography: When Utilising Automatic Exposure Control

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Introduction

Automatic exposure control (AEC) is commonly utilised for in-bucky imaging, such as for the chest, abdomen, pelvis and spine. There are many benefits to utilising the AEC where knowledge of the technology is thoroughly understood. Poor technique when utilising the AEC, however, will alter dose, and by extension, image quality. This study aimed to assess how patient mis-positioning when using AEC for chest, abdomen, lumbar spine and pelvic x-ray examinations affect patient dose and image quality?

Methods

An anthropomorphic phantom was marked every 1cm from the ideal centring point in each direction; superior, inferior, left lateral and right lateral, for up to 5cm of off-centring. Exposures were taken at each position and the tube current, air kerma and signal-to-noise ratios recorded for each exposure.

Results

Air-kerma changes ranged from a maximum reduction of 6.06%, 74.72%, 76.07%, and 35.66% for the chest, abdomen, pelvis and lumbar spine, respectively, to a maximum increased air kerma of 50.09%, 8.00% and 10.32% for the chest, pelvis and lumbar spine. The abdomen did not demonstrate any increased air-kerma results. Statistically significant changes ($p < 0.05$) to dose were observed in 54 of the 80 (67.5%) separate recordings. Changes to signal-to-noise ratio varied from a maximum negative change of 49.14% to a maximum positive change of 25.10%.

Conclusion

Statistically significant differences in dose were commonly discovered for mis-positioning beyond 1–2cm, which will likely occur within the clinical environment. Such variation in dose and signal-to-noise ratio identifies potential impacts to image quality and dose burden to patients.

P052 Establishing a Range of Doses that may be Recorded by Dosimeters when Travelling via Commercial Flight

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Background

Optically stimulated luminescence (OSL) dosimeters are widely used to monitor occupational radiation exposure. Sometimes these doses exceed an established dose investigation level (DIL) and thus an investigation must occur to determine event(s) that caused this. One consideration is the unintended dose accumulated during the air travel process, from security scans and cosmic radiation when dosimeters are accidentally taken on flights. The aim of this study is to evaluate the range of doses that may be recorded and if those alone can exceed a typical DIL.

Method

OSL dosimeter badges were given to individuals travelling by air, with instructions to place one badge in cabin luggage and one in hold luggage where applicable. The number of observable scans was also recorded over each round trip.

Results

Dosimeters in 15 cabin bags recorded a mean total dose of 1.2mSv (median 1.1mSv, range 0.46-3.2mSv). Dosimeters in 7 hold bags recorded a mean of 2.1mSv (median 1.2mSv, range 0.54-6.9mSv). Dose per scan was evaluated for the cabin bags giving a mean of 0.38mSv and median of 0.32mSv. The estimated mean dose from cosmic radiation was 0.046mSv. The mean dose contribution to the cabin bag results was 5.2%.

Conclusion

Doses recorded by dosimeters inadvertently taken on flights can be significant enough to trigger a dose investigation. The variable nature of the doses limits the ability to correct personal dose records to account for these doses in the absence of additional control badges. Staff should ensure that personal dosimeters are not accidentally taken on flights.

P054 Measuring What We Scan: Quantifying Appropriateness, Risk, and Waste in Modern Imaging

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Diagnostic imaging is central to modern medicine, yet the scale at which it is delivered has outpaced traditional approaches to clinical governance. Under IR(ME)R 2017, justification is a legal requirement, but in practice it remains difficult to apply consistently, hard to measure, and heavily dependent on the quality of referral information. The result is an appropriateness gap that affects patient safety, waiting lists, and system sustainability.

This examines that gap using contemporary quantitative evidence. Recent population-level modelling, including the 2025 JAMA projections of CT-associated cancer risk, demonstrates that inappropriate imaging carries a measurable long-term harm. Findings from the EU JUST CT multinational audit further reveal wide variation in appropriateness rates between countries, referrer groups, and anatomical regions, reinforcing that justification is a clinical skill shaped by education, workflow, and system design. Spine and abdominal CT emerge as particular pressure points, where over-utilisation and failure to prioritise non-ionising alternatives are common.

The session also addresses the referral quality crisis. Using the RI-RADS framework, it shows how incomplete or vague clinical requests undermine justification altogether, making safe benefit-risk assessment impossible and rendering large volumes of imaging legally and clinically fragile. Evidence linking guideline adherence to diagnostic yield is reviewed, highlighting that inappropriate scans add dose and delay without improving outcomes. The lecture argues that manual audit can no longer keep pace with modern imaging volumes. Outlining how automated, retrospective audit using AI can provide continuous insight into appropriateness, referral quality, and waiting-list inefficiency at scale, enabling targeted improvement while supporting regulatory compliance.

P055 Relocation Testing of Mobile CT Scanners: Ensuring Radiation Safety, Image Quality and Regulatory Compliance

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Background

Mobile CT scanners play an increasingly important role in addressing diagnostic capacity pressures across the NHS and private providers. Mobile units are relocated between hospital sites and clinics. This introduces variation in radiation environments, infrastructure, and clinical workflows. Each relocation represents a new installation and therefore requires robust checks to ensure patient safety, staff protection, and regulatory compliance. Variability exists in how relocation testing is implemented in practice.

Aims

To describe a structured, governance-led approach to relocation testing for mobile CT scanners.

Methods

A standardised relocation testing framework was implemented for mobile CT deployments across locations. This included Radiation Protection Adviser (RPA)-led radiation surveys, Medical Physics Expert (MPE) acceptance and recommissioning testing, image quality and dose verification, and site-specific risk assessments. Compliance was assessed against IRR17, IR(ME)R 2017, and HSE guidance. Documentation, sign-off processes, and clinical readiness checks were reviewed as part of quality management system assurance.

Results

A standardised approach to relocation testing confirmed that the lead shielding, both internal and external, remained in position and was providing protection to anyone close to the trailer during xray exposures. This process also ensured optimisation of scanning protocols to local diagnostic reference levels, ensured PACS/RIS connectivity prior to clinical use, and supported clear governance sign-off before patient scanning. The approach provided assurance to host provider, Radiation Safety Committees, and regulators.

A structured, multidisciplinary approach ensures compliance with UK radiation regulations, supports optimisation under IR(ME)R, and enables safe, high-quality imaging delivery across diverse environments.

1. The Ionising Radiation (Medical Exposure) (Amendment) Regulations 2024 (SI 2024/896). Available at: <https://www.legislation.gov.uk/uksi/2024/896/made> (Accessed: [02/02/2026]).

2. UK Government (2017) The Ionising Radiations Regulations 2017, Statutory Instrument 2017 No. 1075. London: The Stationery Office.

3. Health and Safety Executive (2018) Work with ionising radiation: Ionising Radiations Regulations 2017. Approved Code of Practice and guidance, L121 (2nd edn). Bootle: HSE.

P056 Applicability of PIRADS 2.1 scoring system to screen prostate cancer in a Ugandan population

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Background

Prostate Cancer (PCa) is highly incident in Africa. The Prostate Imaging Reporting and Data System (PIRADS) are used for detecting, staging, standardizing the acquisition, and reporting of BI-Parametric MRI (Bp-MRI). The PIRADS is a "living" document and through research should be tested and validated for different healthcare settings. There is hardly any literature on the applicability and accuracy of the PIRADS 2.1 to screen for PCa in sub-Saharan Africa. We sought to assess the applicability of the PIRADS 2.1 scoring system to screen PCa in sub-Saharan Africa.

Methods

A retrospective review of imaging requisitions was done, Bp-MRI, MRI reports, and histology reports including the Gleason score at an imaging institution in Uganda. We assessed the ability of PIRADS alone, PIRADS and prostate specific antigen density (PSAD), PIRADS and Apparent Diffusion Co-efficient (ADC), and PIRADS, PSAD and ADC-combination to discriminate a positive histological prostate case. We used the Area Under the Curve to determine the ability of PIRADS 2.1 to discriminate PCa.

Results

We reviewed 234 patient records and of these 99 were aged 65-74 years, 48.7% were PCa histology-confirmed cases. PIRADS alone had an AUC 0.70, a combination of PIRADS V2.1 and PSAD had an AUC score 0.73 while combination of PIRADS V2.1, PSAD and ADC had an AUC 0.72.

Conclusion

The accuracy of PIRADS for PCa discrimination is acceptable with AUC 70%. Predominantly peripheral zone location together with the low Gleason score and the background changes of chronic prostatitis may account for the low PIRADS cancer prediction.

ACR (2015) "Prostate Imaging – Reporting and Data System 2015 version 2." Available at: <https://www.acr.org/Clinical-Resources/Clinical-Tools-and-Reference/Reporting-and-Data-Systems/PI-RADS>.

Turkbey, B. et al. (2019) "Prostate imaging reporting and data system version 2.1: 2019 update of prostate imaging reporting and data system version 2," European urology, 76(3), pp. 340–351.

Wang, L. et al. (2022) "Prostate cancer incidence and mortality: global status and temporal trends in 89 countries from 2000 to 2019," Frontiers in public health, 10, p. 811044.

P057 Evaluation of Cone Beam Computed Tomography (CBCT) as the sole imaging modality for 20# prostate Image Guided Radiotherapy (IGRT)

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Background

Prostate radiotherapy represents a significant proportion of departmental workload; therefore, workflow optimisation is crucial to maintain efficiency without compromising treatment quality. Fiducial marker free prostate treatment was implemented in May 2022; a daily online soft tissue match CBCT was preceded by kV orthogonal pair to rule out any gross error/pitch/rotation. Continuous review of local practices is essential to ensure compliance with national guidance and service needs. A study was carried out to assess the feasibility of using CBCT as the sole imaging modality for 20# localised prostate treatment.

Method

A total of 30 patients receiving 60Gy in 20# to localised prostate only were included in this evaluation. A CBCT was performed as the sole imaging modality prior to treatment delivery, with online soft tissue match undertaken daily. During the offline review process radiographers undertook both a bone and soft tissue match and recorded the match findings. Data was collated and reviewed for the presence of gross errors and resultant actions.

Results

On review of the collated data, 93% of patients required no intervention throughout the course of their treatment. The remaining 7% required kV orthogonal imaging to be added due to issues with pelvic tilt.

Conclusion

This evaluation provides evidence that the additional dose from the kV orthogonal pair can no longer be justified in 20# localised prostate only external beam radiotherapy, except in cases where excessive pelvic tilt is evident. Therefore, routine kV orthogonal matching can be ceased for dose and workflow optimisation.

The Royal College of Radiologists. (2021) On target 2: updated guidance for image-guided radiotherapy. London: The Royal College of Radiologists

UK Government. (2017) The Ionising Radiation (Medical Exposure) Regulations 2017. London: The Stationery Office. (SI 2017/1322).

P058 Acalculous cholecystitis: Review of the complementary role of Ultrasound and HIDA scans

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Introduction

Patients with both calculous and acalculous cholecystitis can present with right upper quadrant pain. Ultrasound is the key imaging tool to confirm / exclude calculous cholecystitis. Patients with normal ultrasound but with typical clinical features of cholecystitis can be considered to have acalculous cholecystitis. However, 20% to 100% cases are either normal or inconclusive on US while diagnosing acalculous cholecystitis and some patients may require further imaging techniques for confirmation such as HIDA Scans. In this study, we wanted to review the role of HIDA scans in patients presenting with right upper quadrant pain and with a clinical suspicion of acalculous cholecystitis.

Method and Results

A retrospective study was conducted among 58 patients (M: F 19: 39; age range 19- 77 years) during an 18 months period from June 2024 were reviewed. 52 (90%) had normal US and 6 (10%) had mildly abnormal Ultrasound scan features (2 had gall bladder sludge, 1 each had features of chronic cholecystitis fibroadenosis and 2 inconclusive). Among these 52 patients 42(80%) patients had an abnormal HIDA scans, indicating gall bladder dysfunction / dysmotility secondary to acalculous cholecystitis and the rest 10 (20%) were normal.

Conclusion

Patients presenting with right upper quadrant pain can benefit from a step-wise approach to imaging. Ultrasound is useful for confirming calculous cholecystitis, while a HIDA scan can be useful in the cohort with continued clinical suspicion and normal or inconclusive ultrasound scan findings, thereby confirming acalculous cholecystitis in most of such patients.

P059 “The Good, the Bad, and the Leaky”: Post-Operative Cystogram Appearances

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Background

Urological reconstructive surgery involves surgical procedures aiming to repair, restore or improve the function or structure of the urinary tract. This can include reimplanting the ureter into the bladder, increasing the bladder capacity for people with congenital abnormalities, or replacing the bladder post radical cystectomy

Purpose

Illustrate normal appearances of the lower urinary tract at cystoscopy post reconstructive surgery, highlighting the different techniques that are used surgically.

Summary of Content

A pictorial review of the different reconstruction techniques used by Urological surgeons and the expected appearances at fluoroscopic cystography, showing normal appearances and leaks.

P060 A novel diagnostic criterion for the determination of constipation in scoliosis: the Birmingham Scoliosis Poo Index (BSPI) and evaluation of constipation in patients with learning

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Background

Adolescent idiopathic scoliosis is a 3D spinal deformity resulting in lateral deviation and twisting of the spinal column. As a result, this can disrupt the normal truncal anatomy, causing gastrointestinal pathology such as constipation. In patients with learning disabilities, this can pose as an additional clinical challenge due to a potential inability to communicate their symptoms. This highlights the need for a separate radiological classification to advocate for these patients.

Methods

A retrospective study was conducted at a UK tertiary orthopaedic hospital. AP radiographs of 200 patients (100 with LD; 100 without LD) were analysed. The BSPI was calculated as the ratio of rectal width to femoral head diameter. Constipation was defined using established reference standards (rectal width >3.2 cm). Two independent reviewers performed measurements to assess inter-observer reliability.

Results

In the LD cohort, the mean BSPI was significantly higher in constipated patients compared to non-constipated patients (1.89 ± 0.50 vs. 0.68 ± 0.49 ; $p < 0.0001$). Similarly, in the non-LD cohort, the BSPI was significantly higher in the constipated group (2.14 ± 0.84 vs. 1.26 ± 0.43 ; $p < 0.0001$). The BSPI demonstrated strong inter-observer reliability with a Cohen's kappa value of 0.8.

Conclusion

To conclude, the Birmingham Scoliosis Poo Index can be used as a personalised radiological classification of constipation in patients with scoliosis. Furthermore, this study concludes that patients with learning difficulties and scoliosis have a higher rate of constipation compared to scoliosis patients without learning difficulties.

P061 A systematic approach to multiparametric MRI of the prostate

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Background

Multiparametric MRI (mpMRI) of the prostate is an essential tool in the diagnosis, staging, and surveillance of prostate cancer. As demand for prostate MRI increases, there is a growing need for a consistent and structured approach to interpretation, particularly among trainees and new consultants. A clear framework ensures reliable detection of clinically significant disease, facilitates effective communication with referring clinicians, and supports adherence to Prostate Imaging Reporting and Data System (PI-RADS) v2.1. However, these specialised examinations can be challenging to interpret and confidently present at multidisciplinary team meetings (MDTs).

Purpose

The purpose of this poster is to provide guidance on how to approach prostate MRI interpretation, highlighting key anatomy, typical pathologies, and common diagnostic errors. Learning outcomes include improved understanding of zonal anatomy, lesion localisation, and multiparametric sequence analysis, supporting accurate PI-RADS scoring, improved diagnostic confidence, and enhanced inter-observer agreement.

Summary of Content

This poster outlines a systematic approach to prostate mpMRI interpretation, focusing on zonal anatomy, lesion localisation, and characterisation across key imaging sequences, including T2-weighted imaging, diffusion-weighted imaging (DWI), and dynamic contrast-enhanced (DCE) imaging. Integration of these findings enables accurate PI-RADS scoring and appropriate risk stratification. Common diagnostic pitfalls are addressed, including misinterpretation of benign entities such as prostatitis, post-biopsy change, and benign prostatic hyperplasia. By promoting a structured interpretative framework, the poster aims to enhance diagnostic confidence and support the production of high-quality, clinically actionable reports, ultimately contributing to improved patient care.

1. Verma, S. and Rajesh, A. (2011). A Clinically Relevant Approach to Imaging Prostate Cancer: Review. *American Journal of Roentgenology*, 196(3_supplement), pp.S1–S10. doi:<https://doi.org/10.2214/ajr.09.7196>.
2. Maria Clara Fernandes, Onur Yildirim, Woo, S., Hebert Alberto Vargas and Hedvig Hricak (2022). The role of MRI in prostate cancer: current and future directions. *Magnetic Resonance Materials in Physics, Biology and Medicine*, 35(4), pp.503–521. doi:<https://doi.org/10.1007/s10334-022-01006-6>.

P062 Benchmarking PI-RADS v2.1 Positive Predictive Value in a Single-Centre Prostate Biopsy Cohort

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Background

Multiparametric MRI (mpMRI) is the cornerstone of prostate cancer diagnosis, with PI-RADS v2.1 providing standardised reporting to guide biopsy decisions. Positive predictive value (PPV) is a clinically meaningful radiological performance metric, reflecting biopsy yield following a positive mpMRI. Benchmarking local performance against published data underpins quality assurance.

Methods

A single-centre retrospective audit was performed in a selected prostate biopsy cohort comprising 590 men with suspected prostate cancer and mpMRI PI-RADS ≥ 3 . Clinically significant prostate cancer (csPCa) was defined as Gleason ≥ 7 . Multivariable logistic regression analysis was performed on calculated csPCa PPV stratified by PI-RADS category, PSA density (PSAD) and reading radiologist, and benchmarked against the Westphalen et al. (2020) multicentre study.

Results

csPCa PPV increased with PI-RADS scores and exceeded published benchmark values, consistent with cohort enrichment: 34.3% (PI-RADS 3), 64.1% (PI-RADS 4) and 91.7% (PI-RADS 5). PSAD improved PPV across PI-RADS categories, exceeding 90% in PI-RADS ≥ 4 lesions with a PSAD ≥ 0.30 ng/mL/cm³. In PI-RADS 3 lesions, PPV increased above a PSAD threshold of 0.15 ng/mL/cm³ but diminished at very high values. PSAD was the sole independent predictor of csPCa on multivariable analysis. No statistically significant inter-reader differences were identified.

Conclusion

In this single-centre cohort, PI-RADS v2.1 demonstrated PPV performance concordant with the landmark multicentre study by Westphalen et al. PSA density provides valuable adjunctive risk stratification for equivocal lesions but does not overcome inherent imaging uncertainty at high thresholds. These findings reinforce confidence in PI-RADS-based reporting and PPV as a clinically relevant metric within mpMRI-led diagnostic pathways.

1. Mazzone, E., Stabile, A., Pellegrino, F., et al. (2021) Positive predictive value of Prostate Imaging Reporting and Data System version 2 for the detection of clinically significant prostate cancer: a systematic review and meta-analysis. *European Urology Oncology*. 4(6), 697-713.
2. Westphalen, A.C., McCulloch, C.E., Anaokar, J.M., et al. (2020). Variability of the positive predictive value of PI-RADS for prostate MRI across 26 centers: experience of the Society of Abdominal Radiology Prostate Cancer Disease-focused Panel. *Radiology*. 296(1), 76-84.

P063 CT Colonography Audit: Evaluation of Technique and Diagnostic Yield in 509 Patients Over a 20-Month Period

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Background

CT colonography (CTC) is a minimally invasive alternative to optical colonoscopy for detecting colorectal pathology. Adherence to Royal College of Radiologists (RCR) and ESGAR standards is essential to maintain diagnostic quality and patient safety. This audit evaluated technical performance, reporting practice and diagnostic yield in a district general hospital.

Methods

A retrospective audit of 509 CTC examinations performed between March 2023 and November 2024 was undertaken. Data were extracted from radiology systems and reports, including bowel preparation, colonic distension, use of Buscopan and IV contrast, patient positioning and structured reporting. Colonic and extracolonic findings were reviewed and categorised using C-RADS/E-RADS where documented. Compliance with standards and clinically significant findings were analysed.

Results

Dual-position scanning was achieved in 98% of cases. Buscopan use reached 90.5%, while IV contrast was administered in 52% of examinations. Adequate bowel preparation and colonic distension were achieved in 77% and 83% respectively. Colonic findings included 22 confirmed malignancies and 112 polyps. Diverticular disease and other benign abnormalities were also common. Extracolonic findings were frequent, including renal cysts, hernias and degenerative changes, with several clinically significant malignancies identified, including renal, bladder, lymphoma recurrence and hepatobiliary cancers.

Conclusion

CTC demonstrates strong diagnostic value for both colonic and extracolonic pathology. Most technical standards were achieved, though improvements are required in documentation, bowel preparation and structured reporting. Royal College of Radiologists. Standards for the provision of CT colonography in the UK. London: RCR; 2017.

European Society of Gastrointestinal and Abdominal Radiology (ESGAR). ESGAR consensus statement on CT colonography reporting and data collection. *Eur Radiol.* 2012;22(1):37–45.

Pickhardt PJ et al. Computed tomographic virtual colonoscopy to screen for colorectal neoplasia in asymptomatic adults. *N Engl J Med.* 2003;349(23):2191–2200.

Pooler BD et al. Potentially important extracolonic findings at screening CT colonography: incidence and outcomes. *AJR Am J Roentgenol.* 2016;206(2):313–318.

P064 Delayed complications following a liver biopsy: A multistep interventional radiology management case

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Background

Percutaneous liver biopsy is a widely performed diagnostic procedure with a low complication rate. However, delayed complications such as haemorrhage and secondary infection can occur and present diagnostic and management challenges. Imaging plays a crucial role in detecting complications, monitoring progression, and guiding intervention.

Purpose

This poster highlights the importance of post-biopsy vigilance and demonstrates a stepwise, imaging-guided interventional radiology (IR) approach to managing delayed complications. Learning outcomes include improved recognition of delayed complications, understanding imaging-guided escalation of care, and appreciation of multidisciplinary team (MDT) decision-making in optimising outcomes.

Summary of Content

We present a case of a middle-aged woman who underwent an uncomplicated ultrasound-guided, non-targeted liver biopsy for abnormal liver function tests and suspected autoimmune disease. Several days later, she developed persistent right upper quadrant pain. CT imaging demonstrated a subcapsular haematoma. As she was haemodynamically stable with no active contrast extravasation, conservative management with close clinical and radiological surveillance was initiated following MDT discussion.

Follow-up imaging showed haematoma enlargement, raising concern for ongoing bleeding. Selective angiography identified a bleeding arterial branch, and transarterial embolisation was performed successfully. Despite this, the patient deteriorated, and subsequent imaging revealed secondary infection with abscess formation. She was treated with prolonged intravenous antibiotics and ultrasound-guided percutaneous drainage, resulting in gradual clinical improvement.

This case illustrates the evolving nature of post-biopsy complications and underscores the importance of continuous reassessment, timely escalation, and multidisciplinary collaboration.

1. Piccinino, F., Sagnelli, E., Pasquale, G. and Giusti, G. (1986). Complications following percutaneous liver biopsy. A multicentre retrospective study on 68,276 biopsies. *Journal of Hepatology*, [online] 2(2), pp.165–173. doi:[https://doi.org/10.1016/s0168-8278\(86\)80075-7](https://doi.org/10.1016/s0168-8278(86)80075-7).

2. Thampanitchawong, P. (2000). Liver biopsy: complications and risk factors. *World Journal of Gastroenterology*, 5(4), p.301. doi:<https://doi.org/10.3748/wjg.v5.i4.301>.

P065 Evaluating a Higher PSA Threshold for PSMA PET-CT After Radical Prostatectomy

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Background

Prostate cancer is a leading cause of cancer-related mortality among men in the UK (Cancer Research UK, 2026). Following radical prostatectomy, prostate-specific antigen (PSA) is monitored to detect biochemical recurrence. At PSA ≥ 0.2 ng/mL, current guidance recommends prostate-specific membrane antigen positron emission tomography-computed tomography (PSMA PET-CT) (The Royal College of Radiologists et al., 2022). Although PSMA PET-CT offers excellent diagnostic performance, it is expensive, resource-intensive, and of limited availability. At low PSA levels, imaging often demonstrates local/pelvic nodal disease, for which salvage radiotherapy may be offered regardless of imaging findings. We aim to assess whether increasing the PSA threshold from ≥ 0.2 ng/mL to >0.4 ng/mL improves diagnostic yield and optimises imaging resource utilisation without compromising detection of clinically significant disease.

Methods

Data were collected retrospectively from the local imaging database for all PSMA PET-CT scans performed for biochemical recurrence following radical prostatectomy at a tertiary centre between 2022 and 2025. Inclusion criteria comprised patients who underwent radical prostatectomy $\pm$ radiotherapy with PSA ≥ 0.1 ng/mL. Exclusion criteria included patients treated with radiotherapy alone and those receiving androgen deprivation therapy.

Results

Of 350 included patients, those with PSA ≤ 0.4 ng/mL ($n=52$) demonstrated a PSMA PET-CT positivity rate of 34.6%. Among positive scans, 83.3% showed only local/pelvic nodal disease. Only 5.8% demonstrated suspicious distant metastases, predominantly solitary rib lesions (3.8%, $n=2$) resolved post-stereotactic ablative radiotherapy; the remaining case (1.9%, $n=1$) had negative follow-up scans.

Conclusion

Raising the PSA threshold for PSMA PET-CT to >0.4 ng/mL prioritises imaging with greater impact on clinical management, supporting efficient use of limited resources.

1. Cancer Research UK (2026) Cancer statistics – prostate cancer. Available at: <https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/prostate-cancer> (Accessed: 2 February 2026).

2. The Royal College of Radiologists, Royal College of Physicians, British Nuclear Medicine Society and Administration of Radioactive Substances Advisory Committee (2022) Evidence-based indications for the use of PET-CT in the United Kingdom 2022. London: RCR, pp. 49–52.

P066 MRI tumour-capsule contact length for predicting pathological T3a disease in prostate cancer

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Background

Accurate pre-operative identification of extraprostatic extension (EPE; pathological T3a disease) is essential for prostate cancer staging and surgical planning. Although multiparametric MRI is the reference for local staging, qualitative MRI features of EPE demonstrate variable sensitivity and inter-reader agreement. Tumour-capsule contact length (TCCL) is a quantitative MRI biomarker associated with pathological EPE, but thresholds remain heterogeneous across studies.

Methods

A retrospective review was performed of consecutive patients undergoing radical prostatectomy with pre-operative MRI between January 2024 and August 2025. Pathological staging at prostatectomy was the reference standard, with EPE defined as T3a disease. TCCL was measured as the maximum linear extent of tumour abutting the prostatic capsule on MRI, using dynamic contrast-enhanced sequences for multiparametric studies or the sequence demonstrating maximal contact for biparametric studies. Diagnostic performance was assessed using receiver operating characteristic analysis and Youden index optimisation.

Results

A total of 303 patients were included (EPE-negative: 122; EPE-positive: 181). Mean TCCL was 10.5 mm (range 0–43 mm). TCCL was significantly greater in EPE-positive disease ($p < 0.001$). Receiver operating characteristic analysis demonstrated discrimination for predicting EPE, with an area under the curve of 0.87 (95% CI 0.83–0.91). The Youden-optimal threshold was 7.5 mm (sensitivity 0.89, specificity 0.80, accuracy 0.86). Adjacent TCCL thresholds demonstrated predictable sensitivity-specificity trade-offs, consistent with low-, intermediate-, and high-risk stratification.

Conclusion

MRI-measured tumour-capsule contact length is a robust quantitative predictor of pathological T3a disease in prostate cancer. A threshold of 7.5 mm provides risk stratification and improves pre-operative staging confidence beyond qualitative MRI.

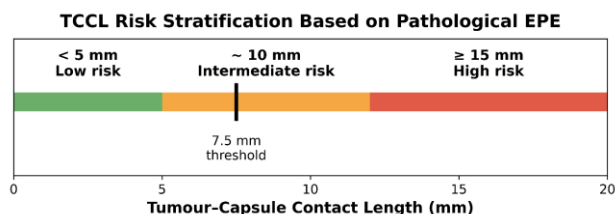


Figure 1. Tumour capsule contact length risk stratification for pathological extraprostatic extension with low, intermediate and high-risk bands and a 7.5 mm optimal threshold.

1. Kim, T.H., Woo, S., Han, S. and Suh, C.H. (2020) Diagnostic performance of length of tumour capsular contact on MRI for detecting prostate cancer extraprostatic extension: a systematic review and meta-analysis. *Korean J Radiol.* 21, 684-694.
2. Rosenkrantz, A.B., Chandarana, H., Gilet, A., Deng, F.M., Melamed, J. and Taneja, S.S. (2016) Length of capsular contact for diagnosing extraprostatic extension on prostate MRI: assessment at an optimal threshold. *J Magn Reson Imaging* 43, 990-997.

P067 Radiographer involvement in Computed Tomography Colonography interpretation: A survey of United Kingdom practice

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Background

With a projected 39% UK radiologist shortage by 2029, interest is growing in radiographer Computed Tomography Colonography (CTC) interpretation. However, knowledge around current numbers of radiographer reporters, their training and performance monitoring is limited.

Methods

Using adverts on social media, and emails from clinical interest groups and the National CTC Academy, UK radiographers who work in services with CTC radiographer interpretation were invited to participate in an online survey (JISC Online Surveys) from September to December 2025. Ethical approval was obtained (UCL:1790).

Results

Of 45 respondents, 53% (24/45) currently interpret CTC, 11% (5/45) had previously, and 13% (6/45) are in training. Among the 35 with interpretation experience, 4 (11%) reported no formal external training. Locally assessment occurred in 74% (26/35) on a variable number of CTC cases (range 50 to 350). Target sensitivity (95% to 98%) was used by 9 respondents, while polyp detection rate was used by three respondents (target score - 95% for 6mm+ lesions). Local mentorship while training was provided by radiologists 49% (17/35), radiographers (2/35), a mix of both (14/35), with 2 with receiving none. Half of current reporters (13/24) interpret 16 to 40 cases per week: only 1 exceeding the recommended maximum of 8 CTCs per session [1]. Audit was universal: 88% (21/24) undertook personal audit, while 3 were audited by their CTC-service.

Conclusion

Although a limited sample, this study increases understanding of radiographer CTC training, competency and auditing practice. All current CTC reporting by radiographers has some form of audit of performance in place.

1. Royal College of Radiologists and British Society of Gastrointestinal and Abdominal Radiology. (2021) Standards of practice for computed tomography colonography (CTC). Joint guidance from the British society of gastrointestinal and abdominal radiology and the royal College of radiologists. Accessed 20th Jan 2026. <https://www.rcr.ac.uk/publication/standards-practice-computed-tomography-colonography-ctc-joint-guidance-british-society>.

P068 Rare Multinodular Epithelioid Malignant Mesothelioma of the Tunica Vaginalis Without Asbestos Exposure: A Case Report and Ultrasound Presentation

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Background

Malignant mesothelioma of the tunica vaginalis (MMTV) is rare, accounting for less than 1% of all mesotheliomas. Diagnosing MMTV can be challenging due to its non-specific clinical and radiological presentation, which is often obscured by a chronic hydrocele.

Methods

A 69-year-old male with no history of asbestos exposure, scrotal surgeries, or infections was initially suspected to have a large hydrocele on clinical examination and presented to the ultrasound department. Testicular ultrasound scan to assess the tunica vaginalis and beyond to identify any lesions concealed by the hydrocele. The patient was treated with a radical left orchiectomy, and the specimen was sent for histopathology.

Results

Ultrasound revealed turbid fluid with internal echoes within the scrotal sac with multiple hypoechoic, irregular, nodular adherent lesions in the tunica vaginalis. The MRI scan reported a large complex left encysted hydrocele with peripheral nodular opacities attached to the wall. Histopathology confirmed a malignant epithelioid neoplasm, positive for Pan-CK (AE1/3, Calretinin, WT1, vimentin. CK5/6, CK7 and BerEP4), thus confirming the diagnosis of an epithelioid malignant mesothelioma of the tunica vaginalis. The patient has recovered well and is in good health, and post-surgical CT of the thorax, abdomen, and pelvis appears normal.

Conclusions:

While most cases report a single nodule or papillary excrescence in the tunica vaginalis, our case illustrates a multi-nodular variant with a chronic complex hydrocele. This suggests that MMTV can also present as multiple nodules without prior asbestos exposure. To optimise outcomes, a multidisciplinary team, including sonographers, radiologists, urologists, and histopathologists, is necessary.

1. Sonograms

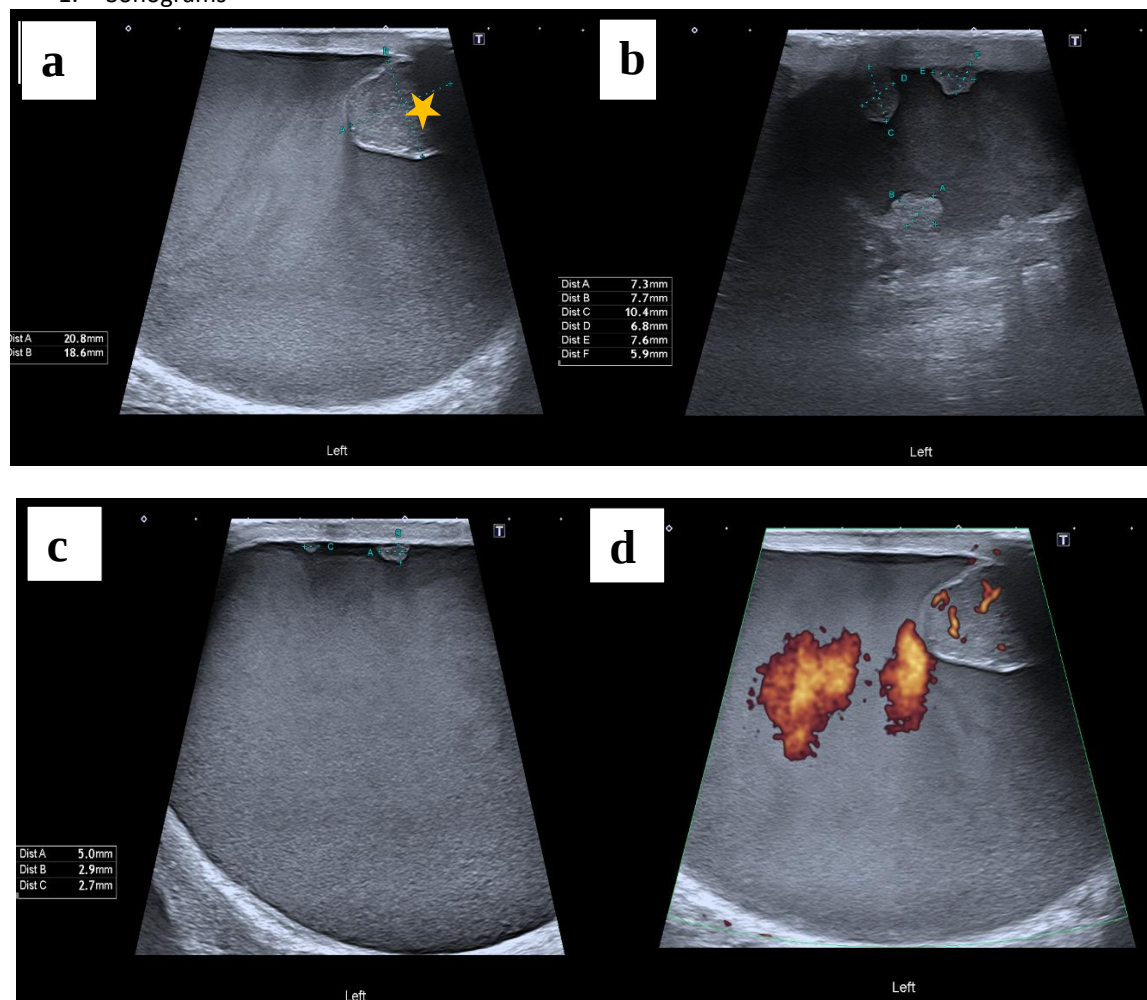


FIGURE 1a - d Longitudinal ultrasound scan section through a turbid hydrocele showing multifocal nodules with the largest nodule (Figure 1a: golden-coloured star) measuring 21mm × 19 mm.

2. MRI Images

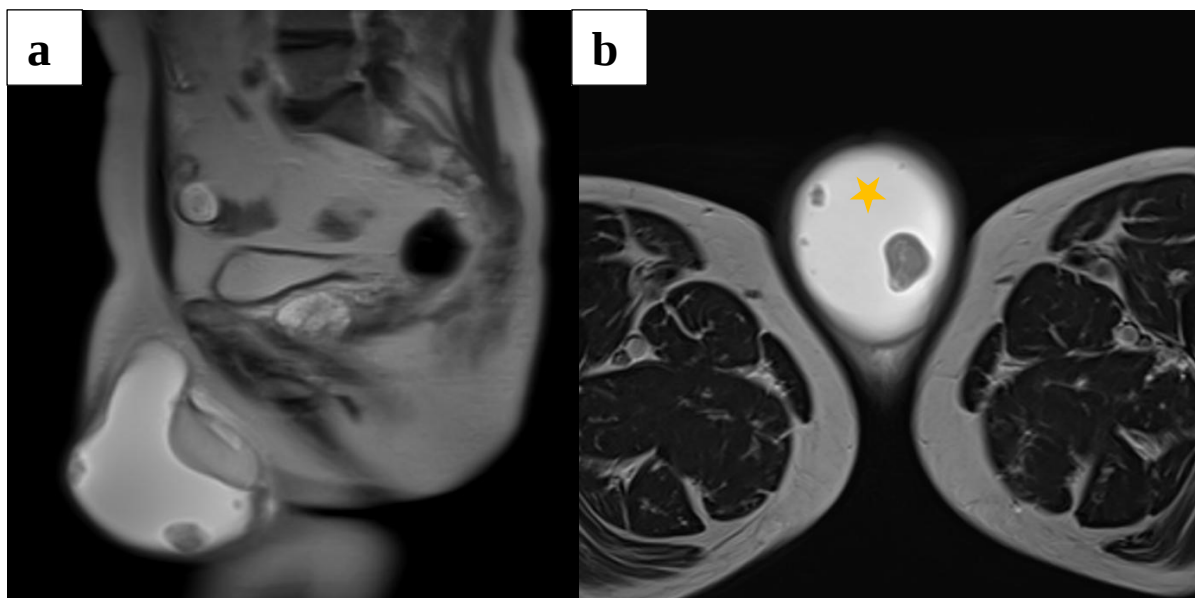


FIGURE 2. MR images of an encysted hydrocele (star) with peripheral nodular opacities attached to the wall.

3. Histopathology Slide Images

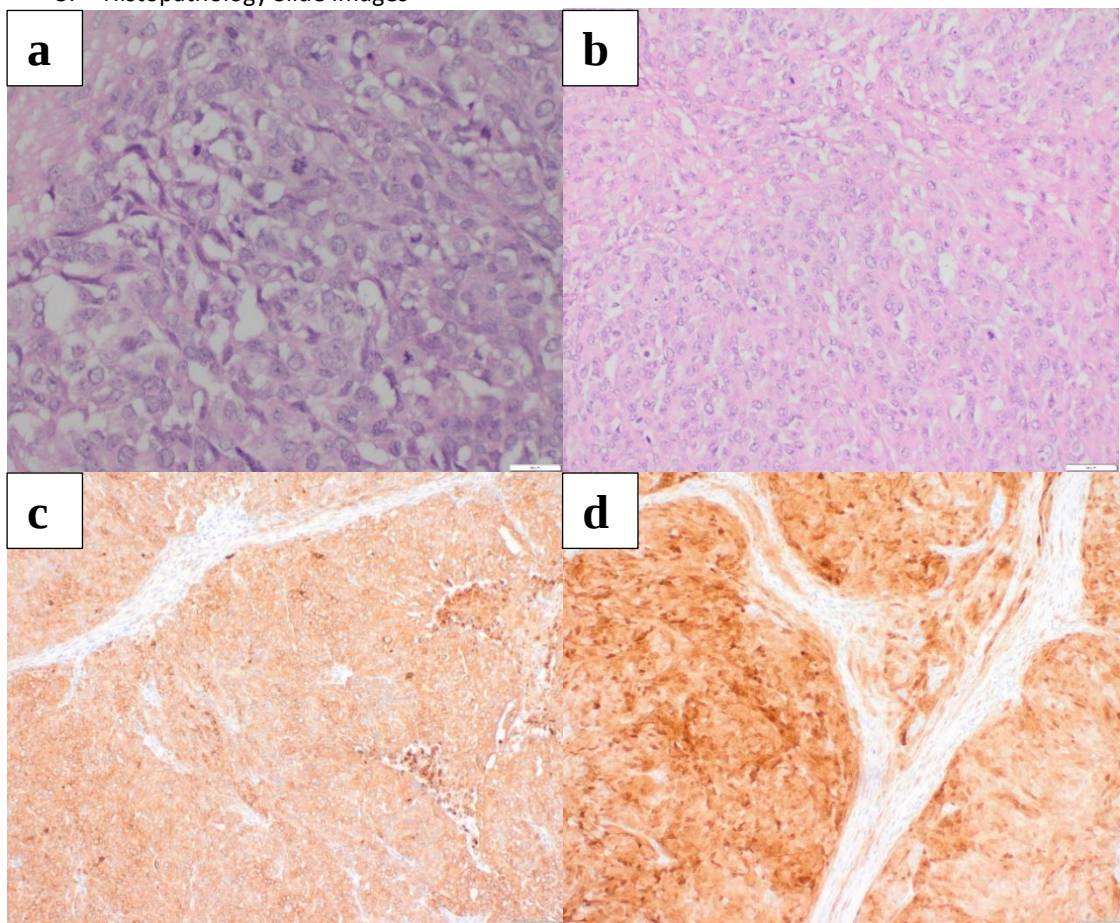


FIGURE 3. Microscopic sections of the testicular neoplasm.

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Emile, S. H., Balata, M., Elfallal, A. H., & Abdelnaby, M. (2019). Malignant Mesothelioma of the Tunica Vaginalis: Incidental Diagnosis of a Rare Condition. *Indian Journal of Surgery*, 81(1), 80–82. <https://doi.org/10.1007/S12262-018-1778-4>.

P069 Audit of U2 biopsies in the 25-29 age group

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Background

At our hospital, biopsies are performed on all U2 solid lesions in patients above 25 years of age. Latest RCR guidance (October 2025) suggests an age-cut off of 30 years for U2 biopsy if supported by robust local audit.

Aim

To review biopsy results of U2 solid lesions in the 25-29 year age group and whether these resulted in non-benign diagnoses.

Method

A retrospective review was conducted of all procedures coded ultrasound guided core biopsy breast (left/right/both) between January 2023 – December 2024. Reports were searched for a U2 grading. Histology (B grading) was reviewed on EPR (electronic patient records). Radiological or surgical excision results were reviewed where applicable.

Results

- 189 U2 biopsies performed
- B1: 8 cases
- B2: 173 cases
- B3: 8 cases
- 3 cases confirmed to be fibroadenomas on excision.
- 4 cases of Phyllodes tumour - All 4 cases required biopsy regardless of age given increasing size of lesion.
- 1 case of papilloma - On review of images, this was not clearly a U2 lesion with potentially ill-defined margins.

Conclusion

The majority of U2 lesions in the 25-29 age group had a B2 result. All patients with B3 results had other indications for biopsy regardless of age (most commonly increasing size of lesion). No B4 or B5 results. Findings support raising our age cut-off to 30 years for U2 lesions, in keeping with new RCR guidelines. No cases of malignancy would have been missed in this patient cohort with this raised age cut-off.

1. Meeting Abstracts from the British Society of Breast Radiology Annual Scientific Meeting 2024. *Breast Cancer Res* 27 (Suppl 1), 98 (2025). <https://doi.org/10.1186/s13058-025-02023-8>

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P070 When a Hernia Isn't a Hernia: CT and PET Clues to an Aggressive Inguino-Pelvic Malignancy

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Background

Inguinal swellings in elderly patients are commonly attributed to hernias; however malignant nodal or soft-tissue neoplasms may present similarly. Cross-sectional and metabolic imaging play a crucial role in characterising atypical inguinal masses, determining disease extent and guiding staging and management. Early recognition of imaging red flags prevents misdiagnosis and delays in oncologic referral.

Case presentation

A 74-year-old male presented with rapidly enlarging right inguinal swelling with prior history of inguinal hernia. Contrast-enhanced CT revealed a large heterogeneously enhancing soft-tissue mass in the right lower abdomen and inguinal region with internal necrosis. The right external iliac vessels traversed the lesion without thrombosis or occlusion. Multiple enlarged necrotic para-aortic, iliac and inguinal lymph nodes were noted. An enhancing lytic lesion in the right superior pubic ramus suggested osseous involvement and metastatic disease. FDG PET-CT demonstrated intensely FDG-avid right inguinal and external iliac nodal mass with additional retroperitoneal and mediastinal nodal uptake and metabolically active skeletal lesions, consistent with disseminated systemic disease.

Histopathology:

Biopsy from the inguinal mass revealed a high-grade malignant neoplasm composed of pleomorphic tumor cells with hyperchromatic nuclei, high nuclear-cytoplasmic ratio and brisk mitotic activity, suggestive of high-grade malignant mesenchymal tumor. Immunohistochemistry correlation was advised.

Conclusion & learning points:

Multimodality imaging suggested aggressive metastatic malignancy mimicking inguinal hernia.

- Rapidly enlarging inguinal masses require cross-sectional imaging.
- Vascular encasement or traversal without thrombosis suggests neoplastic etiology.
- Necrotic nodes and skeletal lesions indicate systemic disease.
- PET-CT aids staging and treatment planning
- CT is essential for diagnosis, staging and biopsy guidance.

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O'Sullivan, G.J., Carty, F.L. and Cronin, C.G., 2010. Imaging of soft-tissue tumours. Radiologic Clinics of North America, 49(6), pp.1219–1234.

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P071 B3 breast lesions, should we be worried about 0-3 year upgrades?

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Background

Breast lesions of uncertain malignant potential (B3) have an increased risk of subsequent breast cancer ranging from 0-30% (1, 2) Guidance from the UK published in 2016 recommend excision (vacuum assisted or surgical) followed by yearly surveillance for 5 years (3,4). In 2025 UK Breast screening guidance was updated changing the follow up period for any B3 breast lesion, suggesting that annual surveillance breast imaging may not be beneficial in this cohort of patients and suggesting returning these women to regular screening Tri annually (5).

Method

Retrospective analysis of diagnosed B3 breast lesions over a 10-year period within a busy screening and symptomatic breast unit in London, using pathology, radiology and NBSS systems to collate a main database. Upgrade rates at time of VAE and subsequent upgrades following a 5-year annual FU pathway and beyond were analysed. Specifically looking at those lesions upgraded within the first 3 years.

Results

1504 patients were diagnosed with a B3 breast lesion from 2015-2025 in the authors breast unit. 1346 were new B3 diagnoses, with no previous history or current history of breast cancer. There were a total of 17 upgrades (1%) into cancer within the 0-3 year follow up period.

Conclusion

AIDEP and ISLN had the highest upgrade to malignancy within the 0–3-year period, with over half of those upgrading to invasive cancer. This study highlights certain B3 lesion types have a higher risk of upgrading within 3 years and should therefore be considered for stratified screening.

B3_lesion_type	Total upgrade to malignancy (%)	Upgrade to DCIS (B5a) (%)	Upgrade to invasive (B5b) (%)
AIDEP	11/360 = 3% 360 being benign after VACE	5/11= 45%	6/11= 55%
ISLN	3/94 = 3%	1/3 = 33%	2/3 = 67%
RS/ CSL WITHOUT atypia	1	0	1
Papillary NO atypia	1	0	1
Papillary WITH atypia	1	0	1
Total	17	6	11

Table 1: To show upgrades to Cancer from B3 within 0-3 years follow up

1. Bellini C. Cucchiari J. Di Naro F. De Benedetto D. Bicchierai G. Franconeri A. Renda I. Bianchi S. Susini T. (2023) Breast lesions of uncertain malignant potential (B3) and the risk of breast cancer development: A long term follow up study. Cancers 15: 3521

2. Corsi F. Cabri G. Albasini S. Bossi D. Truffi M. (2025) Management of B3 breast lesions: potential clinical implications from a retrospective study conducted in an accredited Breast Unit following the 2024 EUSOMA guidelines. European Journal of Surgical Oncology 51(3):

3. Pinder S. Shaaban A. Deb R. et al (2018) NHS Breast screening multidisciplinary working group guidelines for the diagnosis and management of breast lesions of uncertain malignant potential on core biopsy (B3 lesions). Clinical Radiology 73(8): 682-692.

4. Public Health England (2016) NHS Breast Screening Programme: Clinical guidance for breast cancer screening assessment. London: Public Health England.

5. Public Health England (2025) NHS Breast Screening Programme: Clinical guidance for breast cancer screening assessment. London: Public Health England.

P072 Breast Cancer on CT: Time to look harder!

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¹GWH, Marlborough, United Kingdom

Background

It has been long recognised that breast cancer can be visualised on CT. These may be performed as part of staging. Incidental findings of breast cancer has long been recognised on CT performed for other reasons. Breast masses are often found on Lung cancer screening. Breast cancers often enhance but this is lost in the breast density on standard CT windows. We noticed that putting the scans onto brain windows (HU w80 l 40) made the cancers stand out and even helped with multifocality. Pseudocolour settings can also increase perception. MRI and increasingly contrast enhanced mammography (CESM) are the gold standard for seeing the extent and multifocality of tumours in the breast. CT if viewed correctly can provide early information on tumour characteristics and extent.

Purpose

Examples of CT compared with MRI and CESM are provided with an emphasis on how to review the images. Examples of multifocal, bilateral and inflammatory tumours are illustrated.

Summary of content

Radiologists and Consultant Radiographers working in the breast and CT units will appreciate the value of CT in understanding the full extent of breast cancer appearances on CT.

P073 Breast density and x-ray energy effects in breast propagation-based phase-contrast CT: toward standardized imaging protocols

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Purpose

Breast propagation-based phase-contrast computed tomography (PB-CT) enhances soft tissue contrast by incorporating x-ray attenuation and refraction. Previous research shows x-ray energy affects image quality; however, the interaction between breast density and x-ray energy in this modality remains underexplored. This study examines this relationship to inform standardized PB-CT protocols and improve diagnostic accuracy across densities.

Methods

Twenty-eight mastectomy samples were imaged with PB-CT at x-ray energies of 28, 32, and 34 keV. Breast density was classified from pre-mastectomy mammograms by four radiologists as low (BI-RADS A/B) or high (BI-RADS C/D). Objective image quality measures were evaluated using resolution, signal-to-noise ratio (SNR), resolution-normalized SNR (SNR/res1.5), visibility, and resolution-normalized contrast-to-noise ratio (CNR/res1.5). A mixed-effects model evaluated the effects of x-ray energy and breast density on image quality, with Tukey's post-hoc comparisons.

Results

Six low-density and twenty-two high-density samples were analyzed. Both x-ray energy and breast density significantly influenced PB-CT image quality, with no interaction between them. SNR and SNR/res1.5 peaked at 34 keV, while visibility was highest at 28 keV. Resolution and CNR/res1.5 were unaffected by energy. Higher density reduced visibility but increased resolution and SNR while decreasing SNR/res1.5 and CNR/res1.5; these latter trends were not statistically significant.

Conclusion

X-ray energy and breast density independently affect PB-CT image quality, with no interaction between them, suggesting that energy optimization does not need to be tailored to breast density. As in mammography, protocol standardization in PB-CT may focus on factors like breast size rather than density alone to ensure consistent image quality across patients.

P074 Do Breast vacuum excision weights really matter?

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Background

Breast lesions of uncertain malignant potential (B3) have an increased risk of subsequent breast cancer. Guidance from the UK published in 2016 recommend excision (vacuum assisted or surgical) followed by yearly surveillance for 5 years. (1). In 2025 UK Breast screening guidance was updated changing the follow up period for any B3 breast lesion, suggesting that annual surveillance breast imaging may not be beneficial in this cohort of patients provided that the original B3 lesion is thoroughly sampled equivalent to 4G. (2)

Method

Retrospective analysis of diagnosed B3 breast lesions over a 10-year period within a busy screening and symptomatic breast unit in London, using pathology, radiology and NBSS systems to collate a main database. Weights of all Vacuum assisted excisions were analysed along with any upgrade rates after diagnosis.

Results

1504 patients were diagnosed with a B3 breast lesion from 2015-2025 in the authors breast unit. 1346 were new B3 diagnoses, with no previous history or current history of breast cancer, of these 934 had vacuum excisions performed, with 814 of those having a recorded specimen weight within the pathology report. 168/814 (20%) were upgraded at VAE, and 25/814 (3%) upgraded during 5 year follow up.

Conclusion

Weights of VAE varied from 0.2g to 17g. This study suggests that upgrade rates do not vary significantly depending on the weight of a VAE.

Number of B3 upgraded @ VAE (with a recorded weight)	Number of VAE upgraded below 4G	Number of VAE upgraded above 4G
169	86 (51%)	83 (49%)

Table 1: To show upgrade rates of above and below 4g at time of VAE

Number of B3 upgraded during 5 year FU period (with a recorded weight)	Number of VAE upgraded below 4G	Number of VAE upgraded above 4G
25	14 (56%)	11 (44%)

Table 2: To show upgrade rates of above and below 4g during the 5 year follow up period

Weight of VAE	Number of patients	Upgrade @ VAE	Upgrade within 5 year FU	Upgrade after 5 years FU	Overall upgrade Totals:	
0-0.9g	21/814 = 3%	4	1	0	5 = 24%	
1-1.9g	116/814 = 14%	12	1	1	14 = 12%	
2-2.9g	152/814 = 19%	26	7	1	34 = 22%	
3- 3.9g	145/814 = 18%	35	4	1	40 = 27.5%	
4-4.9g	125/814 = 15%	35	3	2	40 = 32%	
5-5.9g	96/814 = 12%	19	6	2	27 = 28%	
6-6.9g	68/814 = 8%	20	1	0	21 = 31%	
7-7.9g	34/814 = 4%	5	1	0	6 = 17%	
8-8.9g	22/814 = 3%	3	0	0	3 = 14%	
9g +	35/814 = 4%	10	1	0	11 = 31%	
Total	814	169	25	7		

Table 3: to show upgrade rates within 1g sections

1. Public Health England (2016) NHS Breast Screening Programme: Clinical guidance for breast cancer screening assessment. London: Public Health England.
2. Public Health England (2025) NHS Breast Screening Programme: Clinical guidance for breast cancer screening assessment. London: Public Health England.

P075 MRI breast- friend or foe in local cancer staging?

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Background

Breast MRI is a critical tool in staging of newly diagnosed breast cancer, providing assessment of tumour extent, detection of multifocality or occult contralateral disease. This study aimed to evaluate the diagnostic pathway and clinical impact of MRI-identified additional lesions (MRALs), focusing on the utilization and outcomes of second-look ultrasound (SLUS) and image-guided interventions in guiding surgical management.

Method

A retrospective review was conducted on 117 patients who underwent breast MRI for newly diagnosed cancer between July 2024 and May 2025. Patients on MRI surveillance and implant protocols were excluded. Data was collected on the number of SLUS, ultrasound-guided biopsy (USGB) and MRI-guided biopsy (MRGB). The pathology of biopsied MRALs and their surgical impact were analysed, as were time intervals from initial diagnosis to SLUS and MRGB.

Results

Of 117 patients, 74 (63%) underwent SLUS, one proceeded directly to MRGB due to size and location (positive result). Among the SLUS cohort; 45 patients proceeded to USGB, with 21 (47%) yielding malignant results. Of the 29 SLUS patients who did not undergo USGB, 9 proceeded to MRGB, with 4 (44%) yielding malignant results. MRI identified actionable additional cancer in 26 patients (22%).

Conclusion

Breast MRI identifies clinically significant additional malignancy in a substantial proportion of patients, directly influencing surgical planning. While SLUS successfully targets many MRALs, a subset requires MRGB, highlighting the indispensability of MRI-guided intervention in select cases. The variability in pathway timing highlights an opportunity to streamline the staging pathway to improve patient experience and enhance service capacity.

Time frame over which data has been collected: 7th July 2024 – 9th May 2025.
Number of breast cancer diagnoses in this time period: 264.
Number of breast MRIs performed in this time period: 423
Number of patients included in study: 117

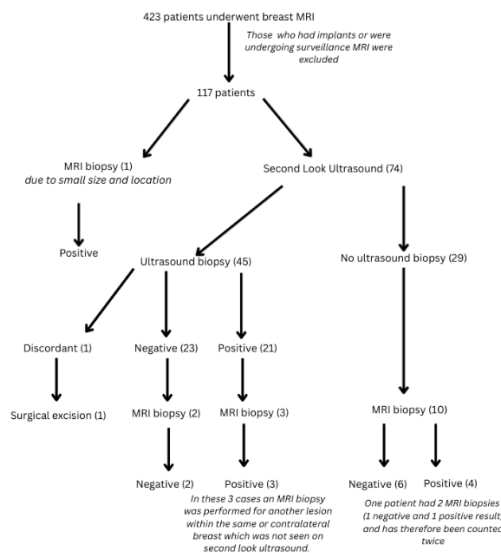
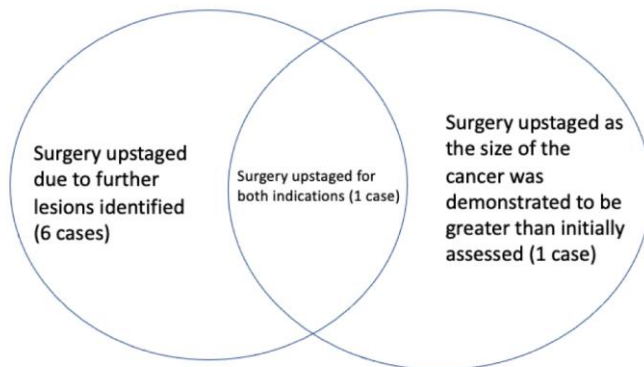


Fig 1: Flowchart diagram demonstrating the pathway of patients who were included in the study following breast MRI

How MR biopsy changed surgery in the 9 patients with a positive MR biopsy



In one case a patient requested a bilateral mastectomy for symmetry therefore this was due to patient choice.

Fig 2: A venn diagram demonstrating how MRI-guided biopsy results impacted surgical decision making

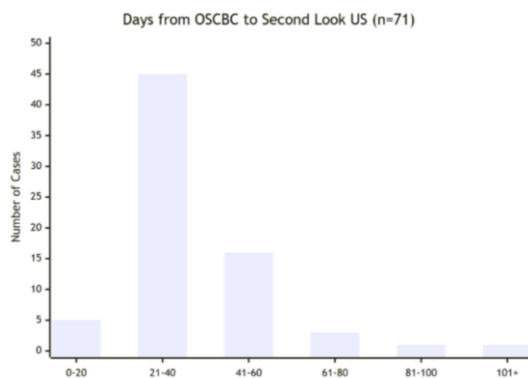


Fig 3: A bar chart demonstrating the number of days from the initial one stop breast clinic to second look ultrasound

P076 The Sonographic Visibility of Titanium Clips Following Complete Radiological Response Post NACT Breast cancer: A cost effective Method in LMICs

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Objective

Neoadjuvant chemotherapy presents a unique challenge for both surgeons and radiologists, as complete radiological response (rCR)—can make it difficult to accurately locate any remaining tumor tissue. While a range of commercial clips and markers are available, their high costs impose a substantial financial burden on healthcare institutions and governments of LMICs. As a result, radiologists have been exploring more affordable alternatives, such as needles and wires. However, these methods prove ineffective in localizing tumors that have achieved a complete radiological response due to reduced density (Z1 and Z2 match). Standard titanium-based surgical clips (Liga clips), have been studied as a potential cost-effective solution for accurate tumor localization due to Z1 and Z2 mismatch and increased thickness.

Method

The study included 205 patients, with a total of 210 clips inserted to match the number of lesions identified. Conducted from November 2022 to December 2024, the study involved patients from Shalamar Hospital Lahore.

Results

53 patients (25.8%) achieved a complete radiological response, while 152 patients (74.1%) demonstrated a regressive response after treatment. The low-cost surgical clips were evaluated using ultrasound. Among the 53 patients with a complete radiological response (rCR), the clips were not visible on sonography in only 2 cases (3.7%). In the remaining 51 patients, the Liga clips were clearly visible and localized on ultrasound (96.2%).

Conclusion

Our study indicates that Liga clips offer a safe and cost-effective alternative to commercial tissue markers and provide better visualization on sonography compared to other localizing markers.

2. Bharath, S. et al., 2024, Low-cost radio-opaque tumor markers (LIGA clips, K-wire, needle) for breast tumor localization post-neoadjuvant chemotherapy, Indian Journal of Surgical Oncology
3. Youn, I. et al., (accessed 2025), Ultrasonography-guided surgical clip placement for tumor localization in patients undergoing neoadjuvant chemotherapy, Korean Journal of Radiology.

P077 To recall or not to recall? Radiological predictors of benign outcomes in prevalent breast screening

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Background

Prevalent breast cancer screening is associated with higher recall rates compared with incident screening, largely due to lack of prior imaging for comparison. Unnecessary recalls increase anxiety and resource use. This study analysed reasons for recall in prevalent screening to assess which could be safely dismissed to reduce overall recall rates.

Methods

A retrospective analysis was performed of women recalled to the assessment from the prevalent breast screening round over an 18-month period. Extracted variables included reason for recall, mammographic and sonographic assessment findings, outcome of the assessment and biopsy results.

Results

The 18-month recall rate in prevalent screening was 8.96%. In total, 647 women were included in the analysis. On mammography, 218 patients (33.7%) were assigned BI-RADS M3+, while 164 patients (25.3%) were U3+ on ultrasound. Calcification and spiculate margins were the most frequent mammographic features associated with malignancy. In contrast, 185 patients (28.6%) were recalled for a well-defined lesion (WDL): 95 (51.4%) were discharged without biopsy (cysts, hamartomas and lymph nodes), two (1%) required minimal intervention (cyst aspiration) and 88 (47.6%) underwent biopsy. Almost all biopsied WDLs were benign (B1-3: cystic, fibroepithelial and fibrotic changes), except one B5 lesion, which on review should have been categorised as ill-defined as margins were indistinct.

Conclusion

Had WDLs not been recalled, the prevalent group recall rate would have been 6.65%. When classified correctly, mammographic WDLs represent benign lesions and, when not recalled, offer an opportunity to safely reduce recall rates without compromising cancer detection, while also mitigating patient anxiety.

1. Chan, V., Bhuva, S. & Parulekar, V. (2017). Reducing the prevalent round recall rate to assessment to meet NHSBSP QA standard [Poster]. Clinical Radiology, 72(Suppl), pp.S14–S23.

P078 What's behind there? An interesting case of an incidental contralateral cancer masked by a benign lesion

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Background

Bilateral breast cancers affect 2-11% of all patients diagnosed with breast cancer with contralateral mammographically occult malignancy present in around 3% of cases (1).

Case presentation

We present an interesting case of a 64-year old female who been referred with a screening detected spiculated mass in the right breast which was biopsy proven Grade 2 Invasive Ductal Carcinoma (IDC). A 3cm benign lesion was identified in the left breast on mammography and ultrasound on completion imaging prior to referral. Following MDT review a breast MRI was performed to assess the malignant lesion in the right breast to confirm disease extent, incidentally a 1 cm spiculated suspicious lesion was identified in the left breast which was adjacent to and had been obscured by the benign lesion on mammography, tomography and ultrasound. During a second-look ultrasound this new lesion was successfully visualised and biopsied, confirming a Grade 1 IDC. The patient continued onto neoadjuvant chemotherapy and surgery was upstaged to a planned bilateral breast conserving surgery and sentinel lymph node biopsy.

Conclusion

Although this interesting case highlights the benefits of post-contrast imaging (contrast enhanced mammography or MRI) in detecting additional or unexpected malignancy in either the unilateral or contralateral breast, the use of pre-operative MRI imaging remains controversial due to the increase in mastectomy rates, unchanged local relapse-free survival, overall survival, and re-operation rates. Therefore we should continue to use breast MRI in select cases following an MDT discussion and consider implementation of contrast enhanced mammography in newly diagnosed cases.

1. MRI Evaluation of the Contralateral Breast in Women with Recently Diagnosed Breast Cancer. Constance D. Lehman at Al. N Engl J Med 2007;356:1295-1303

2. Effects of preoperative magnetic resonance image on survival rates and surgical planning in breast cancer conservative surgery: randomized controlled trial (BREAST-MRI trial).

P079 From diagnostic to therapeutic: sonographer led vacuum excisions in a symptomatic breast clinic

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¹RF London NHS Foundation Trust, London, United Kingdom

Background

Multiple studies have reported on the effectiveness of percutaneous ultrasound guided vacuum excision (VAE) in breast clinics for treating benign (non-cancerous) breast lesions, Aziminezhadan, P. et al. (2025). This poster highlights the impact of a sonographer led clinic in a symptomatic breast setting.

The advanced practitioner role has proven an effective and cost saving answer to capacity issues within the NHS breast symptomatic an screening service workforce . A consultant breast sonographer is utilised in clinics usually alongside a consultant radiologist as well as in an autonomous role to allow consultant radiologists to focus on more complex cases. A fully independent advanced practitioner /consultant sonographer led clinic allows further cost saving and efficiencies to improve stability and robustness of a breast service.

Purpose

Increase in capacity was created with no additional cost pressure. Radiologists are freed up to use their specialist skills to address more complex imaging cases.

Learning outcomes and application to practice

sonographers can offer independent clinics for the removal of B3 non-cancerous lesions safely and is an efficient alternative to radiologist led clinics, ('British Society of Breast Radiology Virtual Annual Scientific Meeting 2021', 2021). The poster also demonstrates the high success rates, complications and the necessary training and case experience required to achieve proficiency.

Content Summary

The poster highlights:

- indications for ultrasound guided VAE.
- appropriate patient selection for VAE.
- support structure required to ensure safety and efficacy.
- success rates and complications.
- procedural benefits
- training requirements
- future of role extension

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P080 The effectiveness of surface-guided Radiotherapy (SGRT) as a tattoo-less approach for breast cancer patients undergoing radiotherapy: A critical literature review

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Background

Permanent skin tattoos have traditionally been used for patient positioning in breast radiotherapy; however, they may compromise setup reproducibility due to skin mobility and can negatively impact patient experience by acting as a permanent reminder of cancer diagnosis. Increasing treatment complexity and the need for greater precision have driven interest in tattoo-less alternatives. Surface-guided radiotherapy (SGRT) utilises real-time surface imaging to support accurate patient positioning and enhance treatment delivery.¹

Aim

To evaluate the effectiveness of SGRT as a tattoo-less positioning technique for breast cancer radiotherapy.

Methods

Ten peer-reviewed studies published within the last decade was conducted. SGRT was compared with conventional tattoo-based positioning techniques, focusing on setup accuracy, workflow efficiency, safety, and patient experience. Data were extracted and synthesised to identify clinical benefits and limitations.²

Results

The reviewed evidence indicates that SGRT achieves comparable or improved positioning accuracy compared with tattoo-based setups, with reported reductions in translational and rotational setup errors and a higher proportion of treatment fractions within clinical tolerance.^{3,4} Several studies reported reduced need for corrective shifts and improved workflow efficiency, including decreased setup time.⁵ Real-time monitoring enabled detection of intrafraction motion, enhancing treatment safety.⁴ The elimination of permanent tattoos was consistently associated with improved patient comfort and psychological well-being.^{2,6}

SGRT is a clinically effective and patient-centred alternative to tattoo-based positioning in breast radiotherapy, with potential benefits for setup accuracy, workflow efficiency, and patient experience. Further research is required to assess cost-effectiveness, long-term outcomes, and wider applicability across diverse patient populations and anatomical sites to support broader clinical implementation.

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4. Hattel, S.H. et al. (2019) 'Evaluation of setup and intrafraction motion for surface guided whole-breast radiotherapy', *Journal of Applied Clinical Medical Physics*, 20(6), pp. 39–44.
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6. Lopez, C.J. et al. (2022) 'Patient experience and acceptance of tattoo-less surface guided radiotherapy', *Radiography*, 28(4), pp. 1041–1047.

P081 Adapting Inf-Net for Breast Cancer Lesion Segmentation in Mammography

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Background

Breast cancer lesion segmentation in mammographic images is a critical yet challenging step for computer-aided diagnosis, where subtle, low-contrast boundaries and heterogeneous tissue patterns hinder both manual and automated analysis (Ribeiro et al., 2022). Classical segmentation methods struggle with the low contrast, variable shapes, and overlapping structures characteristic of breast lesions (Pérez-Núñez et al., 2024). This study investigates whether Inf-Net, a deep neural network originally developed for COVID-19 lung-infection segmentation, can be effectively adapted to breast cancer lesion segmentation.

Methods

A curated dataset of breast imaging studies with expert-annotated lesion masks was prepared and corresponding edge maps were generated from ground-truth masks to support edge-aware supervision. The Semi-Inf-Net variant, using a Res2Net50 backbone, was trained from pseudo-label-initialised weights for 300 epochs with a learning rate of 1×10^{-4} and batch size 24. Model evaluation was conducted on a held-out test set using Dice and Intersection-over-Union (IoU) metrics within a custom graphical interface that also provided qualitative overlays and multi-model comparison.

Results

The best checkpoint, Inf-Net-151, achieved a mean Dice coefficient of approximately 0.85 and mean IoU of approximately 0.76, outperforming several alternative checkpoints. Qualitative assessment confirmed accurate delineation of irregular lesion boundaries, with remaining errors concentrated in very small or diffuse lesions.

Conclusion

Inf-Net transfers effectively to breast imaging and provide a strong baseline for future breast cancer segmentation and decision-support systems. The combination of a Semi-Inf-Net training regime, dedicated evaluation tools, and interactive mask-editing workflows provides a practical framework for developing clinically oriented segmentation models in breast imaging and beyond.

REZ-NÚÑEZ, J.-R., RODRÍGUEZ, C., VÁSQUEZ-SERPA, L.-J. & NAVARRO, C. 2024. The Challenge of Deep Learning for the Prevention and Automatic Diagnosis of Breast Cancer: A Systematic Review. *Diagnostics*, 14, 2896.

RIBEIRO, R. F., GOMES-FONSECA, J., TORRES, H. R., OLIVEIRA, B., VILHENA, E., MORAIS, P. & VILACA, J. L. 2022. Deep learning methods for lesion detection on mammography images: a comparative analysis. *Annu Int Conf IEEE Eng Med Biol Soc*, 2022, 3526-3529.

P082 Deep learning pipeline for differentiation between malignant and non-malignant microcalcification in screen-recalled women

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Background

Radiologists often find it difficult to distinguish between significant and nonsignificant breast calcifications (Shia, 2025), leading to high false positive recalls which increase psychosocial harms to women and their families, and shift cost to Medicare (Sim et al., 2012). This study investigates the comparative performance of three deep learning architectures (AlexNet, ResNet18, and ResNet34) for the detection and differentiation of malignant and non-malignant microcalcifications.

Methods

A curated dataset comprising of mammograms from 540 women were used. Images were enhanced using CLAHE, and 112×112-pixel patches were extracted from full images. All three deep learning architectures (AlexNet, ResNet18, and ResNet34) were pre-trained using ImageNet weights and modified for 2-class classification. Training parameters included 24 samples per training batch at a learning rate of 0.0001 and 10,550 learning epochs. Performance was assessed using accuracy, AUC, sensitivity and specificity.

Results

AlexNet achieved the highest accuracy (0.797), AUC (0.874), and sensitivity (0.844), but lowest specificity (0.75). Classification accuracy, AUC, sensitivity, and specificity were 0.77, 0.86, 0.72, and 0.81 respectively for ResNet18 and 0.781, 0.868, 0.781, 0.781 respectively for ResNet34. Overall, AlexNet demonstrated the highest accuracy (79.69%), best AUC score, (87.4%), and excellent sensitivity (84.38%), which is critical for medical detection. ResNet18 demonstrated highest specificity (81.25%) with fewer false positive recalls. ResNet34 consistent performance across both classes.

Conclusion

The findings demonstrate the effectiveness of transfer learning for medical image analysis. All three models demonstrate promising results for computer-aided detection systems in mammography, with AUC scores above 0.86 indicating strong discriminative power suitable for clinical decision support.

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P083 A Comparison of the Diagnostic Accuracy of Magnetic Resonance Imaging and Transvaginal Ultrasound in Differentiating Benign and Malignant Adnexal Masses in Adult Females: A Systematic Review

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Background

Accurate preoperative characterisation of adnexal masses is essential to guide management, avoid unnecessary surgery, and ensure timely referral for suspected malignancy. Transvaginal ultrasound (TVUS) is the first-line imaging modality, while magnetic resonance imaging (MRI) serves as a second-line problem-solving tool when ultrasound findings are indeterminate. Differentiating benign, borderline and malignant masses remains challenging, and reported diagnostic performance varies, with limited direct comparisons.

Aim

To compare the diagnostic accuracy (sensitivity and specificity) of MRI and TVUS in differentiating benign and malignant adnexal masses in adult women.

Method

Scopus, PubMed and Web of Science were searched for studies published between 2020 and 2025. Primary diagnostic accuracy studies reporting sensitivity and specificity for MRI and/or TVUS were included. Study selection followed PRISMA guidelines, and methodological quality was appraised using the CASP diagnostic checklist. Due to heterogeneity in study design, populations and imaging protocols, a narrative synthesis was performed.

Results

Nine studies involving approximately 2,653 women and 3,007 adnexal masses were included. TVUS demonstrated high sensitivity (83–96.3%), reinforcing its role as a first-line modality. MRI showed comparable sensitivity but higher specificity (81–97.1%), particularly when structured scoring systems and multi-parametric protocols were used. Diagnostic performance was influenced by clinical setting, malignancy prevalence and imaging technique.

Conclusion

TVUS remains the preferred first-line modality due to its high sensitivity and accessibility. MRI provides meaningful incremental value by improving lesion characterisation and reducing false-positive diagnoses in indeterminate cases, supporting evidence-based modality sequencing in clinical practice.

P084 A comparison of Magnetic Resonance Imaging (MRI) and Transvaginal Ultrasound (TVUS) in the diagnostic effectiveness of the detection of Deep Infiltrating Endometriosis (DIE). A Systematic Review

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Background

Deep infiltrating endometriosis (DIE) is a severe form of endometriosis characterised by lesions infiltrating more than 5 mm beneath the peritoneal surface. Accurate preoperative diagnosis is essential for treatment planning, risk stratification, and multidisciplinary surgical management. Transvaginal ultrasound (TVUS) and magnetic resonance imaging (MRI) are the principal non-invasive imaging modalities used for the evaluation of DIE; however their relative diagnostic performance varies according to anatomical location and operator expertise. Aim: To evaluate TVUS and MRI in the diagnostic effectiveness (sensitivity and specificity) in detecting DIE.

Method

A systematic review was conducted including primary diagnostic accuracy studies published from 2020 onwards from Scopus, Pubmed, CIHAHL and Cochrane Library. Studies reporting sensitivity and/or specificity of TVUS and/or MRI for DIE using laparoscopy and/or histology as the reference standard were included. Twelve studies met the inclusion criteria after using a CASP eligibility tool. Data was narratively synthesised according to key anatomical site.

Results

Both TVUS and MRI demonstrated good overall diagnostic performance for DIE, with marked variation depending on lesion location. TVUS showed high sensitivity and specificity for rectosigmoid and posterior compartment disease. MRI demonstrated superior performance in detecting uterosacral ligament, parametrial, and anterior compartment involvement. TVUS and MRI are complementary modalities in the non-invasive diagnosis of DIE.

Conclusion

TVUS represents an effective first-line imaging tool for posterior compartment disease, while MRI provides added value in assessing lesion extent and complex anatomical involvement. A site-specific, multimodal imaging approach optimises diagnostic accuracy and supports informed surgical planning.

P085 Diagnostic Accuracy of 2D vs 3D and 4D Ultrasound for Prenatal Detection of Craniofacial Abnormalities

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Background

Congenital craniofacial abnormalities, including orofacial clefts and micrognathia, significantly impact quality of life and often requiring postnatal surgical intervention¹. Although two-dimensional (2D) ultrasound is widely used in foetal anomaly screening, its accuracy is limited by position and acoustic shadowing². Three-dimensional (3D) and four-dimensional (4D) ultrasound may address these limitations; however, their added diagnostic value remains unclear. This review evaluates the diagnostic accuracy of 2D versus 3D/4D ultrasound for prenatal detection of craniofacial malformations.

Method

Following PRISMA guidelines³ (PROSPERO: CRD420251175941), a systematic search of Embase, PubMed, Scopus, and Web of Science was conducted (October 2025). Studies comparing 2D to 3D/4D ultrasound with a confirmed reference standard (postnatal examination or autopsy) were included. Quality was assessed using the QUADAS-2 tool⁴.

Results

Seven studies (n=332 fetuses) were included. Most studies had selection bias but were low risk otherwise; only one had applicability issues in the reference standard. Multiplanar reconstruction was the foundational diagnostic tool, enabling precise delineation of bony defects of the secondary palate. While four studies stated that 3D ultrasound provided advantageous clinical information, its benefit was negligible when 2D ultrasound diagnosis was already conclusive. Surface rendering served as an auxiliary tool for parental counselling and documentation rather than providing diagnostic gain.

Conclusion

Evidence on the diagnostic accuracy of 2D ultrasound in low-risk populations remains limited, as most studies focus on high-risk groups. 3D/4D ultrasound, through volumetric imaging, provides increased diagnostic value, aiding surgical planning. Studies in low-risk cohorts are needed to validate its accuracy and use, especially in low-resource settings.

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P086 Fusion of Wearable Ultrasound and AI for Dynamic Maternal-Fetal Health Prediction Models

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Objective

To evaluate the feasibility and predictive accuracy of a novel system combining wearable ultrasound with AI-driven analytics for continuous monitoring and early detection of maternal–fetal complications in high-risk pregnancies.

Introduction

Conventional maternal–fetal monitoring is episodic and dependent on clinic visits, potentially delaying intervention in high-risk cases. Wearable ultrasound technology enables continuous, non-invasive data acquisition and, when integrated with artificial intelligence, may provide early predictive alerts for adverse outcomes. This study investigates the clinical utility of such a system for anticipatory decision-making.

Methods

A soft, flexible wearable patch incorporating Doppler and B-mode ultrasound transducers was developed to monitor uterine artery flow, fetal heart rate, and placental morphology. The device was deployed in 15 pregnant women identified as high-risk for complications including pre-eclampsia, fetal growth restriction, or fetal distress during the second and third trimesters. Participants wore the device for an average of 12 hours per day over a three-week period. Ultrasound data were continuously transmitted to a secure cloud-based platform, where an ensemble of long short-term memory and gradient boosting models analyzed real-time time-series data to predict clinically significant events up to 48 hours in advance. Model performance was compared with outcomes from routine obstetric surveillance.

Results

The system demonstrated 91% sensitivity and 87% specificity in predicting fetal distress or pre-eclampsia confirmed by hospital admission records. Participants reported high comfort and usability (mean rating 4.6/5), with 93% indicating willingness for long-term use.

Conclusion

AI-enhanced wearable ultrasound shows strong potential as a tool for early intervention in high-risk pregnancies.

P087 Sonographic markers of split cord malformation: enhancing diagnostic confidence

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Background

Split cord malformation is a rare type of spinal dysraphism caused by the incomplete formation of the neural tube (Arbelo-Peres et al. 2023). A SCM is described as the spinal cord being split longitudinally into two separate hemicords that then rejoin (D'Agostino et al., 2019). The exact aetiology is unknown, but it has been thought to occur when an extra channel forms during early embryonic development, allowing tissue to grow into the middle and divide the developing spinal cord (Saini and Singh, 2010). Whilst the incidence of neural tube defects has decreased in Western countries due to the routine use of antenatal folic acid supplementation, making antenatal diagnosis rare (Mahapatra, 2011), ultrasound imaging plays a key role in detection and diagnosis, allowing for antenatal counselling and care planning.

Purpose

This poster aims to provide a clear, evidence-based overview of split cord malformation and its ultrasound features, enabling readers to enhance their diagnostic confidence in clinical practice. Supporting accurate diagnosis helps ensure expectant parents receive clear information, ultimately promoting more informed decision-making.

Summary of content

Illustrative examples of split cord malformation from a clinical case will be presented demonstrating the ultrasound features. Key background information will be provided as well as current patient pathways including diagnostic and treatment options.

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P088 A Survey of BMUS Third-Trimester Growth Scan Guidance Implementation in NHS Maternity Ultrasound Services

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Background

Third-trimester ultrasound is central to the detection and management of fetal growth restriction (FGR). In 2022, the British Medical Ultrasound Society (BMUS) published professional guidance to support standardisation of growth scans beyond 23 weeks' gestation. However, the extent of implementation in practice, and factors influencing adherence, remain unclear.

Aim

This study evaluated reported implementation of the BMUS (2022) third-trimester growth scan guidance across NHS maternity ultrasound departments and identified organisational, workforce and governance factors influencing adherence.

Methods

A cross-sectional survey design was used. An online mixed-method questionnaire comprising descriptive quantitative items and limited free-text responses was distributed nationally to senior and lead sonographers. Data were analysed descriptively and organised thematically according to domains identified in the literature.

Results

Strong reported adherence was identified for core technical elements of BMUS guidance, including standard biometry, estimated fetal weight calculation, Doppler acquisition and structured reporting. However, variation was evident beyond this minimum dataset, particularly in measurement technique, anatomical review, amniotic fluid assessment, reference chart selection, audit practice and risk pathway configuration. Inconsistency was also reported in awareness and operationalisation of national and international guidance, including different versions of the Saving Babies' Lives Care Bundle. Variation was closely associated with local governance arrangements, service capacity and workforce capability.

Conclusion

BMUS guidance provides a robust framework for third-trimester growth surveillance, but consistent implementation across NHS services is constrained by system-level factors beyond the guidance itself. Greater alignment between professional standards, national policy and workforce sustainability is required to support equitable and consistent ultrasound practice.

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https://www.bmus.org/static/uploads/resources/SIG3_document_FINAL_v_16_27_Jan_2022- With_cover_QcOJnLN.pdf.

2. NHS England (2023) Saving Babies' Lives: Version 3. Available at: <https://www.england.nhs.uk/long-read/saving-babies-lives-version-3/>.

P089 Pericarditis: A Pictorial Review of Diagnostic Imaging and Management with Emphasis on Cardiac MRI

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Background

Pericarditis presents a diagnostic challenge due to its nonspecific symptoms and potential progression to cardiac tamponade (European Society of Cardiology, 2022). Transthoracic echocardiography remains the first-line investigation but is limited by patient habitus and reduced sensitivity for subtle effusions or early inflammatory changes (Wang et al., 2022). Cardiac Magnetic Resonance (CMR) offers superior tissue characterisation, enabling accurate detection of pericardial inflammation, oedema, and early fibrosis (Rajiah, 2011; Conte et al., 2022).

Purpose

This work highlights the clinical impact of advanced CMR protocols in the assessment of pericarditis. Key imaging markers—including T2-weighted STIR hyperintensity and late gadolinium enhancement—are reviewed, with emphasis on how these findings guide diagnosis, treatment decisions, and follow-up.

Summary of Content

The review outlines the epidemiology and presentation of pericarditis and compares the diagnostic strengths of echocardiography and CMR. A case involving a 37-year-old male with morbid obesity demonstrates the value of CMR when initial investigations are inconclusive. A recommended CMR protocol is presented, detailing essential and optional sequences for comprehensive pericardial assessment. Typical imaging features of acute pericarditis and current management strategies, including NSAIDs and colchicine, are summarised (Lazarou et al., 2022).

1. Conte, E., Agalbato, C. and Lauri, G. (2022) 'Cardiac MRI after first episode of acute pericarditis: A pilot study for better identification of high-risk patients', *International Journal of Cardiology*, 354, pp. 63–67.

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P090 Accuracy of Lung Ultrasound Compared to Chest Radiography for Diagnosing Pneumonia in Children: A Hospital-Based Cross Sectional Study

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Background

Traditionally, pediatric pneumonia is diagnosed through clinical examination and chest radiography (CXR), with computed tomography (CT) reserved for complications. Lung ultrasound (LUS) has gained popularity due to its portability and absence of ionizing radiation. This study evaluates LUS's accuracy compared to CXR in diagnosing pneumonia in children.

Methods

We conducted a cross-sectional study from April to September 2023 involving 108 children aged 14 or younger admitted with pneumonia. Each child underwent LUS using a five-zone scanning protocol, followed by CXR, with the latter interpreted independently by two consultant radiologists. Agreement between LUS and CXR for diagnosing consolidation and interstitial pneumonia patterns was assessed using Cohen's Kappa (k) with SPSS version 26.0.

Results

Pneumonia was radiographically confirmed in 79 children (73.1%). LUS detected consolidation in 41.7% of cases, compared to 43.5% for CXR, demonstrating a sensitivity of 97.8%, specificity of 95.2%, positive predictive value (PPV) of 93.6%, and negative predictive value (NPV) of 98.4%. LUS showed higher accuracy for interstitial lung patterns (sensitivity 93.6%, specificity 97.4%). The agreement between LUS and CXR was excellent, with Cohen's Kappa values of 0.908 for consolidation and 0.863 for interstitial pneumonia. LUS also identified more pleural effusions (11.1%) compared to CXR (6.5%).

Conclusion

LUS demonstrates comparable diagnostic accuracy to CXR for pneumonia, exhibiting high sensitivity and specificity for pneumonia-related features. It outperforms CXR in detecting small-volume consolidations and effusions, supporting its routine use in clinical settings.

Patient characteristics	Frequency	Percent
Demographic data		
Male	65	60.2
Female	43	39.8
Clinical History		
Cough	93	86.1
Fever	88	81.5
Difficulty breathing	61	56.5
Parental Education		
Primary	63	58.3
Secondary	28	25.9
Tertiary	17	15.8
Area of Residence		
Urban	77	71.3
Rural	31	28.7

Table 1: Baseline Characteristics of Patients (N=108).

CXR	LUS		Sensitivity	Specificity	PPV	NPV
	Positive	Negative				
Positive	73	6	79	96.0%	81.2%	92.4%
Negative	3	26	29			
Total	76	32	108			

Table 2: Classification of pneumonia patient by LUS using CXR as a reference Standard.

CXR findings	Frequency	Percent
Normal	28	25.9
Consolidation	47	43.5
Interstitial pattern	32	29.6
Pleural effusion	7	6.5
Atelectasis	4	3.7
LUS findings		
Normal	26	24.1
Consolidation	45	41.7
Size ≥ 1cm	36	80
Size < 1cm	9	20
With air bronchogram	40	88.9
Without air bronchogram	5	11.1
Interstitial pattern	31	28.7
Pleural effusion	12	11.1
Atelectasis	7	6.5

Table 3: Prevalence of CXR and LUS Findings (N=108)

			LUS		Total	Sensitivity	Specificity	PPV	NPV
			Positive	Negative					
Consolidation	CXR	Positive	44	3	47	97.78%	95.24%	93.62%	98.41%
		Negative	1	60	61				
		Total	45	63	108				
Interstitial Pneumonia		Positive	29	3	32	93.55%	97.4%	90.63%	97.37%
		Negative	2	74	76				
		Total	31	77	108				

Table 4: Comparison of CXR and LUS in the Diagnosis of Consolidation and Interstitial Pneumonia

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P091 Importance of reconstruction kernel for nodule volumetry accuracy in CT lung cancer screening

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The accurate measurement of nodule volume is of prime importance in CT lung cancer screening as the nodule volume doubling time is used as a predictor of malignancy risk. The Quantitative Imaging Biomarkers Alliance (QIBA) small lung nodule profile provides a set of image quality criteria that can be used to assess the performance of a scanner/protocol in terms of volumetry accuracy.

The Accumetra CTLX1 phantom was used to assess whether recommended lung cancer screening scan protocols yielded accurate nodule volumetry as per the QIBA criteria, and to determine whether changes were needed to enable this. Scans were performed on seventeen different scanner models from five CT manufacturers.

Six of seventeen scanners tested achieved the QIBA profile criteria using the recommended reconstruction settings. Of the protocols that did not achieve the QIBA criteria, 11 scanners failed in terms of edge enhancement, 11 based on 3D resolution aspect ratio and 1 on each of 3D resolution, spatial warping, HU bias and image noise. In the vast majority of cases these failures were correctable though careful selection of an alternative reconstruction kernel.

Our results demonstrate that on most scanners, images produced using 'lung' reconstruction kernels were unable to meet the QIBA criteria. To achieve the highest level of objective image quality a soft tissue reconstruction kernel was required on most scanners. This has implications for how scan protocols are established on CT scanners used within the lung cancer screening programme and suggests that existing protocols may not produce the required volumetry accuracy.

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P092 A comparison of myocardial perfusion scintigraphy with stress echocardiography in the evaluation of myocardial ischaemia for the diagnosis of coronary artery disease: a systematic review

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Background

Coronary Artery Disease (CAD) places a significant burden on healthcare providers, in ensuring effective preventative strategies, risk stratification and early detection (Zeinali-Nezhad et al., 2024). This review aimed to compare stress echocardiography (ECHO) and myocardial perfusion scintigraphy (SPECT-MPS) in the detection of myocardial ischaemia for diagnosis of CAD. To support clear comparison, diagnostic performance measures such as sensitivity and specificity were considered when evaluating each modality.

Method

Literature was obtained from PubMed, Science Direct and Web of Science databases using search terms; stress echocardiography/ECHO, myocardial perfusion scintigraphy/myocardial stress test, myocardial ischaemia and coronary artery disease. Results were filtered using predetermined inclusion and exclusion criteria, first by titles and abstracts, then through full-text review of retrieved studies. The remaining articles were then quality assessed using the Critical Appraisal Skills Programme tool. The final number of studies included was 13.

Findings

Stress ECHO is a reliable, widely accessible and non-invasive tool for detecting myocardial ischaemia, consistently demonstrating high sensitivity and specificity. However, operator dependence is a limiting factor. SPECT-MPS was found especially useful in identification of flow-limiting stenosis, however several patient sub-groups within the SPECT studies made direct comparison between modalities challenging.

Conclusion

No definite conclusion was reached regarding which modality was superior in evaluation of myocardial ischaemia. This explains the lack of clear preference within the NICE (NICE, 2016) and ESC guidelines (Vrints et al., 2024). However, there was a suggestion that a combined modality approach could be beneficial. Further research could help determine the most optimal combination of techniques.

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P093 A Population-Based Nomogram for Predicting Survival in Lung Cancer Patients With Skeletal Metastases

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Background

Lung cancer often metastasises to the bony skeleton, carrying a poor prognosis and requires significant planning when considering operations and treatment options. Currently, there is no formal assessment tool to predict the overall survival of these patients. This study aims to bridge this current knowledge gap, creating a novel nomogram for accurate prediction of mortality in this patient group.

Methods

A retrospective analysis of the US National Cancer Institute's SEER database was searched for all patients with bony metastasis from primary lung cancer diagnosed between 2010-2018, with other predictive factors. Kaplan-Meier analyses were conducted to identify significant predictive factors. Selected factors were then included in a Cox multivariate analysis to formulate a new predictive nomogram for patients with bony metastasis from primary lung cancer.

Results

A total of 57,978 patients were included for statistical analysis. Kaplan-Meier curves demonstrated that significant predictive factors included tumour subtypes, brain and liver metastasis, and whether the patient received chemotherapy, each with a log value of $p < 0.0001$. Age was additionally included in the novel nomogram. Following the curation of the new nomogram, calibration curves show an MAE of 0.15, 0.035 and 0.055 after 1 year, 3 years and 5 years respectively. A decision curve analysis demonstrates that the nomogram is both statistically and clinically useful.

Conclusion

Bony metastasis from primary bone tumours carry a poor prognosis and effective risk stratification. Our new nomogram shows both statistical and clinical significance in predicting the prognosis of this high-risk patient group.

P094 Evaluating long-term lung changes in radiological imaging for hospitalised Covid-19 patients: A retrospective cohort study

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Introduction

Covid-19 was a global pandemic with 774 million reported cases worldwide and over 7 million deaths since 2019. These are largely due to the respiratory complications caused by this disease, which can be visualised as pneumonia on radiological imaging. This study investigates the radiological findings for patients first hospitalised in 2021 in Australia due to Covid-19 to establish the changes in lung parenchyma over time.

Methods

A retrospective cohort study design was used to analyse longitudinal data over four years for the patient sample. Clinical history and radiology reports were collected from 1138 patients that presented to three Australian hospitals in 2021. Any chest-related scans were then collected from 2022 to 2024. The symptoms and radiographic findings were extracted from the radiology reports and analysed descriptively with respect to time since first Covid-19 positive.

Results

Respiratory symptoms were the predominant complaint during the first year, however, this decreased in prevalence from 40.5% of reported symptoms in the first week to 20.5% one year after testing positive for COVID-19. There was an increase in cardiovascular symptoms from 11.0% on day one to 19.5% for patients in later years. The most reported radiographic sign across the four years was consolidation. When radiographic findings were unilateral, the left lung was more frequently affected.

Conclusion

Establishing trends in changes to lung parenchyma over time helps to understand Covid-19 disease progression. While co-morbidities and other diseases come into play, there were persistent lung changes that extended past the first initial months of Covid-19 infection.

P095 Multiaxial Tomosynthesis for Chest Imaging

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Digital tomosynthesis (DT) is a 3D scanning modality that uses multiple projections over an object to reconstruct a quasi-3D image. This technique, used mostly for mammography and occasionally lung imaging, typically moves a source in an arc in one direction. A few systems have tried alternative geometries including mounting a source on a two-axis linear stage or using a flat panel array of cold cathode emitters. Multi-axis arrays of emission positions are also possible by using multiple such panels.

In this 'multipanel' study, 4 or 5 panels are placed around a common focus. This study is a proof-of-concept, benchmarked against existing scan techniques. The specific parameters of the multipanel formation are refined to identify which variables are the most important for system optimisation. To do this, a UR3e collaborative robot with an X-Ray source end effector was used to reach the emission positions. A numerical phantom and Kyoto Kagaku Lungman anthropomorphic chest phantom were imaged. Standard image quality metrics were used to analyse the numerical phantoms, which were then translated to describe the image quality of the anthropomorphic phantom. For a total dose of 0.078 mSv, it was found that the depth resolution of the panelled system was better than that of the uniaxial scan approach, with comparable CNR. The key parameter of this geometry was identified to be scan angle, with the individual variables ranked in order of which helped most to maximise this. Using this data, an initial, optimised multipanel scan design for human chest imaging is presented.

P096 Shaping Patient Pathways: The Role of Advanced Practice Radiographers in Pulmonary Nodule Management

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Background

Lung cancer screening programmes, increased computed tomography (CT) scans, and technological advancements have resulted in the detection of incidentally discovered pulmonary nodules (PN). Growing demand for the service has driven the expansion of Advanced Practice (AP) radiographer roles in CT chest reporting to support PN management. In accordance with British Thoracic Society (BTS) guidance, this role has developed from initial volumetric measurements using dedicated software to providing more detailed provisional reports and supporting individual decision-making for patient management. This service evaluation aimed to assess whether AP radiographers can reduce radiologist workforce pressures while maintaining diagnostic accuracy and improving efficiency in PN patient triage, aligning with Pulmonary Nodule Multidisciplinary Team (PNMDT) pathways.

Methods

A retrospective audit of 249 randomly selected reports compared provisional PN management recommendations of AP radiographers with the final, approved outcomes of consultant thoracic radiologists. Levels of agreement and disagreement were analysed through assessment of discrepancy factors and review of PNMDT discussion outcomes.

Results

Of the 249 addenda reviewed, radiographer recommendations agreed with radiologist outcomes in 217 cases, 32 disagreed. Following PNMDT discussion, AP radiographer outcomes aligned with PNMDT decisions in 26 cases, with 6 remaining discordant with both radiologist and PNMDT outcomes. These included managing patients with prior oncological history (3 cases) and nodules with complex (2 cases) or benign morphology (1 case).

Conclusions

This evaluation demonstrates that AP radiographer-led pulmonary nodule pathways are feasible, safe, and effective. They can offer an efficient model for patient triage and further PN management while strengthening multidisciplinary collaboration.

P097 Lung Cryoablation - a new ablation technique

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Background

Lung cryoablation is a new minimally invasive cancer treatment that uses extreme cold (around -140°C) delivered via needles inserted into tumors to freeze and destroy cancerous cells. Argon gas is the primary agent used to generate extreme cold in cryoablation. This new technique was introduced in our trust ~ 12 months ago. The ablation service however was started ~ 22 years ago and has been performing Renal and lung ablations. Lung ablations treated are predominantly mets – colorectal/renal/sarcoma.

Purpose

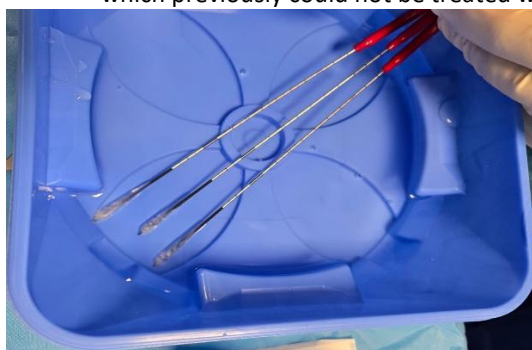
The purpose of this poster is to present our initial experiences of this new technique. It offers several advantages over Radiofrequency ablation and microwave ablation. It offers options for treatment in patients who cannot be treated by SABR because of nodule position or underlying interstitial lung disease.

Summary of Content

Cryoablation offers an additional percutaneous treatment option for lung metastases

In particular it offers a treatment option for lesions that are:

- Close to the pleural surface
- Close to the pericardium/aorta
- which previously could not be treated with RFA/MW Ablation



Cryoablation needles forming ice balls



Needle positioned

P098 Clinical Indications for Lateral Chest X-ray Projections

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Introduction

A standard chest X-ray examination typically includes a frontal and lateral projection. The clinical value of the lateral projection has long been debated, and its use has declined in recent years. This study aimed to provide a comprehensive perspective from key stakeholders in chest imaging on the indications for performing a lateral chest X-ray.

Methods

A survey was sent out to emergency doctors, radiologists, and radiographers working in hospitals across Australia. Participants were asked to list (1) clinical questions, (2) patient history and symptoms, and (3) radiographic signs on the frontal X-ray projection that would indicate the need to perform a lateral chest X-ray projection.

Results

Overall, 10 emergency doctors, 9 radiologists, and 13 radiographers completed the survey. Participants identified 25 clinical questions that would prompt a lateral chest X-ray, most commonly to investigate lung changes such as pneumonia, consolidation, or foreign bodies. For patient history and symptoms, 30 suggestions were made, primarily related to respiratory complaints such as coughing or shortness of breath. Regarding frontal projection findings, consolidation, masses, or nodules were the most frequent triggers for a lateral view. The most cited reason for considering a lateral projection, across the three areas, was the need for localisation.

Conclusion

The study identified diverse indications for lateral chest X-rays across emergency doctors, radiologists, and radiographers, including localisation of infectious changes, masses, and opacities. These findings provide a preliminary list of criteria and future research should validate and prioritise these criteria to inform evidence-based guidelines and optimise patient care.

P100 Programmable VP Shunts: Scanning Conditions and MRI Safety

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Background

Hydrocephalus is the accumulation of cerebrospinal fluid (CSF) in the brain, due to failure of bulk flow being reabsorbed, over production of CSF, or obstruction to normal CSF flow through the entire central nervous system (Hochstetler, Raskin and Blazer-Yost, 2022). It affects all ages, with paediatric incidents of 0.1-0.6% at births (Hochstetler et al., 2022). Ventriculo-peritoneal (VP) shunts are neurosurgical implants used to treat hydrocephalus, by draining excess CSF into intraperitoneal space. Pressure valve settings for VP shunts could be altered when exposed to MRI environment (Chen et al., 2023). The MRI safety conditions for the VP shunts are to include static magnetic field strength, maximum spatial gradient, specific absorption rate (SAR) and maximum gradient slew rate; to be evaluated up to 7T MRI scanner.

Purpose

To evaluate the scanning conditions and associated MRI safety concerns when scanning patient with Programmable CSF VP shunt.

Summary of Content

Modern programmable VP shunts are MR conditional up to 3T, however 1.5T offers lower SAR and image artefact. Manufacturers specifications provide scanning conditions that must be adhered to, which will prevent tissue heating and valve damage. Knowledge of Maximum Spatial Gradient is key to avoiding valve alteration. 7T MRI scanners are unsafe for programmable VP shunts, as they lose function and re-programmability after exposure to the stronger magnetic field. Pre and Post MRI verification of the valve setting is highly recommended, to ensure patient safety and optimal functioning of the device. Dysfunctional VP shunt risk severe conditions, including subdural hematoma. Safety first.

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P101 A comparison of computed tomography and magnetic resonance imaging features of chronic subdural haematoma in the prediction of prognostic outcome

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Background

Chronic Subdural Haematoma (CSDH) is a common condition particular in elderly patients. Clinical presentation varies from mild cognitive impairment to severe neurological deficits, depending on haematoma size and location (Iliescu, 2015). Prognostic assessment is essential for treatment decisions, yet consensus into the effectiveness of CT and MRI in predicting outcomes is limited (Kwon et al, 2022). The study aimed to identify and compare the imaging features of CSDH in each modality, assessing their ability to characterise CSDH and define associations between recurrence, postoperative complications, and mortality.

Method

A systematic literature search was conducted across Scopus, Medline and Web of Science using MeSH terms and Boolean operators. Studies were limited to the last 5 years, peer-reviewed, in English, including adult populations. Nine retrospective cohort studies were reviewed based on their CASP score, and imaging features, outcome measures, and prognostic indicators were analysed.

Results

CT is utilised for its rapid assessment of haematoma size and pneumocephalus, while MRI offers more detailed soft tissue insights and biological markers. However, comparisons between CT and MRI were indirect, based on different patient populations, limiting definitive conclusions on their relative prognostic accuracy.

Conclusion

CT and MRI provide complementary insights; however, imaging predictors should be interpreted alongside clinical factors such as age and comorbidities. The indirect comparisons within the literature sourced for this study emphasised the need for prospective, multicentre studies with standardised imaging protocols.

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P102 A rare case of primary paediatric-type spinal glioblastoma in an adult

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Background

In this report, we present the rare case of a 72-year-old male patient with primary spinal glioblastoma multiforme (GBM), treated with surgical biopsy and radiotherapy with histological, radiological and clinical details.

Methods

A literature review of the imaging and clinical findings in typical spinal GBM. Spinal GBM is a condition generally seen in the male and under 30s. Clinical signs and symptoms of typical spinal GBM often include pain, weakness, bowel and bladder dysfunction. Gadolinium enhanced Magnetic Resonance Imaging (MRI) generally shows contrast enhanced intramedullary lesions most commonly in the thoracic and cervical spine.

Results

This case demonstrated an atypical presentation of spinal GBM. Spinal GBM is often a condition that affects the younger population with a poor prognosis, yet our patient presented to hospital in the older age bracket with an unusually long survival – still alive till date. MRI demonstrated an intramedullary lesion at T11 and T12 with expansion of the spinal cord, however this case of spinal GBM was uncommonly non-enhancing on MRI. Histology confirmed a diffuse, paediatric-type CNS WHO Grade 4 IDH wildtype H3 wildtype glioma.

Conclusion

Spinal GBM is a rare pathological finding with a poor prognosis. Clinicians must consider this differential diagnosis for patients with paraesthesia and muscle weakness. Although an unusual age range and tumour location, spinal GBM should not be excluded even in older adults presenting with such symptoms. Although very rare, this condition can atypically present in the spinal cord and should be considered when patients present with such symptoms.

P103 A retrospective case series on malignant and malignant-like lesions of the mandible: a review of 32 cases

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Background

Primary bone malignancies of the mandible are uncommon but can manifest through various presentations. As well as primary malignancies, the mandible can host metastatic lesions and other malignant-like lesions such as odontogenic cysts. Differentiation between these lesions is important but, due to the rarity, the current coverage of mandibular malignancies in the literature is sparse. To date, this work provides the largest case series of mandibular malignancies in the available literature with the aim of aiding radiologists in the identification and characterisation of aggressive mandibular lesions.

Methods

A retrospective case series of 32 patients from a tertiary orthopaedic imaging centre was conducted from cases between the years 2010-2025. All 32 patients had malignant lesions confirmed by histology. Each case was reviewed by a fellowship-trained musculoskeletal radiologist with over 20 years experience to assess radiological appearance and histological correlation.

Results

The total cohort (n=33) of patients had a mean age of 42.4 (SD ±20.9) years, divided between 15 males (45.5%) and 18 females (54.5%). Cases included osteosarcoma (n=21), radiation-induced sarcoma (n=3), Ewing's sarcoma (n=3) and 6 other rare tumours, each with 1 patient each. Radiological features and clinical information was collected and compared. Conclusion This is the largest case series of malignant mandibular lesions in the current literature. This paper collects nuances in radiological presentation to inform the clinician when considering mandibular lesions.

P104 Assessing random and systematic errors in image-guided radiation therapy across multiple cancer sites: a retrospective review

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Background

Patient setup errors significantly affect advanced treatment techniques due to their steep dose gradients. Even small setup deviations can cause underdosing of the target and increased dose to organs at risk.

Method

90 VMAT patients were prospectively enrolled. Each underwent pre-treatment CBCT, resulting in 1,653 clinical images analysed using Offline Review_Eclipse software. Images and online corrections were reviewed with VARIAN On-board Imaging Systems, registering CBCT to planning CT via automatic bone/soft tissue matching and manual fine-tuning when needed. Translational errors in X, Y, and Z directions were calculated to determine systematic (Σ) and random errors (σ) in vertical, longitudinal, lateral, pitch, roll, and rotation. The Stroom error estimation method was used, and the CTV-PTV setup margin (mm) was calculated using Van Herk's formula: $2.5\Sigma + 0.7\sigma$.

Results

The study results align with previous literature, showing mean translational errors within acceptable ranges for head and neck (H&N) and brain sites. The mean translational errors were as follows:

- H&N: Vrt -3.10 to 2.50 mm, Lng -2.70 to 3.30 mm, Lat -2.60 to 2.30 mm
- Brain: Vrt -2.90 to 2.70 mm, Lng -3.20 to 2.10 mm, Lat -2.60 to 3.20 mm
- Rotational errors were all less than 3 degrees. Systematic and random errors remained below 3 mm in all directions for both sites, with calculated PTV margins under 5 mm in each direction.

Conclusion

This work concludes that a 5.00 mm CTV-PTV margin is suitable for CBCT in H&N and brain patients to ensure at least 95% target dose coverage.

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P105 Cervical Cord MTR Differentiates MS from Controls and Is Lowest in SPMS

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Background

Magnetisation transfer imaging (MTI) can detect macromolecular alterations in the cervical spinal cord (CSC) in multiple sclerosis (MS).

Methods

Healthy controls (HCs, n=20), relapsing–remitting MS (RRMS, n=30), and secondary progressive MS (SPMS, n=6) underwent 3T MTI. Mean MTR was quantified (C2–C5) in automated regions of interest (ROIs): white matter (WM), dorsal columns (DC), ventral columns (VC), and lateral columns (LC). Group differences were assessed using ANOVA/Welch with Games–Howell post hoc tests, and pairwise t-tests. Associations with disability (EDSS) were evaluated using Pearson correlation and simple linear regression.

Results

MTR differed significantly among groups in all ROIs (all $p < 0.001$), with a consistent gradient of $HC > RRMS > SPMS$: WM 49.5 ± 2.3 (HC) vs 44.7 ± 4.3 (RRMS) vs 38.8 ± 3.7 (SPMS); DC 48.8 ± 2.4 vs 44.9 ± 3.6 vs 41.5 ± 4.7 ; VC 50.5 ± 2.5 vs 45.3 ± 4.9 vs 35.5 ± 5.2 ; LC 49.4 ± 2.5 vs 44.5 ± 4.7 vs 39.1 ± 2.6 . The largest absolute reduction was observed in the ventral columns. In RRMS, MTR showed negative (non-significant) correlations with EDSS across ROIs (WM $r = -0.1$, $p = 0.46$; DC $r = -0.1$, $p = 0.53$; VC $r = -0.1$, $p = 0.66$; LC $r = -0.0$, $p = 0.99$; R^2 0.0–0.02). In SPMS, correlations were positive but also non-significant (WM $r = 0.2$, $p = 0.69$; DC $r = 0.4$, $p = 0.47$; VC $r = 0.2$, $p = 0.65$; LC $r = 0.3$, $p = 0.63$; R^2 0.0–0.1).

Conclusions

MTR robustly differentiates MS from HCs across CSC ROIs and shows greater reduction in SPMS, particularly in ventral and lateral columns, though MTR was not significantly associated with EDSS in this cohort.

P106 Check five to keep them alive!

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Background

Non contrast CT head scans are a common scan performed out of hours at hospitals all across the country. It is also one of the first scans that on-call resident doctors become familiar with. However, there is often concern regarding subtle but clinically significant pathology that can be missed especially on a busy shift.

Purpose

This case review / pictorial review / educational presentation is designed to highlight 5 key review areas to help spot subtle but critical findings on non contrast CT head scans. This would be useful for: Junior resident doctors who are just beginning on-call reporting, Senior resident doctors who are taking strides towards independent practice and also for Consultant radiologists to focus the mind on a busy acute reporting list.

Summary of content

Case discussion (if oral) or pictorial review (if ePoster) to highlight the 5 key review areas.

- 1: Basilar artery (because there is only one and it is arguably the most important review area).
- 2: Temporal horns (because patients have 2 of them).
- 3: Venous sinuses (Three-nous sinuses).
- 4: 4th ventricle.
- 5: Suprasellar cistern (5 pointed star)

P107 Computed Tomography Evaluation of a Rare Tessier Type VII Facial Cleft Variant

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Background

Craniofacial clefts arise from incomplete fusion of facial processes and are described using the Tessier system. Type VII clefts usually extend laterally from the oral commissure. Extension to the anterior palate and alveolar arches is rare. CT is essential for defining the defect and supporting surgical planning.

Aim / Objectives

To present a rare Tessier Type VII facial cleft variant and highlight CT features relevant to radiological assessment and preoperative planning.

Case Description / Methods

A one year old girl with feeding difficulty and macrostomia underwent high resolution CT before surgery. Axial, coronal and three dimensional reconstructions were reviewed to assess maxillofacial, mandibular and skull base anatomy.

Imaging Findings

CT showed bilateral discontinuity of the anterior hard palate, deformity of the maxillary alveolar arches with unerupted tooth buds, hypoplastic medial pterygoid plates, micrognathia with posterior mandibular displacement and bilateral otic capsule sclerosis. Nasal bones, orbits, paranasal sinuses and temporomandibular joints appeared preserved.

Discussion

This case expands the recognised spectrum of Type VII clefts. Systematic CT evaluation helps identify associated skeletal abnormalities and guides reconstructive planning aimed at improving oral competence and facial symmetry. The case also supports trainee understanding of complex craniofacial differences and demonstrates the radiologist role in multidisciplinary care.

Conclusion

CT is central to evaluating rare craniofacial clefts and planning reconstruction. Recognition of atypical extensions and related abnormalities supports accurate and comprehensive reporting.

Teaching Points

Type VII clefts may extend to the palate and alveolar arches. CT provides essential anatomical detail for planning. Assessment should include the mandible, pterygoid plates and otic capsule.



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Fearon, J.A. (2008) 'Rare craniofacial clefts: a surgical classification', *Journal of Craniofacial Surgery*, 19(1), pp. 110–112.

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P108 Differential Effects of Acute Supplementation on Cerebral Blood Flow Velocity and Working Memory in Healthy Older Adults: A Crossover Trial

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Background

Age-related declines in cerebrovascular and cognitive function represent a major public health challenge. Dietary flavanols, particularly from cacao, may mitigate these declines by enhancing endothelial function. This study investigated the acute effects of cocoa flavanols on cerebrovascular function and cognitive performance in healthy older adults.

Methods

In a double-blind, randomised, placebo-controlled crossover trial, 21 healthy older adults (mean age 68.3 ± 6.2 years; 14 female) completed two sessions separated by a washout period. Each session involved baseline measurements of middle cerebral artery velocity (MCAv) via Transcranial Doppler ultrasound and cognitive performance (14 outcome measures). Participants consumed placebo or cocoa flavanols (750 mg), with measures repeated two hours post-ingestion. Participants completed the alternative condition at a second visit.

Results

A significant Condition $\times$ Time interaction was observed for resting MCAv ($F(1,20) = 4.57$, $p = 0.045$, $\eta^2 = 0.186$), with one supplement increasing MCAv while the other decreased. A selective cognitive effect was found for working memory: Serial 7s errors showed a significant interaction ($F(1,19) = 4.87$, $p = 0.040$, $\eta^2 = 0.204$), with the same supplement reducing errors. A global cognitive composite derived from z-scores of all 14 measures showed no significant interaction ($p = 0.848$). Main effects of time were noted across several tests, suggesting possible learning effects.

Conclusion

Acute ingestion of one supplement increased resting cerebral blood flow velocity and selectively improved working memory accuracy without enhancing global cognition, suggesting a targeted rather than generalised neurovascular cognitive benefit. MRI and biomarker analyses are ongoing.

Table 1: Summary of Condition $\times$ Time interaction effects for cerebrovascular and cognitive outcomes.

Outcome Measure	F	df	p	η^2
Resting MCAv (cm/s)	4.57	1, 20	0.045*	0.186
Go/No-Go RT (ms)	0.01	1, 19	0.918	0.001
N-Back Accuracy (%)	0.11	1, 19	0.741	0.006
Stroop Interference (ms)	2.13	1, 19	0.161	0.101
Word List Immediate Recall	0.34	1, 19	0.567	0.018
Word List Delayed Recall	0.01	1, 19	0.944	0.000
Serial 7s Correct	3.03	1, 19	0.098	0.138
Serial 7s Errors	4.87	1, 19	0.040*	0.204
Global Cognitive Composite	0.04	1, 19	0.848	0.002

Note. MCAv = middle cerebral artery velocity; RT = reaction time. * $p < 0.05$. Only primary cognitive variables shown; full results for all 14 measures available on request.

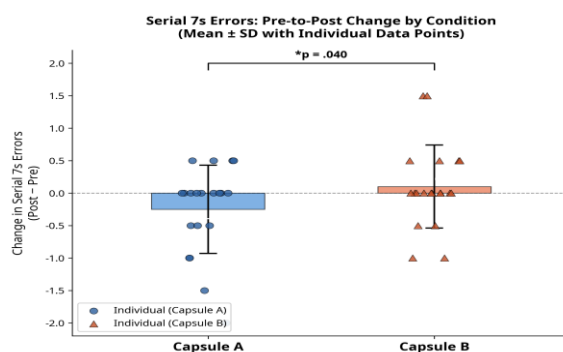


Figure 1. Mean pre-to-post change in Serial 7s errors by supplement condition. Error bars represent standard deviation. Individual participant change scores are shown as circles (Supplement A) and triangles (Supplement B). * $p = 0.040$.

Desideri, G., Kwik-Urbe, C., Grassi, D., Necozione, S., Ghiadoni, L., Mastroiacovo, D., Raffaele, A., Ferri, C., Bocale, R., Lechi, A. and Marini, C. (2012) Benefits in cognitive function, blood pressure, and insulin resistance through cocoa flavanol consumption in elderly subjects with mild cognitive impairment: the Cocoa, Cognition, and Aging (CoCoA) study. *Hypertension*, 60(3), pp.794-801.

Lamport, D.J., Pal, D., Moutsiana, C., Field, D.T., Williams, C.M., Spencer, J.P.E. and Butler, L.T. (2015) The effect of flavanol-rich cocoa on cerebral perfusion in healthy older adults during conscious resting state: a placebo controlled, crossover, acute trial. *Psychopharmacology*, 232(17), pp.3227-3234.

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P109 Review of the imaging appearances intracranial hypotension and hypertension

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Background

Intracranial hypotension and hypertension are reasonably common diagnoses that can be seen on both CT and MRI head scans. Because of the symmetrical, bilateral and diffuse imaging appearances, these diagnoses are often missed.

Purpose

To highlight the imaging appearances of both intracranial hypotension and hypertension.

Summary of content

Review of the imaging appearances of both intracranial hypotension and hypertension. This can either be done as a case walkthrough if oral poster or a pictorial review if ePoster.

P111 Magnetic Resonance Imaging Sequence Optimisation for Improved Detection and Diagnostic Accuracy of Brain Metastases

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Aims

The aim of this study is to compare the diagnostic accuracy of magnetic resonance imaging (MRI) sequences routinely utilised for the detection of brain metastases (BMs) in adult patients. Objectives were to define and compare the different MRI acquisition techniques used for the detection and characterisation of BMs, and to determine the optimal combination of imaging sequences for diagnostic accuracy.

Method

Literature was obtained from Scopus, Pubmed, ScienceDirect, Web of Science and Medline from 2019-2024. Search terms included variations of "MRI sequences," "MRI protocol," and specific sequences such as "T1-weighted," "T2-weighted," "FLAIR," and "DWI," in combination with "brain metastases". A filtering process was applied, followed by quality appraisal utilising the Critical Appraisal Skills Programme (CASP) tool. Studies were included if diagnostic accuracy metrics were incorporated, and were peer-reviewed primary research. Studies were excluded if they were non-English, had research on other brain pathologies, AI-focused, published before 2019, systematic reviews, or meta-analyses. Data extraction focused on MRI sequences, scanner strength, statistical methods, and study methodologies to assess MRI variability and diagnostic performance.

Findings and conclusion

Findings reveal significant heterogeneity in imaging protocols, as no distinct sequence proves to be universally superior. The immense variety of statistical methods used across all studies further complicates comparisons. While 3D T1-weighted post-contrast MRI remains the primary sequence utilised, others such as Sampling Perfection with Application optimised Contrast using different flip angle Evolution (SPACE) show promise in enhancing detection. Differences in field strength, delay times, and radiologist expertise also contribute to variability in diagnostic performance.

P112 A Systematic Review of the Clinical Indications and Utilisation Patterns of Cardiac MRI in a Rural Hospital (2024–2025)

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Introduction

Cardiovascular disease remains a leading cause of morbidity and mortality worldwide, creating increasing demand for accurate diagnostic imaging (World Health Organization, 2025). Cardiac magnetic resonance imaging (CMR) is recognised as a gold-standard modality for assessing cardiac structure, function, and tissue characterisation, with established value in diagnosing cardiomyopathy, myocarditis, and ischaemic heart disease (Kramer et al., 2020; Popa et al., 2024). Despite its clinical importance, evidence regarding the utilisation of CMR in rural hospital settings remains limited (Wakerman and Humphreys, 2013).

Methods

A retrospective review was conducted of 114 CMR examinations performed between January 2024 and January 2025 at a rural general hospital. Data were extracted from radiology systems and finalised reports to assess patient demographics, referral patterns, clinical indications, imaging protocols, diagnostic findings, image quality, and management outcomes. Descriptive statistical analysis was performed.

Results

The mean patient age was 55 years, with 60.5% male participants, and scans were performed in outpatient settings (72.8%). The most common indications were cardiomyopathy (18.4%), myocarditis (13.2%), and ischaemic evaluation (10.5%). Gadolinium-based contrast was used in 97.4% of studies. All examinations were adequate. Myocardial scar or fibrosis (44.7%) and myocarditis (21.1%) were the most frequent findings. CMR influenced patient management in 99.1% of cases through diagnostic clarification, new diagnoses, treatment modification, and specialist referral. No adverse events were reported.

Conclusion

CMR is a safe and clinically valuable imaging modality in rural hospitals. Despite limited access to advanced protocols, it provides significant diagnostic and management benefits and supports improved cardiovascular care in rural populations. (coronary angiography).

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2. Popa, A., Cionca, C., Agoston, R., Rusu, F., Tarcau, B.M., Negru, A., Orzan, R.I. and Agoston-Coldea, L. (2024) 'The role of magnetic resonance imaging in risk stratification of patients with acute myocarditis', *Diagnostics*, 14(13), p.1426.
3. Wakerman, J. and Humphreys, J.S. (2013) 'Sustainable workforce and sustainable health systems for rural and remote Australia', *Medical Journal of Australia*, 199(5 Suppl), pp. S14–S17.
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P115 Functional brain abnormalities in bipolar disorder

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Background

Bipolar disorder (BD) is a psychiatric illness causing significant functional impairment, reduced life expectancy, and long-term disability (Burdick et al., 2022). The consistency of findings from various fMRI studies on BD remains unclear, limiting their clinical application (Wu et al., 2024). The null hypothesis of this study was that there are no localized brain abnormalities reported consistently across independent fMRI studies on BD.

Methods

A systematic search for relevant event-related fMRI studies investigating brain activation in patients with BD was conducted across three databases, and quality assessment was performed on eligible studies. A GingerALE meta-analysis was conducted to test the null hypothesis. A cluster-level FWE-corrected $p < 0.05$, uncorrected $p < 0.001$, and 1000 permutations were applied to the foci for the calculations.

Results

From 810 studies, 32 met the inclusion criteria, yielding 431 activation foci for ALE meta-analysis. Significant convergence of activation was identified in the right dorsal ACC, bilateral basal ganglia, right insula, premotor cortex and supplementary motor area in patients with BD, indicating the consistency of their reports across primary neuroimaging studies. Hence, the study's findings contradicted the null hypothesis.

Conclusion

The identified brain areas are associated with disrupted cognitive control, motor dysfunction, emotional dysregulation, and altered salience detection in individuals with BD. Understanding the consistency of the functional abnormalities identified in this study is important for improving the diagnostic accuracy and treatment effectiveness of the disorder.

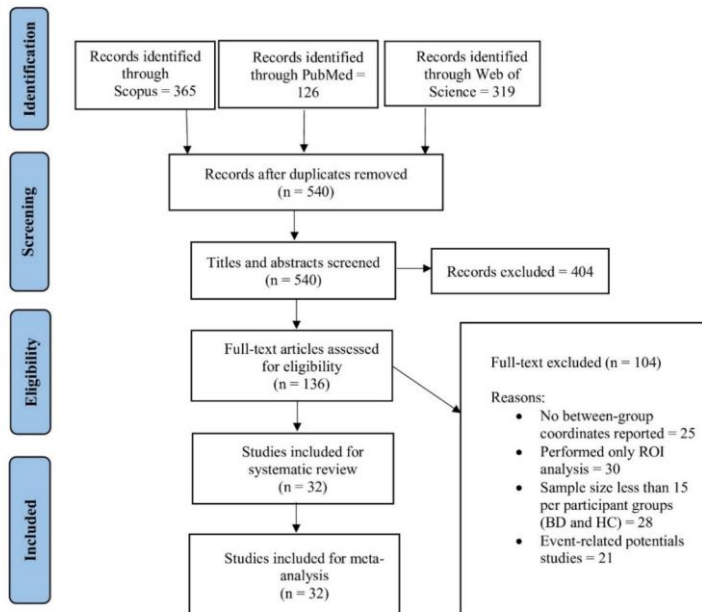


Figure 1. Study selection process

Table 1. Cluster information from ALE meta-analysis

Brain region	Hemisphere	MNI Coordinates			ALE Value (10 ⁻³)
		x	y	z	
Dorsal ACC	R	7	45	1	4.93
Basal ganglia (Putamen)	R	22	4	-9	6.78
Basal ganglia (Globus Pallidus)	L	-19	1	-3	4.34
Insula	R	40	18	-3	3.70
Premotor cortex and SMA	L	-42	8	47	5.39

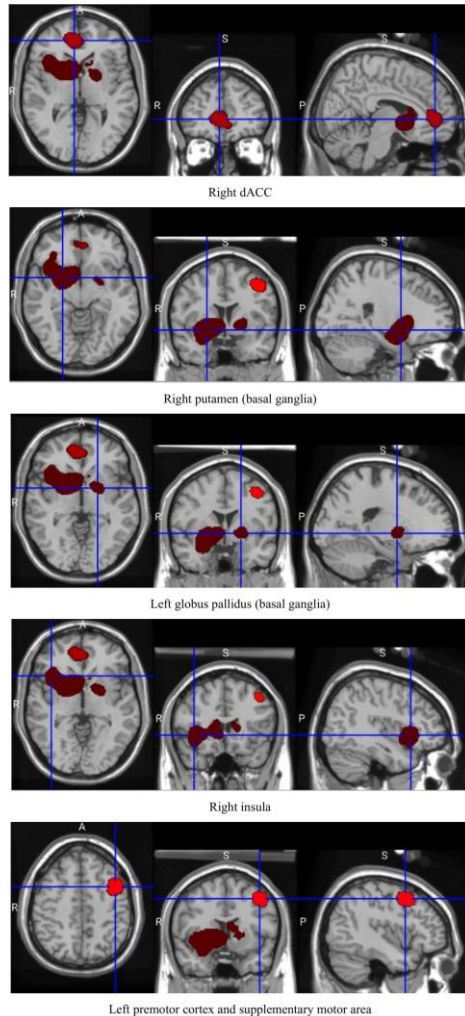


Figure 2: Significant convergence of activation in brain regions. The cluster image (red-shaded areas) overlaid on spatially normalised brain scans for anatomical localisation.

1. Burdick, K.E. et al. (2022) "Predictors of Functional impairment in Bipolar Disorder: Results from 13 Cohorts from Seven Countries by The Global Bipolar Cohort Collaborative," *Bipolar disorders*, 24(7), p. 709.
2. Wu, Y. et al. (2024) "Advances in functional MRI research in bipolar disorder: from the perspective of mood states," *General Psychiatry*, 37(1), p. 101398.

P116 Imaging Biomarkers for early detection of Alzheimer's Disease

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Introduction

Alzheimer's disease (AD) is a progressive neurodegenerative disorder characterised by cognitive decline and functional impairment (World Health Organization, 2021). Neuropathological changes often occur years before symptoms appear, highlighting the importance of early detection (Jack et al., 2018). Structural neuroimaging techniques, particularly magnetic resonance imaging (MRI) and computed tomography (CT), offer non-invasive methods for identifying brain abnormalities associated with AD (Frisoni et al., 2010). However, variation in imaging methods may influence diagnostic accuracy.

Methods

A systematic review was conducted using Ovid Medline and Embase databases to identify observational studies published between 1999 and 2021. Included studies used MRI and/or CT imaging to diagnose preclinical AD, mild cognitive impairment (MCI), or early-stage AD in adults. Studies involving late-stage AD or fluid biomarkers were excluded. Data on imaging techniques, biomarkers, follow-up duration, and diagnostic outcomes were extracted. Study quality and potential bias were assessed using the Newcastle-Ottawa Scale.

Results

Fourteen studies met the inclusion criteria. Commonly reported biomarkers included hippocampal atrophy, medial temporal lobe degeneration, ventricular enlargement, and whole-brain atrophy. Longitudinal MRI studies were highly effective in predicting cognitive decline and progression from MCI to AD. Advanced MRI techniques, such as voxel-based morphometry and automated segmentation, improved detection sensitivity. CT imaging was less sensitive in identifying early structural changes.

Conclusion

Structural neuroimaging, particularly MRI, is valuable for early detection and prognosis of AD. While CT scans can assist diagnosis, they are less effective in early stages. Further research is needed to optimise imaging techniques and improve early diagnostic accuracy.

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3. World Health Organization (2021) *Global status report on the public health response to dementia*. Geneva: World Health Organization.

P117 Primary Immature Cystic Renal Teratoma in a Newborn: Case Report and Review of the Literature

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Teratomas are neoplasms that arise mostly from the gonads. Kidney is one of the rare locations for teratoma and immature renal teratomas are extremely rare. In this case report, we describe a case of immature renal teratoma in female neonate, initially detected on antenatal ultrasound as a cystic abdominal mass. Postnatal MRI demonstrated a right kidney predominantly cystic mass involving the upper and middle pole with enhancing septae and solid components. No gross or microscopic fat detected. Complete surgical excision was done and post surgical histopathology examination revealed Grade II immature teratoma. One year of the surgery, the patient remains stable with no signs of tumor recurrence. Currently, there is no standard treatment known for this clinical condition and prognosis remains unclear. Early detection and surgical intervention is the primary treatment while the role of postoperative adjuvant chemotherapy is controversial.

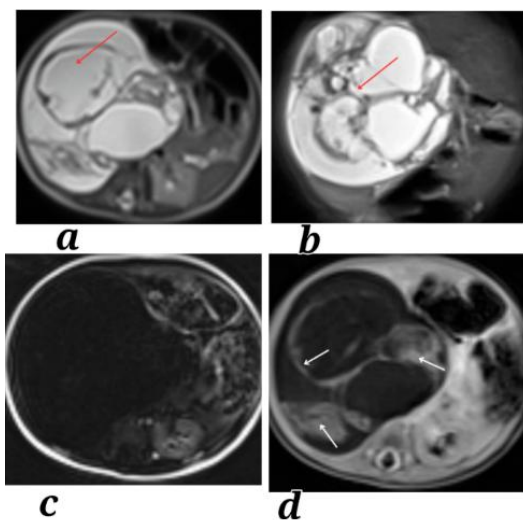


Figure 1: MRI images (a) axial T2W, (b) coronal T2W, (c) axial T1W without contrast, and (d) axial T1W with contrast - demonstrating a predominantly T2W hyperintense lesion with central hypointense septations and enhancing solid components.

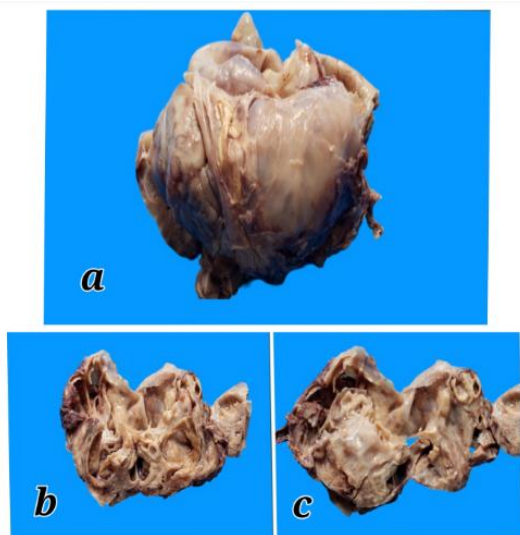


Figure 2: (a) showing a gross picture. (b) and (c) showing Cut surface: 10 × 10 × 7 cm multiloculated gray-white cystic mass with bony-hard areas, sharply demarcated from compressed residual renal parenchyma (5 × 2 × 2 cm).

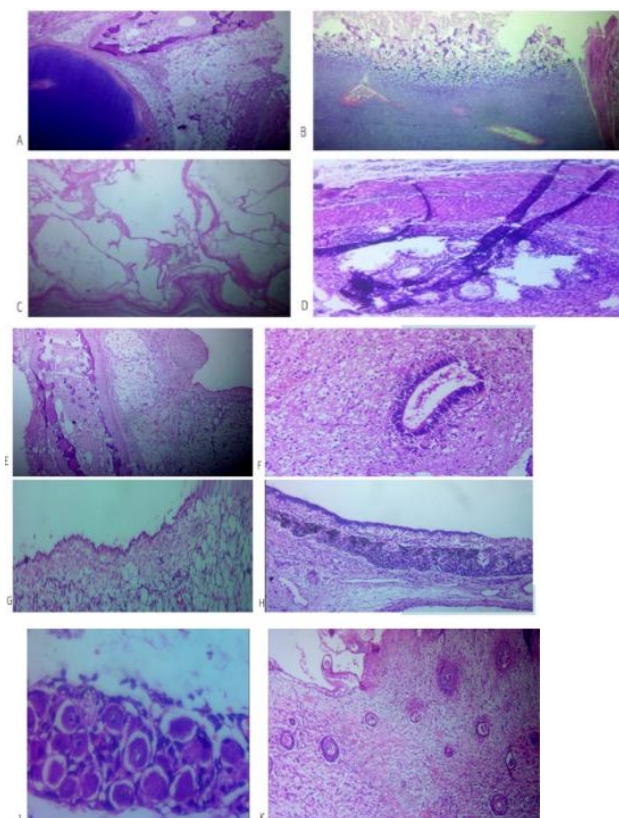


Figure 3: Histopathological analysis showed an encapsulated multilocular cystic lesion composed of mature adipocytes, cartilage, bony trabeculae, mature brain parenchyma, fibrous stroma, ciliated pseudostratified columnar epithelium, skin adnexal structures, and foveolar epithelium compressing but not infiltrating the renal parenchyma. A focus of immature neuroepithelium was also identified. Capsular breach was not evident, and the ureteric margin was free of tumor.
Conclusion: Grade II renal immature teratoma.

1. Karima IS, Hinde E, Aziz E, et al. Primary renal teratoma: a rare entity. *J Pediatr Surg.* 2013;48(6):e1–e3.
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4. Smith HO, Berwick M, Verschraegen CF, et al. Incidence and survival rate for female malignant germ cell tumors. *Obstet Gynecol.* 2006;107(6):1358–68.
5. Hamidi H, Foladi N. Intrarenal teratoma within horseshoe kidney: a case report. *Int J Surg Case Rep.* 2020;71:1743–6.
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P118 Are we meeting the Gold Standard? An Audit of Paediatric Lateral Whole Spine imaging

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Whole spine radiography is essential for assessing paediatric spinal deformities, with accurate interpretation dependent on standardised imaging technique. Consistent positioning, collimation, exposure and ruler placement are critical, as sagittal imbalance can significantly affect radiographic assessment and longitudinal comparison (Kubat & Ovadia, 2020). This audit evaluated departmental adherence to gold standard criteria against local and national guidance. A retrospective audit of 136 paediatric lateral whole spine radiographs (17/09/2025–17/10/2025) was conducted in line with trust protocol. Images were sourced via HIVE and reviewed on Sectra PACS under standardised conditions. Each radiograph was evaluated across four areas: positioning, collimation, exposure and ruler placement. Standards were taken from local professional guidance and peer-reviewed evidence relating to spinal balance and alignment assessment (Kubat & Ovadia, 2020). Descriptive analysis identified compliance and areas for improvement. Gold standard positioning was achieved in 57% of images; 23% demonstrated posterior lean, 9% anterior lean and 11% rotation, potentially distorting curvature thus affecting deformity assessment. Collimation met gold standards in 46% of cases, 33% under-collimated and 21% over-collimated, risking increased dose or excluding anatomy. Exposure showed the greatest variability, with only 38% meeting gold standard, 29% were underexposed and 26% inconsistent, mainly at thoracic and lumbar levels. Ruler placement demonstrated high compliance, meeting gold standard in 84% of images. Although many radiographs demonstrated good practice, significant variation remains in positioning, collimation and exposure, all of which impact diagnostic reliability. Targeted staff training, visual technique aids and exposure protocol optimisation are recommended. A re-audit is planned for 2026.

1. Kubat, O. & Ovadia, D. (2020) 'Frontal and sagittal imbalance in patients with adolescent idiopathic deformity', *Annals of Translational Medicine*, 8(2), p. 29.

P119 Beyond the Scanner: How Children Are Prepared and Supported for MRI in Routine Practice

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Background

Magnetic resonance imaging (MRI) causes anxiety in many people, including children who can become distressed causing reduced image quality and premature termination of the examination. Evidence suggests that children undergoing MRI have better experiences and results when they are prepared and supported before and during their scan. The best preparatory interventions remain unclear, and there is no gold standard for preparing children for MRI. The aim of this study was to provide a snapshot of how children are currently prepared for MRI in the UK and which interventions are perceived by staff to be most beneficial.

Method

An online questionnaire consisting of both open and closed questions to elicit information on interventions used to prepare children and their perceived success, was disseminated to radiographers working in MRI across the UK.

Results

There were 154 respondents. Pre-appointment preparation included educational materials (64%), visits (56%) and play therapist support (62%). On the day support included child-friendly waiting areas (50%), scan rooms (43%). Distraction (96%) during the scan included parental presence, music/videos and comfort objects. Sedation was commonly used for younger children, as well as neurodivergent or anxious children. 30 respondents reported no available resources prior to, or on the day of the examination. Key challenges to examining children were identified as movement, anxiety, time pressures and limited training.

Conclusions

Practice varies in the preparation of children for MRI. Further research is needed to identify which interventions improve children's experiences and image quality, are cost-effective and scalable across services.

P120 Can the implementation of an ultrasound reporting template enhance diagnostic accuracy when evaluating appendicitis in paediatrics?

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Background

Ultrasound is the first-line imaging for suspected appendicitis in children, but equivocal reports and operator variability often cause diagnostic uncertainty, leading to risks of radiation exposure and unnecessary operations.

Methods

A retrospective service evaluation was conducted at a single tertiary paediatric NHS trust, comparing 275 ultrasound examinations performed before template introduction with 599 examinations after its implementation. Diagnostic accuracy (sensitivity, specificity, positive and negative predictive values), equivocal rates, appendix visualisation, and follow-up imaging were assessed. Statistical analysis used Fisher's exact and chi-square tests.

Results

Overall diagnostic accuracy rose from 93.7% to 96.7% ($p=0.089$), driven by a significant increase in specificity from 91.3% (94/103) to 96.7% (294/304) ($p=0.031$), while sensitivity remained stable at 96.5% pre- (83/86) and post-template (167/173) ($p=1.000$). Equivocal reporting fell from 31.3% (86/275) to 20.4% (122/599) ($p<0.001$), with the largest drop among sonographers (35.5% to 15.8%) ($p<0.001$). Comparing all template-used vs. non-used exams, equivocal rates decreased further to 11.6% and appendix visualisation rose from 33.2% to 51.4% (both $p<0.001$). In repeat imaging ($n=29$), post-template cases reached 100% resolution and accuracy, with equivocal rates dropping from 29.4% (5/17) to 8.3% (1/12) and visualisation increasing to 75.0% ($p<0.001$). Follow-up imaging declined by 62% (7.3% to 2.8%, $p=0.004$).

Conclusion

A standardised ultrasound reporting template significantly improves diagnostic accuracy for paediatric appendicitis by boosting specificity and reducing equivocal reports, without affecting sensitivity. These results support routine use of structured reporting to enhance diagnostic confidence and reduce unnecessary interventions.

P121 Chest x-ray use in children with mild to moderate bronchiolitis and viral-induced wheeze: a local audit to reduce low-value investigations

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Background

NICE guidance advises against routine chest x-ray (CXR) use in bronchiolitis, as imaging rarely alters management and may lead to unnecessary antibiotic use and radiation exposure. We audited CXR use in children <2 years presenting with dyspnoea due to suspected bronchiolitis or viral-induced wheeze to a busy central London paediatric emergency department.

Methods

A retrospective audit was conducted over a one-month period of infants and children <2 years presenting with bronchiolitis or viral-induced wheeze. Clinical records were reviewed for markers of disease severity, including respiratory distress, oxygen requirement, and escalation of care. CXRs were reviewed by a consultant paediatric radiologist and appropriateness of the CXR was reviewed by two independent paediatric consultants according to NICE and local Trust guidance.

Results

A total of 117 children were identified. 30 were <3 months and 87 were ≥3 months. CXRs were obtained in 30 patients, more often in those ≥3 months (25/87, 28.7%) than <3 months (5/30, 16.7%). Twenty out of thirty were diagnosed with bronchiolitis and ten with viral-induced wheeze. CXRs were deemed appropriate in 16/20 (80.0%) bronchiolitis cases and 9/10 (90.0%) viral-induced wheeze cases. All five CXRs (16.7%) that were deemed inappropriate occurred in children with mild to moderate disease. Antibiotics were initiated following CXR in 17/30 (56.7%) cases, including three following inappropriate imaging.

Conclusion

Overall compliance with guidance was good; however, avoidable CXR use persists in mild to moderate bronchiolitis and may contribute to unnecessary antibiotic prescribing. Targeted education, reinforcement imaging guidance and re-audit may further reduce low-value investigations.

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P122 Paediatric PUO: whole body MRI or FDG PET-CT?

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Background

Pyrexia of unknown origin (PUO) represents a complex diagnostic challenge in the paediatric population. Advanced imaging techniques are frequently required to guide diagnosis and management, yet there is currently no agreed imaging pathway for paediatric PUO. As a result, significant variation exists between UK institutions. FDG PET-CT is well established in the investigation of PUO, particularly in adults, with proven diagnostic yield for infectious, inflammatory and malignant causes. There is increasing use of whole-body MRI (WB-MRI) and, given its lack of ionising radiation, is attractive for the paediatric population. Evidence comparing these modalities in paediatric PUO remains limited, creating uncertainty in clinical practice.

Purpose:

This educational poster:

- Reviews the role of FDG PET-CT and WB-MRI in the investigation of paediatric PUO
- Compares the strengths and limitations of each modality, with emphasis on diagnostic yield, safety and practical considerations
- Translates current evidence and institutional experience into a pragmatic imaging approach applicable to UK practice

Summary:

The poster presents a review of paediatric PUO cases from a tertiary children's hospital over a five-year period in which FDG PET-CT or WB-MRI was performed. Imaging findings and clinical outcomes are compared, supported by illustrative case examples. A concise summary of the existing literature on advanced imaging in paediatric PUO is provided.

Based on this evidence and institutional experience, we propose a practical imaging algorithm for paediatric PUO in UK settings. The poster also includes a recommended WB-MRI protocol tailored to PUO assessment.

P123 The mystery of the paediatric mesentery unravelled

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The aim of this pictorial multimodality imaging review is to demystify the imaging features and characteristics of mesenteric lesions in the paediatric population. The mesentery is a difficult area to interrogate, particularly in children due to the lack of fat. When a mesenteric mass is identified on imaging, it is important to determine whether it's solid or cystic, as this distinction is vital for diagnosis. Most of the solid lesions are neoplastic while the purely cystic lesions are benign. We will explore cystic lesions such as lymphatic malformations, duplication cysts, pseudocysts, and mesenteric cysts and solid lesions such as post-transplant lymphoproliferative disorders and fat containing lesions.

Additionally, we will highlight the appearances of the mesentery in miscellaneous conditions such as traumatic mesenteric hematomas (which may have implications for suspected physical abuse), inflammatory changes like appendicitis and inflammatory bowel disease, and internal hernias. Some of the mesenteric lesions are incidentally discovered while others have life threatening complications such as volvulus and bowel ischaemia. We will showcase the imaging findings of a variety of cases above in conjunction with their clinical and surgical outcomes to stress the importance of scrutinising the mesentery when interpreting imaging in children.

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P124 Enhancing Diagnostic Quality in Paediatric Skeletal Surveys Through Training and Education: A Quality Improvement Audit

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Background

Paediatric skeletal surveys are a critical part of the assessment of Suspected Physical Abuse (SPA) and therefore should meet strict image quality standards to ensure diagnostic reliability.

Aim

This retrospective audit evaluated the baseline image quality in our paediatric skeletal surveys. Targeted educational interventions were then carried out using a PowerPoint presentation and face-to-face learning. The impact of these interventions were then measured against QSI standards.

Method

Images acquired over a six-month period were reviewed against established QSI criteria, including standards of radiographic principle, technical factors and positioning. Each criteria were given a rating of poor, acceptable and good. These were then measured against assurance levels determined by the department. Areas identified for improvement were incorporated into an educational PowerPoint which covered all aspects of SPA with the aim to facilitate improved understanding of the skeletal survey. This was delivered both face-to-face and as a training reference on the radiographer shared drive. In addition to this audit, results were shared as a mini poster highlighting the key findings of the audit enabling radiographers to focus on specific areas of improvement. Following implementation, a re-audit was undertaken every 6 months using the same evaluation framework to assess any change in image quality.

Results

Post intervention analysis showed an increase in overall image quality, technical factors, and standards of radiographic principle, demonstrated by better assurance levels. Although there are still some improvements to be made, this can be attributed to staff turnover and should improve once training is complete

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P125 A Convolutional Neural Network (CNN) to Grade Central Lumbar Spinal Stenosis

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Background

Central lumbar spinal canal stenosis is a leading cause of pain and disability in the ageing population. MRI grading is the current gold-standard diagnostic tool in the condition, but is limited by subjectivity and inter-observer variability. Artificial intelligence tools such as convolutional neural networks (CNNs) have been shown to aid subjective diagnoses. This study aimed to develop a novel CNN to classify central lumbar spinal canal stenosis.

Methods

We trained a convolutional neural network using a pretrained EfficientNetV2-B0 backbone to classify lumbar spinal canal stenosis into three clinically meaningful grades: no/mild stenosis (Grade A), moderate stenosis (Grades B and C), and severe stenosis (Grade D). A total of 8,239 axial lumbar MRI slices from the publicly available LSpineSMRI dataset were included. Data were split into stratified training (70%), validation (15%), and independent test (15%) sets. Class imbalance was addressed using class-weighted loss. Model performance was evaluated using accuracy, balanced accuracy, class-wise precision and recall, and macro-averaged area under the receiver operating characteristic curve (AUC). Model interpretability was assessed using Gradient-weighted Class Activation Mapping (Grad-CAM).

Results

On the independent test set, the model achieved an overall accuracy of approximately 68% and a balanced accuracy of 62%. Macro-averaged AUC was 0.81, indicating good discriminatory performance across stenosis grades. Sensitivity for severe stenosis (Grade D) was high (71%).

Conclusion

This study's deep learning model can reliably grade lumbar spinal canal stenosis to provide a useful clinical decision support tool. This tool could aid standardised and consistent reporting of the condition.

P126 Artificial Intelligence in the Diagnosis and Management of Tuberculous Spondylitis: A Systematic Review and Meta Analysis

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Background

Tuberculous spondylitis (TS) is a severe form of extrapulmonary tuberculosis (TB) infection, causing infection of intervertebral discs, destructive lesions, spinal collapse and kyphosis. Despite the severe consequences, radiological diagnosis is challenging and often requires microbiological confirmation, which can delay treatment and worsen the prognosis.

Methods

This systematic review adheres to the PRISMA 2020 guidelines and is registered to PROSPERO (CRD420251060188). Searches of PubMed, Embase, Scopus and World of Science yielded 161 studies. Each study was screened and extracted by 2 independent reviewers, with conflicts resolved through consensus. 7 studies were included in data analysis, and a subsequent meta-analysis was performed using a Bayesian multilevel bivariate approach. Risk of bias for each study was assessed using the QUADAS-2 tool.

Results

All 7 studies evaluated the use of deep learning of convolutional neural networks (CNNs) as index tests for differentiating tuberculous from non-tuberculous spondylitis. Overall pooled sensitivity was calculated to be 0.89 (95% CI: 0.77–0.95) and specificity 0.86 (95% CI: 0.63–0.96). AUC was also calculated to be 0.60 (95% CI: 0.06 - 0.96). This demonstrates the high diagnostic ability of AI models in diagnosing TS. Furthermore, subgroup analysis showed that MRI imaging is both more sensitive and specific than CT imaging when partnered with AI integration

Conclusion

To assess the clinical implications, a larger multicentre prospective study should assess the integration of AI in diagnostic pathways and validate the use of AI in real-world datasets.

P127 Beware: TB in the Rheumatology clinic Radiographs

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Background

Tuberculosis remains a major global problem. Rheumatic diseases often require treatments that suppress the immune system (DMARDs). These patients are at increased risk of developing TB. Patient's need screening Chest Radiographs. Radiologists and Radiographers need to be alert in these patients as to the risk of TB. TB infections in the spine can mimic spondyloarthropathy. Extraspinal manifestations can also cause confusion. Infected joints can be assumed wrongly to be due to Rheumatoid arthritis.

Purpose

We present a pictorial review of patients with TB affecting the chest (cavitating and miliary), spine, psoas muscles, soft tissues and joints. The images will provide a useful educational tool for Radiographers and radiologists alike.

Summary of Content

Radiologists and Radiographers need to be aware that patients on immune modifying drugs are at risk of TB and should remain vigilant.

P128 Beyond the Obvious in GCA Clinic: Three Diagnostic Mimics

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Background

Suspected giant cell arteritis (GCA) is a frequent referral reason to Rheumatology. Diagnosis is primarily clinical, supported by inflammatory markers, imaging, and histology, although none are definitive. We report three cases initially suspected as GCA that were subsequently identified as rarer mimics, with distinctive imaging features and atypical clinical features.

Purpose

3 cases illustrate the diagnostic and radiological difficulties.

Case 1

An 82-year-old male presented with five months of fatigue, weight loss, fevers and sweats. He developed right sided headache, hearing loss, jaw claudication and scalp tenderness, without mastoid tenderness. He had quiescent rheumatoid arthritis on methotrexate. MRI skull base and cervical spine demonstrated nasopharyngeal fluid collection and skull base osteomyelitis. Transnasal biopsy revealed necrotic tissue and staphylococcus aureus infection

Case 2

A 72-year-old female was admitted to hospital with right-sided headache, and right eye vision loss. Ophthalmic examination revealed right optic disc pallor. Whole-body CT demonstrated extensive lymph node, bone and lung metastases. Biopsy confirmed metastatic breast cancer. MRI highlighted subtle pituitary fossa enhancement.

Case 3

A 55-year-old male presented with a right-sided temporal headache and jaw claudication, with right scalp tenderness and lower facial numbness. CRP was elevated at 52mg/L. MRI head demonstrated invasive sinusitis, with right sphenoid mass. Histology confirmed necrosis and fungal hyphae, with a Rhizopus organism isolated.

Summary of Content

These cases highlight the importance of systematic evaluation in GCA clinic, including consideration of alternative diagnoses when atypical features are present. Imaging is essential.

P129 Can the measurement of cortical thickness on calcaneal X-rays indicate bone health through correlation with dual-energy X-ray absorptiometry (DXA) results?

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Introduction

Osteoporosis is a bone disease characterised by low bone mineral density (BMD), primarily affecting women, and increasing the risk of fragility fractures, contributing significant healthcare burden and imaging demand.

Background

This study utilised existing data to explore earlier identification of fragility fracture risk opportunistically using lateral ankle radiographs. The calcaneus was selected due to its clinical frequency and established use in ultrasound-based bone assessment.

Study Design

This study assessed lateral ankle radiographs from 60 female participants aged 50 and over to determine whether calcaneal cortical thickness correlated with proximal femur dual-energy X-ray absorptiometry (DXA) T-scores.

Materials and Methods

Cortical thickness of the calcaneus was measured at a single predefined location along the lateral cortex using ImageJ software. Measurements were repeated three times per image across four operators, with reproducibility assessed prior to correlation with DXA T-scores.

Results

Measurement reproducibility was high, demonstrating good inter- and intra-operator agreement (coefficient of variation <10%). However, no relationship was identified between calcaneal cortical thickness and proximal femur DXA T-scores (Pearson's correlation coefficient = 0.06).

Conclusion

The study demonstrates a reproducible approach to measuring calcaneal cortical thickness. However, no correlation was identified between calcaneal cortical thickness and proximal femur T-scores. This likely reflects the anatomical complexity and variability in radiographic appearance at the calcaneus, indicating that reproducibility alone may be insufficient for a single cortical thickness measure to represent proximal femur BMD. These findings highlight the importance of careful anatomical site selection, given variability in BMD change across the skeleton with age.

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P130 Evaluating the use of robotics in total knee replacement / arthroplasty surgeries and its benefits and drawbacks

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Background

Robotic-assisted total knee arthroplasty (RA-TKA) is intended to improve implant positioning and outcomes compared to conventional manual TKA (cTKA). This study aims to assess the benefits and possible drawbacks of RA-TKA compared to cTKA.

Methods

The study protocol was submitted to PROSPERO (ID CRD42022359681). SCOPUS, Web of Science, PubMed, MEDLINE and EMBASE databases were used for records search. Of the 977 records found, 235 duplicates were removed, 718 were excluded at title/abstract screening, and 24 records were fully reviewed. 16 studies were included in this review. There were two randomised control trials (RCT), the rest were comparative cohorts, a nationwide database study and single arm case series/learning curve studies. Risk of bias (RoB) was assessed using CASP and IHE. Certainty was graded using GRADE.

Results

The RCTs had some RoB concerns due to limited blinding and unclear concealment/analysis reporting for subjective outcomes. Most observational studies had high risk of bias from confounding, and administrative coding misclassification of database studies. Moderate certainty evidence from a large long-term RCT showed no clinically important differences in pain or function/Health related quality of life and no survivorship advantage at ≥10 years. Moderate certainty evidence showed improved short-term radiographic alignment, particularly in severe deformity. Low to very low certainty evidence for differences in revision within short follow-up, serious complications and 90-day costs.

Conclusion

RA-TKA improves alignment accuracy but does not demonstrate superior long-term patient reported outcome measures or survivorship. Safety and healthcare-use outcomes were inconsistent. Future comparative studies should use standardised outcomes and timepoints.

P131 Giant Intramuscular Neurofibroma of the Thigh Mimicking Soft Tissue Sarcoma: Multimodality Imaging with Radiologic–Pathologic Correlation

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Introduction

Large intramuscular peripheral nerve sheath tumours can clinically and radiologically mimic aggressive soft tissue sarcomas. Accurate multimodality imaging with radiologic–pathologic correlation is essential to prevent misdiagnosis and guide optimal management, particularly in young patients.

Case & Imaging Findings

A 15-year-old male presented with gradually progressive painless swelling in the posterior right thigh. Clinical examination revealed a large firm mass. CT demonstrated a sizeable posterior thigh soft tissue lesion with subtle periosteal reaction along the femoral shaft without cortical destruction or calcification. MRI showed a well-defined multilobulated intramuscular lesion within the posterior compartment muscles, isointense on T1-weighted images and heterogeneously hyperintense on T2-weighted sequences, with mild heterogeneous post-contrast enhancement. There was no diffusion restriction, surrounding oedema, necrosis or invasion of adjacent structures. Neurovascular bundles were preserved. Imaging features favoured a benign peripheral nerve sheath tumour.

Histopathology

Core biopsy revealed spindle-shaped cells arranged in fascicles with wavy comma-shaped nuclei, inconspicuous mitoses and fibrous collagenous stroma. No necrosis or significant atypia was seen. Immunohistochemistry demonstrated diffuse S-100 positivity, confirming intramuscular neurofibroma.

Discussion

Giant intramuscular neurofibromas are rare and may simulate soft tissue sarcoma or vascular malformations. MRI is key for lesion characterisation, internal architecture and neurovascular relationship, while CT evaluates bone involvement. Imaging–pathologic correlation is vital for accurate diagnosis and management planning.

Conclusion

Multimodality imaging combined with histopathology allows confident differentiation of benign peripheral nerve sheath tumours from malignant soft tissue lesions, preventing unnecessary aggressive treatment and supporting appropriate surgical planning.

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P132 Intramedullary Osteoblastoma of the Femur: A Case Report and Review of Literature

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Introduction

Osteoblastoma is a rare primary bone tumour typically affecting the cortical layers of long bone metaphysis and the posterior spine. They are distinguished histologically by their characteristic networks of osteoid trabeculae and woven bone, usually lining a vascular stroma. This case report details a rare anomaly to the trend: an intramedullary osteoblastoma of the femur.

Case Presentation

A 22-year-old male presented with an eight-month history of right knee pain on a background of a previous distal tibia non-ossifying fibroma. He underwent cross-sectional imaging and a biopsy was obtained confirming a lesion in the distal femoral condyle. MRI was carried out to further characterise the lesion, delineating the lesion itself as having multiple internal fluid levels and septations with a sclerotic rim and associated marrow oedema, cortical sclerosis, and periosteal soft tissue oedema and histology confirmed osteoblastoma

Conclusion

This case study shows that whilst it is a rare presentation, osteoblastoma of long bones can affect the interim and diary layers. This highlights the need to include it as a potential differential diagnosis, as well as necessitating and highlighting the importance of histology confirmation of bony lesions.

P133 Lipoma vs atypical lipomatous tumour: key differences and diagnostic difficulties

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Background

Soft tissue (ST) masses are commonly encountered in clinical practice and most of these lesions are benign. Ultrasound (USS) is widely accepted to be an excellent first-line test in the initial assessment of ST masses due to its relative low cost, wide accessibility, non-invasive imaging and high spatial resolution. Most adipocytic tumours are either lipomas or atypical lipomatous tumours (ALT), accounting for 40-45% of all adipose tissue tumours. At University Hospitals Leicester(UHL)/ East Midlands sarcoma service (EMSS) bland lipomas are referred to the sarcoma service inappropriately due to a lack of understanding of benign v's suspicious features. We explore the clinical and USS features to better inform referrers and aid management for patients.

Method

Review of images and confirmed cases of ALT at UHL/EMSS was performed to establish key imaging features of histologically confirmed ALT's v's proven benign lesions.

Results

The most reliable imaging features on ultrasound for atypical features include deep tumours, large lesions, thick septations, irregular borders and heterogenous echotexture.

Conclusion

A good understanding of the features of a benign lipoma as opposed to atypical features of an ALT is essential for accurate and safe onward management as treatments differ. Education will enable appropriate referral to the sarcoma service leading to better patient outcomes.

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P134 Metal-Artifact-Reduction MRI for Diagnosing Periprosthetic Joint Infection: A Systematic Review and Meta-Analysis

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Background

Periprosthetic joint infection (PJI) remains one of the most serious complications following arthroplasty, associated with significant morbidity, need for reoperation, and economic burden. Distinguishing PJI from aseptic loosening or mechanical failure is clinically challenging due to overlapping symptoms and the limitations of current diagnostic modalities. Metal susceptibility artefacts have historically hindered magnetic resonance imaging (MRI) in the evaluation of prosthetic joints. However, advances in metal-artifact-reduction sequences (MARS) now allow for improved diagnostic quality imaging in the periprosthetic region. Early studies suggest the diagnostic efficacy of MARS, including subfeatures, yet no formal synthesis of available data exists.

Methods

A systematic review and meta-analysis were conducted following PRISMA-DTA and PRISMA 2020 guidelines. Comprehensive searches were conducted in PubMed, Embase, Scopus, and Web of Science, from 2005 onwards, without language restriction.

Results

A total of 11 studies were included in this meta-analysis evaluating MAR-MRI for diagnosing periprosthetic joint infection (PJI). Pooled performance demonstrated high diagnostic accuracy with sensitivity 0.88 (95% CI: 0.72–0.95), specificity 0.95 (95% CI: 0.80–0.99), and AUC 0.94. Subgroup analysis showed soft tissue changes had the best diagnostic performance (sensitivity 0.82, specificity 0.91), followed by synovitis and effusion, while bone changes were less accurate. Overall, MAR-MRI demonstrates excellent utility in diagnosing PJI.

Conclusion

MARS-MRI demonstrates high diagnostic accuracy for periprosthetic joint infection (sensitivity 0.88, specificity 0.95, AUC 0.94), particularly with soft tissue changes. It aids antimicrobial stewardship by reducing unnecessary interventions. Further large, multi-centre prospective studies are needed to strengthen evidence and validate clinical utility.

P135 Methotrexate Osteopathy: An Under-recognised Cause of Multifocal Stress Fractures on MRI

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Background

There is increasing understanding of methotrexate related stress fractures (MTXO). The following should be fulfilled for diagnosis. (1) prolonged methotrexate use, (2) typical appearance of incomplete fracture with band-like fracture lines along the growth plate, (3) anatomical location, including metaphysis of distal or proximal tibia, distal femur, calcaneus and talus and (4) low impact fractures. Common fracture sites are: distal tibia (70%), calcaneus (70%), proximal tibia (36%), talus (33%) and distal femur (21%).

Purpose

To describe the characteristic MRI appearances, anatomical distribution, and diagnostic pitfalls of MTXO, and to highlight the importance of MRI in early recognition.

Materials and Methods

Retrospective case series: 7 patients (60–61 years) receiving long-term methotrexate for inflammatory Arthritis. All presented with persistent lower limb pain initially attributed to inflammatory arthritis flares. MRI was performed. None of the patients were receiving glucocorticoids or had known osteoporosis.

Results

MRI demonstrated characteristic incomplete stress fractures with band-like, transverse low-signal fracture lines and surrounding bone marrow oedema. Fractures were multifocal and predominantly involved the distal tibia, proximal tibia, calcaneus, talus, and distal femur, consistent with reported MTXO distribution. Plain radiographs were either normal or non-diagnostic. Delay to diagnosis ranged from 19 to 24 months. Methotrexate cessation resulted in clinical improvement in all cases.

Conclusion

MTXO should be considered in patients on long-term methotrexate presenting with unexplained lower limb pain. MRI is the imaging modality of choice, as radiographs may be normal. Early recognition by radiologists can prevent misdiagnosis. Cessation of methotrexate remains the most effective treatment.

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P136 Quantitative Periprosthetic SPECT/CT Uptake 2 to 10 years Post-TKA in Asymptomatic patients: The Happy Knee Study

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Purpose

SPECT/CT is useful for evaluating painful knee arthroplasty [1-5]. However, the natural history (distribution and time course) of periprosthetic SPECT/CT uptake in asymptomatic total knee arthroplasty (TKA) remains poorly defined. The aim of this work is to quantitatively assess the association between years since surgery and periprosthetic SPECT/CT uptake in asymptomatic TKA, as part of the “Happy Knee Study”.

Methods

Cross-sectional analysis of asymptomatic post-TKA knees (n≈45). Uptake was measured as the maximum value in 21 predefined ROIs on a standardized knee map [6]. To account for inter-patient uptake variability, all ROI values were expressed as uptake ratios normalized to a background reference ROI in the femoral shaft. For each ROI we ran simple linear regression and one-way ANOVA.

Results

Across all 21 ROIs, linear trends were weak ($R^2 \leq .083$) and all 95% CIs for the slope (B) included 0; thus, no regression slope reached $p < .05$. One-way ANOVA across the four time-bins (2–4, 5–7, 8–10, >10 years) showed no significant mean differences for any ROI.

Conclusion

In asymptomatic TKA, regional SPECT/CT maximum uptake appears generally stable from 2 to >10 years after surgery. Time since surgery alone explains very little of the variability ($\leq \sim 8\%$ per ROI). These results provide a practical baseline for interpreting postoperative scans.

Limitations

Cross-sectional design; modest single-centre sample; focus on maximum uptake only.

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P137 Soft Tissue Signs on Emergency Radiographs – A Pictorial Review

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Background

There are a number of soft tissue signs such as elbow fat pads and lipohaemarthrosis in the knee and shoulder that are fairly specific for a fracture. Other soft tissue signs are less specific such as the pronator quadratus sign. Patella and quadriceps tendon ruptures can be seen on many radiographs but may be unappreciated clinically. Gas in the soft tissues can be a clue to pneumothorax or pneumomediastinum. It can also be a sign of infection. Hydroxyapatite crystals can cause pain and can be seen on radiographs

Purpose

It is important that reporting Radiographers, ED Radiographers, Radiologists and emergency department clinicians are aware of the importance of soft tissue abnormalities. These can be clues to a fracture or infection

Summary of Content

Examples are provided of soft tissue signs such as the common appearances of fat pads and lipo-haemarthrosis but also other lesser known soft tissue signs such as tendon rupture. The relative value of these are discussed. Gas and calcification in the soft tissues are also illustrated.

1. Zammit-Maempel, et al(1988) The value of soft tissue signs in wrist trauma . Clin Rad Vol 39, 664-668

P138 Subjective and Objective Evaluation of a Software-Based Scatter Correction Algorithm Applied to Hip Radiographs

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Background

Hip radiographs are technically challenging examinations influenced by patient body habitus and high levels of scatter radiation, which degrade image contrast and diagnostic quality[1]. While physical anti-scatter grids improve contrast, they increase patient radiation dose and present practical challenges in trauma and mobile imaging[2]. Software-based scatter correction offers a potential alternative, but evidence remains limited.

Aim

To evaluate the impact of a software-based scatter correction algorithm on image quality in hip radiographs using objective metrics and subjective observer assessment.

Methods

Hip radiographs acquired without a physical grid were retrospectively post-processed with and without scatter correction using IBEX TrueView[3]. Objective image quality analysis was performed on 63 images, assessing contrast, signal-to-noise ratio (SNR), and contrast-to-noise ratio (CNR) across regions of interest, stratified by body mass index (BMI) and bone density. Subjective assessment involved seven radiographers who evaluated 24 images for diagnostic acceptability, overall image quality, anatomical visibility, and windowing behaviour under controlled viewing conditions.

Results

Scatter-corrected images demonstrated higher contrast and CNR across all BMI and bone density categories compared. Subjectively, scatter-corrected images were more frequently rated as diagnostically acceptable, achieved higher image quality scores, and showed improved anatomical visibility. Scatter-corrected images also required less windowing, suggesting improved baseline image presentation.

Conclusion

Software-based scatter correction improves contrast and perceived diagnostic quality of hip radiographs despite some increased visible noise. Reduced reliance on windowing indicates potential benefits for reporting efficiency. Findings support further evaluation of scatter correction as an alternative to physical grids in trauma and mobile musculoskeletal radiography.

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3. Ibex Innovations Ltd. 2022. "IBEX SC – Multi-modality physics-based gridless scatter correction" Ibex Innovations Ltd; 2022. Available from: <https://ibexinnovations.co.uk/2022/07/19/ibex-sc-multi-modality-physics-based-gridless-scatter-correction/>.

P139 Ultrasound-Guided Dry Needling for Musculoskeletal Disorders: Efficacy, Safety, and Functional Outcomes - A Systematic Review

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Background

Musculoskeletal disorders (MSDs) are a leading cause of pain and disability worldwide (Walker-Bone et al., 2022). Dry needling (DN) is commonly used to manage MSDs by reducing pain and improving function through targeted needle insertion. Ultrasound-guided dry needling (UGDN) enhances DN by enabling real-time visualisation of anatomical structures, improving precision and reducing the risk of injury to surrounding tissues. Currently, no specific clinical guidelines exist for the use of UGDN. This review aimed to examine the existing evidence on the safety, feasibility, and functional outcomes of UGDN in the treatment of musculoskeletal disorders.

Methods

A comprehensive literature search was conducted across five electronic databases using Medical Subject Headings (MeSH) and relevant keywords, including “ultrasound-guided dry needling” and “ultrasound-guided fenestration,” combined with terms related to musculoskeletal disorders. All study designs were eligible for inclusion. Methodological quality was assessed using National Institutes of Health (NIH, 2021) quality assessment tools. A mixed-methods approach was used for data synthesis.

Results

A total of 434 articles were identified. Following a two-stage screening process, nine studies met the inclusion criteria, comprising seven randomised controlled trials, one retrospective cohort study, and one case series. Seven studies were comparative. Across studies, UGDN was associated with low rates of reported adverse effects. Functional outcomes varied, with evidence of short-term improvements and outcomes comparable to surgical intervention and platelet-rich plasma (PRP) therapy in selected conditions.

Conclusion

UGDN appears to be a safe and effective intervention for the management of musculoskeletal disorders. However, evidence remains limited by heterogeneity.

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P140 Imaging of complex ankle fractures: A case series comparing musculoskeletal MSCT, 3D CBCT and dual energy CBCT

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Background

Computed Tomography (CT) is commonly utilised for musculoskeletal (MSK) imaging particularly in the context of major trauma and the characterisation of complex fractures.² Multislice CT (MSCT) is widely available, but capacity conflicts with other acute pathways can result in delays for imaging in the context of pre-surgical planning. One area of impact is complex and unstable ankle fractures where guidance recommends fixation within 24 hours of presentation.¹ There is evidence of the diagnostic value of extremity 3D Cone Beam Computed Tomography (CBCT) in MSK pathways,^{3,4} but it is not widely adopted in the NHS and new dual energy (DE) CBCT requires evaluation in practice.

Purpose

The aim of this pictorial review is to illustrate the real-world use of MSCT, 3D CBCT and DE CBCT with a focus on the imaging of complex ankle fractures and the role of CT for guiding clinical decision-making in a UK acute NHS Trust. The case series will compare the technologies and the diagnostic features including image reconstructions, image quality and radiation dose.

Summary of content

This case series compares MSCT and CBCT imaging for complex ankle fracture mapping with the aim of highlighting new advancements. Extremity 3D CBCT offers equivalent high-resolution bone and orthopaedic hardware visualisation to MSCT for assessment of fracture configuration,³ but clinical utility and clinician engagement may be limited by the ability to demonstrate associated soft tissue injuries. There are opportunities to explore the inclusion of DE CBCT in precision diagnosis and assessment currently limited to CT availability.

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3. Posadzy, M., Desimpel, J., Vanboenacker, F. (2018) Cone Beam CT of the musculoskeletal system: clinical applications. *Insights Imaging*, 9:25-45.

4. Snaith, B., Harris, M., Hughes, J., Spencer, N., Shinkins, B., Tachibano, A., Bessant, G., et al. (2022) Evaluating the potential for cone beam CT to improve the suspected scaphoid fracture pathway: InSPECTED: A single-centre feasibility study. *J Med Imaging Radiat Sci*, 53(1): 35-40.

P141 Luxatio erecta humeri: a trust review

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Background

Inferior dislocation at the glenohumeral joint, also known as 'luxatio erecta' is a rare dislocation accounting for less than 0.5% of shoulder dislocations¹. Mechanism of injury occurs by hyperabduction of the arm, commonly with an accompanying axial load². Patients present with the affected arm in fixed abduction with their hand overhead³. Associated bony, soft tissue and neurological injuries are common⁴.

Method

A local trust radiology system was searched for cases of luxatio erecta in the last five years. Patients imaging and electronic records were reviewed.

Results

6 patients with luxatio erecta were confirmed. Median age was 39 years. Mechanisms of injury was either fall (n=4) or RTC (n=2). 4 patients had associated injuries including fractures or soft tissue injuries. No neurological injuries were observed. 4 patients underwent additional multiplanar imaging. 4 dislocations were reduced on the first attempt in the emergency department. 2 had fluoroscopy assistance in theatre. These patients had associated complex fractures. Only one patient needed ongoing physiotherapy. All other patients were discharged after orthopaedic follow-up.

Conclusion

Despite the rarity of these cases, clinicians are able to treat these dislocations effectively. Patients can have good clinical outcomes despite complex cases.

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P142 Inter-operator agreement in the application of the Hamada (Walch modified) and Acromiohumeral Center Edge Angle (ACEA) classifications for Rotator Cuff Tear Arthropathy (RCTA) on shoulder radiographs; a comparison between reporting radiographers and a radiologist

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Introduction

Classification systems are routinely used to quantify and measure the progression of Rotator Cuff Tear Arthropathy (RCTA) on Anterior-Posterior (AP) Shoulder Radiographs with various levels of evidence within literature. Reporting radiographers (RR) are increasingly managing the X-ray reporting workload nationally, but no current studies examine the inter-operator agreement of reporting radiographers compared to a radiologist when using classification systems to assess X-rays for RCTA.

Methods

A retrospective comparative study examining the inter-operator agreement of seven reporting radiographers, with a senior musculoskeletal specialist radiologist when using two common classification systems for assessing RCTA across 50 radiographs.

Results

When compared to the radiologist, the radiographers ACEA Interclass coefficients (ICC) ranged from 0.56-0.86, with a standard error of measurement (SEM) range of 3.56-6.35, and minimal detectable change (MDC) at a 95% confidence interval range of 10.08-17.95. When compared to the radiologist the radiographers Hamada classifications had a percentage of agreement range of 63%-83%, Cohen's weighted kappa range of 3.56-6.35, and a standard error range of 0.09-0.12.

Conclusion

ACEA data shows stronger inter operator agreement than Hamada classification, however patients with marked shoulder changes can skew results.

Implications for practice

ACEA measurements by reporting radiographers can be routinely relied on to guide clinical decision making on patients presenting with symptoms suggestive of RCTA. These could be incorporated into clinical reports to guide orthopaedic treatments.

P143 Optimising knee MRI workflow using AI-based deep learning reconstruction at 1.5T: a best practice approach

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Background

High-quality knee MRI requires excellent spatial resolution and tissue contrast to accurately assess the menisci, ligaments, articular cartilage, and bone marrow. Conventional knee MRI protocols can be time-consuming, increasing the risk of patient discomfort, motion artefacts, and reduced scanner throughput. AI-based deep learning reconstruction techniques have been introduced to enhance image quality while reducing acquisition time. This best practice presentation describes the practical implementation of deep learning reconstruction in routine 1.5T knee MRI and its impact on image quality and workflow efficiency.

Purpose

This presentation shares best practice experience in optimising a routine knee MRI protocol using AI-based deep learning reconstruction. Learning objectives include demonstrating protocol optimisation, evaluating subjective image quality, and highlighting workflow efficiencies achievable without compromising diagnostic confidence. The content is intended to support radiographers and radiologists seeking to improve musculoskeletal MRI efficiency in clinical practice.

Summary of Content

A best practice knee MRI protocol incorporating AI-based deep learning reconstruction is presented and compared with a conventional protocol used in routine clinical practice. The standard sequence set includes proton density (PD) fat-suppressed axial, PD fat-suppressed sagittal, PD sagittal, T1-weighted sagittal, and PD fat-suppressed coronal imaging. Subjective image quality is assessed using a structured 5-point Likert scale evaluating overall image quality, noise, edge sharpness, artefacts, fat suppression uniformity, and diagnostic confidence, while reducing total scan time from approximately 25 minutes to 15 minutes. Implementation of deep learning reconstruction consistently demonstrated excellent image quality while reducing total examination time.

P144 Corticosteroid-induced myopathy: An intriguing imaging and clinical diagnosis

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Background

Corticosteroid-induced myopathy is an iatrogenic, toxic non-inflammatory muscle disease associated with prolonged glucocorticoid use. It is estimated that drug-induced myopathy has an incidence of 50% to 60% among patients receiving corticosteroids. Elderly individuals, patients with oncologic diseases, spinal cord injury, prior muscle disease, chronic respiratory illness, poor nutritional status, and a sedentary lifestyle as well as patients on mechanical ventilation receiving high-dose steroids are at increased risk for developing myopathy. Steroid myopathy has an indolent presentation with muscle weakness and atrophy without associated pain. Diagnosis is often delayed because symptoms are erroneously attributed to the patient's underlying disease.

Purpose of Poster

We describe the clinical and MR imaging findings of steroid myopathy in a 74-year-old woman chronically treated with corticosteroids for rheumatic polymyalgia. She presented with generalized muscle weakness involving the proximal extremity musculature in a symmetric distribution, with the hip girdle affected more than the shoulders. She was unable to rise from bed. Deep ulcerated lesions were present in her forearm, the hand and tibia. Laboratory findings were quite normal. On MR images, there was diffuse edema in musculature of the trunk, the pelvis and thighs, with some perifascial fluid. Atrophy of the psoas muscle was noted. Symptoms improved within 5 weeks of tapering corticosteroids, and physical therapy was initiated.

Summary of Content

Diagnosis of corticosteroid-induced myopathy requires a high degree of suspicion and is confirmed with clinical improvement upon steroid cessation. Radiologists need to recognize the imaging findings of reversible steroid-myopathy in the appropriate patient populations.

1. Caetano AP, Alves P: Advanced MRI patterns of muscle disease in inherited and acquired myopathies: what the radiologist should know. *Semin Musculoskelet Radiol.* 2019, 23:e82-e106

2. Theodorou DJ, Theodorou SJ, Kakitsubata Y: Skeletal muscle disease: patterns of MRI appearances. *Br J Radiol* 2012, 85:e1298-308

3. Ortolan P, Zanato R, Coran A, Beltrame V, Stramare R: Role of radiologic imaging in genetic and acquired neuromuscular disorders. *Eur J Transl Myol.* 2015, 25:5014. 10.4081

4. Smitaman E, Flores DV, Mejía Gómez C, Pathria MN: MR imaging of atraumatic muscle disorders. *Radiographics* 2018, 38:500-22.

P145 Managing potential Cauda Equina Syndrome patients in a GIRFT community pathway

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Introduction

To provide a safe and streamlined pathway for patients presenting in the community setting who present with symptoms suggestive of Cauda Equina Syndrome (CES), in line with Getting it Right First Time (GIRFT, 2023) guidelines, reducing unnecessary Emergency Department attendances.

Methods

Potential patients identified at MSK triage with symptoms of over 2 weeks, suggestive of stable CES, as per GIRFT guidelines, are booked into an embargoed appointment in the community and assessed by an expert clinician; clinical decision making is supported by electronic patient record template (EPR). Same day MRI scan and reporting determines the pathway of care for the patient.

Results

To date 290 patients have been seen on the Community CES pathway within on average 4.3 calendar days; 105 had suspected CES, of which 10% required urgent neurosurgical input. The average community CES pathway timeline is appointment>MRI is 90 minutes, scan>Report time= 79 minutes (current average wait for patients with suspected CES in local ED is 7 hours 37 minutes) The pathway has also had a positive impact on ED MRI referrals; since the inception of the community CES pathway there has been a 14% reduction in ED spinal MRI referrals.

Conclusion

The community CES pathway has significantly improved patient care and patient experience; demonstrating that if a robust and safe pathway exists, developed in a collaborative, multi-disciplinary forum, management of CES can be streamlined and efficient for this specific patient population. It has also shown to reduce workload on an over stretched Emergency Department.

Getting it Right First Time (GIRFT) (2023) Spinal Surgery: National Suspected Cauda Equina Syndrome (CES) Pathway.

P146 Plaque-like Calcinosis Cutis and Interferon: A Clinical and Imaging Association

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Background

Calcinosis cutis denotes the deposition of calcium salts within cutaneous and/or subcutaneous soft tissue. Iatrogenic calcification of soft tissue has been a well-documented drug reaction to injectable interferon formulations. Interferon beta 1-alpha (IFN-β-1a) in particular, a first-line immunomodulatory drug for multiple sclerosis (MS), has been related to various cutaneous adverse reactions including calcified nodules, dermal vasculitis or necrosis, and lipoatrophy. Plaque-like subcutaneous calcifications due to the injection of interferon preparations are uncommon and can become symptomatic challenging continuation of treatment. The pathogenesis of cutaneous calcifications in patients treated with IFN-β-1a may link to an autoimmune response inducing vascular thrombosis, perivascular inflammation, and dermal ulceration and necrosis.

Purpose of Poster

We present plaque-like calcinosis cutis in a 46-year old MS patient with a slowly growing, palpable mass on the abdomen causing pruritus. He had previously received long-term treatment with subcutaneous IFN-β-1a for relapsing-remitting disease. Abdominal radiograph demonstrated bilateral irregular, radiopaque lesions projecting over the lower ribs. Ultrasonography showed superficial echogenic regions obscuring visualization of the bowel. On CT, large densely calcified mass lesions were seen at the abdominal wall overlying the atrophied abdominal muscles. Discontinuation of treatment with subcutaneous injections of interferon, surgical removal of massive cutaneous calcifications, and topical treatment with corticosteroids were pursued. Intramuscular interferon beta at a lower dose was prescribed instead.

Summary of Content

Clinicians need to be aware of the cutaneous adverse effects of injectable interferon formulations that can hamper quality of life in MS patients, and opt to modify treatment as appropriate.

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P147 Portable, high resolution digital tomosynthesis: Patient acceptability from the "Athritis3D" first in human trial

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Background

Planar x-rays provide two-dimensional images of three-dimensional (3D) structures and current cross-sectional imaging options require a high dose of ionising radiation and / or are high cost. A new generation of digital tomosynthesis, point of care device (Adaptix Ortho350) offers the opportunity for high resolution 3D imaging. The aim of this study was explore patient acceptability of imaging using the Ortho350 system during the first in human trial.

Methods

The Arthritis3D trial (ISRCTN95817502) aims to recruit 30 participants with inflammatory arthritis to have 3D digital tomosynthesis in addition to their planar x-rays. A patient acceptability questionnaire is also completed. Acceptability questionnaires from the first 15 participants were analysed using descriptive statistics.

Results

100% of the participants reported feeling no stress or anxiety during the scan. 73% rated the scan as comfortable or very comfortable. The mean visual analogue score for pain during the scan was 0.2 (± 0.41). 100% reported feeling in control during the scan and 87% were not concerned about the radiation dose. 100% felt well supported during the scan, while 100% found the scan time acceptable and 100% would have the scan again. 20% (all men) indicated they would value an elbow support.

Conclusion

The Adaptix Ortho350 scanner performed well on all metrics for patient acceptability demonstrating technology which is fit for purpose. The need for an elbow support was only mentioned by men, possibly due to larger body stature and longer arms; a prototype elbow support has been developed.

P148 Accuracy of Head & Neck Radiotherapy using DSPS Prominent Shells with SGRT

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Background

Current standard of care implies immobilising patients in a full H&N shell, “to minimise movement” therefore, ensuring accuracy of set-up and treatment delivery. Technology has advanced with person-centred care at the forefront. Findings indicate that full H&N shells are no longer fit for purpose with better alternatives available. This study aims to determine if DSPS prominent shells improve set-up accuracy and dose delivery of H&N radiotherapy patients using SGRT.

Method

Twenty oropharynx patients receiving 30# of radiotherapy were analysed retrospectively. 10 were immobilised using the DSPS head only shell and 10 were immobilised using the DSPS prominent shell. All were set-up using SGRT and verified daily by online CBCT. Imaging shifts were recorded from weekly fractions in 6DoF and CBCT dose calculations were performed to evaluate dose delivery through analysis of the dose difference between CT plan and CBCT clinical goals for PTV65, PTV54 and Cord PRV.

Results

In set-up, the prominent shell reduced the range of movement in all 6DoFs. The RMSQ showed the prominent shell improved accuracy in 5 of the 6DoFs compared to the DSPS Head only shell. A statistically significant pitch value was observed ($p=0.00001$). Dose differences were smaller in the prominent shell for PTV65 and PTV54 clinical goals however larger in the cord PRV goal.

Conclusion

DSPS prominent shells have improved accuracy in set-up reducing the dose differences within the PTV clinical goals. Further work should be considered to investigate the significance of pitch and any relevance of differences seen in Cord PRV dose.

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P149 Can an individualised region of interest (ROI) in rigid registration for rectal cancer improve multi-modality image registration?

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Background

MRI provides optimal soft-tissue visualisation for rectal cancer, and CT-MRI registration improves target delineation accuracy. However, registration remains challenging due to volumetric and positional changes.

Inaccurate registration may result in over-or underestimation of the gross tumour volume (GTV). Region-of-interest selection (ROI) is critical to registration accuracy and clinical acceptability (CA), yet published guidance is limited.

Aim

To quantify CA across multiple ROI-registrations and compare differences between them.

Methods

Patients treated with radiotherapy for rectal cancer were included. All underwent CT planning and MRI-simulator 1.5T using 3D-T2 SPACE, 2D-T2 TSE axial sequences, supine with bladder preparation. CT-MRI were performed initially using the extended scan range, followed by 7 user-defined ROI's (a-g) (table 1). Registrations were assessed in all planes qualitatively as per guidelines and scored for CA [1]. Anatomical boundaries of soft tissue/bone were assessed using clinical target volume (CTV) and GTV using 5-point Likert:(1)very good, (2)good, (3)acceptable, (4)poor and (5)very poor. ROI-g defined as the gold standard. Transformation matrix (TM) values for ROI (a-g) were extracted. Translational and rotational differences were derived by decomposing the rigid-body TM formula calculated relative to ROI-g for (a-g). Mean, SD and 95%CI were recorded.

Results

10 patients (70 registrations) were included. Greater variation in CA was observed for GTV than CTV (figure 1). TM data is reported in table 1, and shows large variation in superior/inferior direction.

Conclusion

Using different ROI's, high variation was observed with low CA for CTV and GTV, highlighting the importance of individualised ROI for accurate target delineation.

Table 1. ROI showing anatomy included for each of the registrations ROI_a-g and the transformation matrix values from the gold standard ROI_g

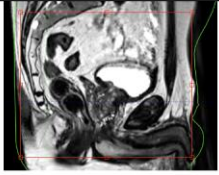
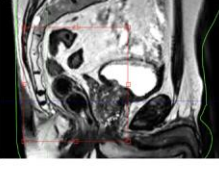
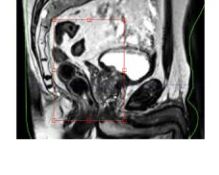
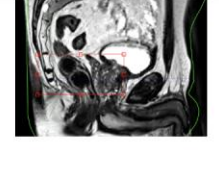
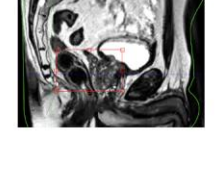
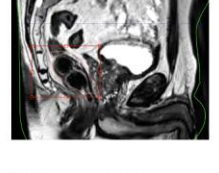
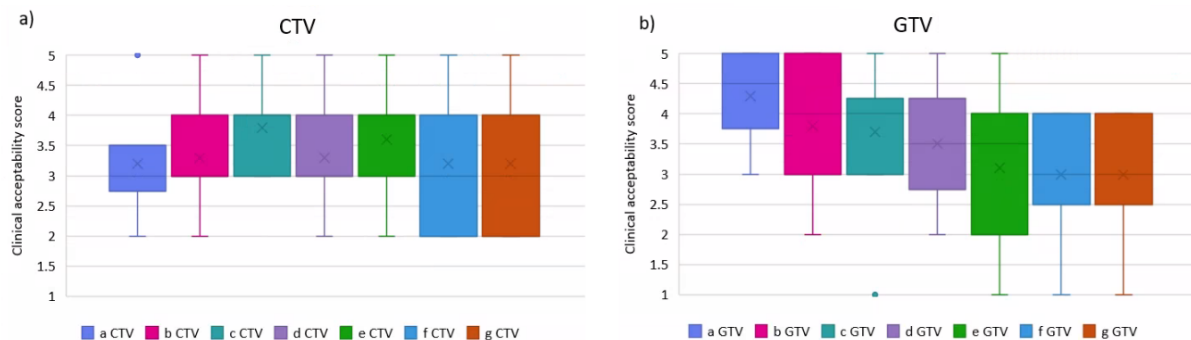
ROI selection	ROI - red box represents the anatomy within the registration	Description of anatomy included in ROI	Transformation matrix calculated from the gold standard ROI-g (mm, degrees)			
				mean	SD	95% CI
ROI_a		ROI whole pelvis bony anatomy	x	-1.49	1.59	-2.63 to -0.36
			y	-0.06	2.09	-1.55 to 1.44
			z	-2.59	6.19	-7.01 to 1.84
			ROLL	0.52	1.82	-0.79 to 1.82
			PITCH	-0.02	0.57	-0.43 to 0.39
			YAW	-0.41	0.62	-0.85 to 0.03
ROI_b		ROI was 12cm length (from retro-sigmoid junction) and width included coccyx but not pubic synthesis and was half width of femoral heads included		mean	SD	95% CI
			x	-0.47	1.40	-1.47 to 0.53
			y	0.22	1.94	-1.16 to 1.61
			z	-1.56	5.86	-5.75 to 2.63
			ROLL	0.3	1.88	-1.05 to 1.64
			PITCH	0.08	0.48	-0.27 to 0.42
			YAW	-0.11	0.56	-0.51 to 0.30
ROI_c		ROI was 12cm length (from retro-sigmoid junction) which did not include bony anatomy		mean	SD	95% CI
			x	-0.64	1.39	-1.71 to 0.43
			y	-0.36	0.91	-1.06 to 0.35
			z	-0.82	4.85	-4.54 to 2.91
			ROLL	0.05	1.64	-1.21 to 1.31
			PITCH	0.26	0.41	-0.06 to 0.57
			YAW	-0.17	0.57	-0.61 to 0.27
ROI_d		ROI was length of the tumour included coccyx but not pubic synthesis and half width of femoral heads included		mean	SD	95% CI
			x	-0.20	1.45	-1.24 to 0.83
			y	0.50	2.28	-1.13 to 2.14
			z	-3.42	6.69	-8.21 to 1.37
			ROLL	0.98	2.13	-0.54 to 2.50
			PITCH	0.01	0.51	-0.35 to 0.38
			YAW	-0.04	0.57	-0.45 to 0.38
ROI_e		ROI was length of the tumour but did not include bony anatomy		mean	SD	95% CI
			x	-0.90	1.61	-2.05 to 0.25
			y	0.10	1.55	-1.00 to 1.21
			z	0.79	5.43	-3.09 to 4.68
			ROLL	-0.28	1.71	-1.50 to 0.94
			PITCH	-0.18	0.32	-0.41 to 0.05
			YAW	-0.21	0.77	-0.76 to 0.34
ROI_f		ROI was the length of the GTV and width included coccyx but not pubic synthesis and half width of femoral heads included		mean	SD	95% CI
			x	-0.26	1.58	-1.39 to 0.87
			y	0.53	2.11	-0.98 to 2.04
			z	-3.17	6.42	-7.76 to 1.43
			ROLL	0.91	2.04	-0.54 to 2.37
			PITCH	-0.11	0.46	-0.44 to 0.22
			YAW	-0.06	0.66	-0.54 to 0.42
ROI_g		ROI was the length				

Figure 1. Box and whisker plot representing clinical acceptability scores for CTV (a) and GTV (b) for all registrations, the cross represents the mean and line the median (1) very good alignment – no adjustments required, (2) good, (3) acceptable, (4) poor and (5) very poor



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P150 Deep Learning–Accelerated MRI for Radiotherapy: A Systematic Review of Image Quality and Delineation Performance

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Background

MRI is increasingly used in radiotherapy (RT) planning to enhance GTV and OAR delineation due to its superior soft-tissue. However, MR-simulation requires long acquisitions and specialised setups, challenging workflow efficiency and patient tolerance. Deep learning artificial intelligence (DL-AI) acceleration models have emerged and may reduce scan times while preserving image quality within diagnostic centres, yet their impact on RT-specific image quality metrics and tumour delineation has not been evaluated.

Methods

Systematic review was conducted following PRISMA principles. PubMed, Scopus, ScienceDirect, and CINAHL were searched for studies (January 2020 onward) evaluating DL-AI–accelerated volumetric MRI. Eligible studies reported quantitative or qualitative image-quality outcomes relevant to radiotherapy. Screening, data extraction and the quality assessment were performed using predefined PICOS criteria. Outcomes included objective metrics (SNR, CNR) and subjective assessments (sharpness, artefacts, tissue/tumour delineation).

Results

Fourteen studies were identified. DL-AI acceleration achieved 40–60% scan-time reduction while maintaining or improving diagnostic confidence. Most studies reported preserved or increased SNR/CNR, with image degradation only at high acceleration factors. Subjective assessments in 11/14 studies rated DL-AI–accelerated images as equivalent or superior, citing improved tissue delineation and sharpness, fine-structure conspicuity, and preserved tumour volumes and geometric accuracy. No studies focused on tumour detection. Isolated reports of artefacts (peripheral Moiré fringes, incomplete fat suppression) highlighted the need for site and sequence-specific validation.

Conclusion

DL-AI acceleration shows promise for faster MR-RT workflows with maintained delineation quality. Clinical teams should treat it as an efficiency gain that still requires local geometric and artefact validation before routine use.

P151 Factors affecting recruitment to PRIORITI study - Patient ranked preference for information on radiotherapy, including treatment and trials

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Background

Multiple factors influence the impact of radiotherapy (RT) information on patients. These include patient characteristics, format, timing, preparedness, information providers, motivators and barriers. PRIORITI is a patient focussed study on patient ranked preferences for information on RT, including treatment and trials; using the Nominal Group Technique (NGT). This ethically approved study (REC (25/YH/0129), opened in October 2025. Here we present interim findings on factors affecting recruitment.

Method

Patients receiving radical RT, aged ≥ 18 and English-speaking, were eligible, with a proposed target sample ≥ 100 . Screening, recruitment, distance travelled, Scottish Index of Multiple Deprivation (SIMD), non-participation reasons and attendance from 1st October 2025 – 6th January 2026 were recorded and evaluated. Statistical analysis was conducted in SPSS v29. Binary logistic regression and Pearson Chi-Square tests determined whether distance and SIMD affected consent and attendance ($p \leq 0.05$).

Results

Of 322 patients screened, 49 consented and 33 attended group sessions. Tables 1-2 display consented patient characteristics and non-participation reasons. Mean distance travelled was 19.6km for attendees ($n=33$, SD18) and 22.8km for non-attendees ($n=232$, SD25). Distance travelled and age did not significantly affect attendance ($p=0.44$, $p=0.22$) or consent ($p=0.95$, $p=0.10$). Females may be less likely to attend than males (OR=0.47, 95% CI: 0.22–1.01, $p=0.058$). SIMD was not predictive of consent ($p=0.29$) or attendance ($p=0.28$); however, a significant linear relationship was observed, with the least deprived more likely to consent ($p=0.028$).

Conclusion

Recruitment is on track with half the target sample consented. Distance did not significantly influence consent or group meeting attendance.

Table 1: Characteristics of consented patients

Patient Characteristics		
Age		
Mean	63	
Median	64	
Min	43	
Max	78	
Sex	n=49	%
Female	20	40.8
Male	29	59.2
RT Treatment Site	n=49	%
Prostate	18	37
Breast	14	29
Head and Neck	7	14
Gyn	4	8
Lung	3	6
Lymphoma	1	2
Skin	1	2
Lower GI	1	2

Table 2: Reasons for non-participation

Reasons for non-participation	Patients reasons - n	% (n=242)
Not interested	43	17.8
Date/time unsuitable	9	3.7
Preferred date or time	1	0.4
Venue/location unsuitable	24	9.9
Health issues	21	8.7
Transport issues	15	6.2
Unable to contact	28	11.6
Carer role	6	2.5

Work commitments	7	2.9
Not appropriate	56	23.1
No PIS	6	2.5
Language barrier	1	0.4
Anxiety	8	3.3
Treatment intent exempt (researcher deemed)	16	6.6
Not read PIS	1	0.4
<i>Total reasons given</i>	242	
<i>Patients who provided >1 reasons for non-participation</i>	30 (29 provided 2 and 1 provided 3)	
Patients screened	322	
Patients declined	211	
Patients consented	49	
Patients attended	33	
Patients withdrawn	6 (1 consented)	
Patients screened still to be approached	57	

P152 Improving patient experience in prostate radiotherapy: A pilot evaluation of a post-void bladder protocol

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Background

Consistent bladder filling protocols are employed when delivering radiotherapy to the prostate to support reproducible target positioning and accurate dose delivery. A filled bladder can displace small bowel superiorly, reducing its volume within the high dose region and thereby lowering gastrointestinal (GI) toxicity. In practice achieving and/or maintaining a consistent bladder fill can prove difficult for patients with day-to-day variability effecting accurate dose delivery and negatively impacting patient experience.

Methods

A single centre pilot study was performed to compare toxicity, organs at risk doses and patient rescan/reset up rates of a bladder filling protocol (comfortably full 150-400ml) to a post-void bladder protocol for the treatment of patients receiving radical radiotherapy to the prostate only.

Results

Increase in clinician reported toxicity was comparable between both groups for genitourinary (GU) and gastrointestinal (GI) toxicity. 8 patients (32%) of the filled bladder cohort required at least one pre-treatment appointment to ensure an adequate bladder volume in comparison to 0% of the post-void cohort. During treatment the filled bladder cohort required an additional 31 set-up attempts. Both cohorts met all mandatory dose constraints for both bowel and bladder. Optimal constraints for bowel were met in 100% of the filled bladder cohort in comparison to 80% for the post-void cohort.

Conclusions

A post-void bladder protocol for the treatment of prostate only radiotherapy demonstrates a practical alternative to standard bladder filling regimes, exhibiting comparable toxicity and the ability to meet dose constraints. A post-void regime can positively impact patient experience and departmental capacity.

P154 Provision of Late Effects Services for Adults Living With and Beyond Cancer in the UK: A National Scoping Exercise

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Introduction

The number of people living with and beyond cancer in the UK continues to grow, now exceeding 3.5 million. Although long-term survival has improved, most survivors experience ongoing or late consequences of treatment that can affect physical health, psychological wellbeing and social functioning.

Methods

A UK-wide scoping exercise was undertaken from February to September 2024. Late effects services were identified through existing national databases and professional networks, supported by promotion via oncology nursing and radiography organisations. A structured survey was used to collect information on tumour sites managed, multidisciplinary involvement, availability of holistic support, staffing capacity measured in whole time equivalent (WTE), and funding arrangements. People with lived experience of late effects informed survey development.

Results

Thirty-six adult late effects services were identified, with the majority located in England. When data from childhood cancer survivorship services were included, a total of 58 services were identified nationally. Services addressing radiotherapy-related late effects were most prevalent (n=14), whereas immunotherapy-specific services were uncommon (n=5). Services were led by therapeutic radiographers (n=20) and nurses (n=16). Provision of holistic care was inconsistent, with lymphoedema management, psychological support and sex and intimacy services most commonly available, while fatigue, menopause, pain and cardio-oncology support were limited. Fourteen services reported initial charitable funding.

Conclusion

Provision of adult late effects services in the UK does not currently match the need. Greater investment, equitable service development and integration of late effects care into standard cancer pathways are required to improve long-term outcomes and quality of life for cancer survivors.



P155 The Development of an MRI Imaging Protocol for Pancreatic Radiotherapy Planning

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Background

Pancreatic cancer is the 10th most common cancer in the UK, and the 5th most common cause of cancer deaths. It has the lowest survival rates of all the most common cancers [1]. Recent advancements in the field of RT have now made it possible to safely and reliably deliver high doses of radiation to the pancreas whilst avoiding surrounding structures [2] This makes the precise planning of RT imperative. There is growing evidence of the benefits of employing MRI imaging in addition to CT[3]. In early 2022 the scanning team were approached by the clinical team to begin the process of optimising and producing an MRI planning protocol for pancreatic cancer.

Methods

A multi-disciplinary, collaborative approach was undertaken. The team engaged with a radiologist and diagnostic colleagues to seek advice on the best sequences to utilise. A healthy volunteer was scanned with the Siemens applications specialist in attendance. The radiographers and physicists in the team worked with the apps specialist to optimise the required sequences and some members of the upper GI team also attended the training to evaluate images.

Results

The first patient was scanned in December 2022. To date 70 scans have been successfully carried out. The team have received excellent feedback from both oncology clinicians and radiologists about the quality and efficacy of the scans produced.

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P157 Variability in Clinical Outcomes Following Radioiodine (I-131) Therapy for Graves' Disease and Multinodular Goitre: a retrospective analysis

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Aims

This study reviewed patients treated with I-131 over a 15-month period to examine differences in dosing between Graves' disease (GD) and multinodular goitre (MNG), and to evaluate the impact of these dosing strategies on clinical outcomes.

Methods

All patients who received I-131 therapy between November 2023 and February 2025 were included (n=235; 170 F). A predetermined dose of 399 MBq I-131 was used for Graves' disease, while 550 MBq I-131 was administered for multinodular or toxic nodular goitre. Clinical outcomes assessed at 15 months or later included normalisation of thyroid function, development of hypothyroidism, and the requirement for additional I-131 treatment.

Results

At 15 months or beyond, 60 patients achieved euthyroidism (38 F), 155 developed hypothyroidism (108 F), and 20 had persistent or recurrent hyperthyroidism (10 F). Graves' disease was the most frequent indication (n=153, 109 F; 71.2%) and was most related with hypothyroidism (n=115) occurring at a mean of 6 months following radioiodine therapy. Euthyroidism was observed in 28 patients, while 10 had persistent hyperthyroidism. Among patients with multinodular goitre (n=82; 61 F; 74.4%), hypothyroidism occurred in 40 patients, euthyroidism was achieved in 32 and 10 had persistent hyperthyroidism.

Conclusion

To conclude, observed rates of hypothyroidism and euthyroidism at 15 months are broadly consistent with international guidelines. Tailored I-131 therapy was efficacious and well endured in both GD and MNG patients during the audit period. These findings also underpin the significance of systematic follow-up arrangements which help to identify early hypothyroidism or suboptimal response.

P158 Introducing test-bolus for liver scans

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This is about sharing practical tools that can make our project work easier, more organised, and ultimately help us deliver better patient care.

What is test bolus?

- Technique to calculate patient specific delays (arterial or portal)
- 20 ml contrast
- Single-slice tracking scan at aorta (diaphragm level)
- CT calculates contrast delay

*Proceed with 'usual' ABC exhale + C scan

Why change?

- Consultant request: fixed delay produces variable results
- Patient specific delays: accounts for patient circulation differences
- Better tumour visualisation: better GTV contouring
- More livers coming to NUH – good time to implement higher quality scans to minimise delays (contouring time, radiology input)

Arterial VS Portal phase:

Arterial (~20–35s)

- Contrast in arteries
- Enhances hypervascular tumours
- Used for HCCs

Portal (~60–70s)

- Contrast in parenchyma + portal vein
- Background liver evenly enhanced = good for whole liver contouring
- Used for Mets

What changes for us?

- + An additional 20ml test bolus at start
- + Single-slice tracking
- + Delay will be calculated by scanner – not fixed as current
- = Full planning CT scan stays the same

Next steps:

- Train core team
- Team leader to identify 5 pilot patients
- Audit & analyse & action
- Training for wider team
- Unlike any other technique – so will need an additional competency sign offs.

P159 Sexual function outcomes in prostate and cervical cancer patients treated with radiotherapy in sub-Saharan Africa: A cross-sectional study

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Radiotherapy is indispensable for the successful treatment of many pelvic malignancies, but it is often associated with significant adverse effects on sexual function. Sexual dysfunction remains an underreported complication among patients, particularly those treated for prostate and cervical cancers in limited-resource settings. This quantitative cross-sectional study aimed to evaluate sexual function outcomes among 144 prostate and 160 cervical cancer patients treated with pelvic radiotherapy at a cancer treatment centre in sub-Saharan Africa. Data were collected using questionnaires based on the Female Sexual Function Index and the International Index of Erectile Function. Data were analyzed using STATA statistical software package (version 17). The mean age of the patients with cervical cancer was 53.5 years (SD 9.6) that of patients with prostate cancer was 67.1 years (SD 7.7). Among female participants, 79.9% had moderate to severe sexual dissatisfaction, 94.4% had poor or no satisfactory orgasm whereas 97.2% had difficulty with lubrication. Only 5.6%, 5.6%, 2.8%, and 20.1% of the female participants achieved sexual desire, orgasm, lubrication, and overall satisfaction respectively. In all, 94.4% and 5.6% of the female participants had a total FSFI score less than 26 and greater than 26 respectively. Majority did not indulge in sexual activity. There was a high prevalence of sexual dysfunction across multiple domains, with cervical cancer patients experiencing diminished desire, poor arousal, lubrication difficulties, and impaired orgasmic function, leading to low relationship satisfaction and avoidance of sexual activity. Similarly, prostate cancer patients demonstrated severe erectile dysfunction, low sexual desire, and dissatisfaction with intercourse.

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P160 Comparative Assessment and Experimental Validation of Small-Volume Detectors for Accurate Small-Field Photon Beam Dosimetry

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Background

Accurate small field dosimetry remains a critical challenge in modern radiotherapy due to steep dose gradients, loss of charged particle equilibrium and detector-volume averaging effects. This study presents an experimental validation of several detectors of small-field photon beam dosimetry for Elekta synergy Linear Accelerator.

Methodology

The four detectors evaluated were PTW 30013 Farmer Chamber (0.6cc), PTW 31021 Semiflex (0.07cc), PTW 31022 Pinpoint (0.016cc) and PTW 60023 microsecond Diode (0.03mm³). Dosimetric measurements such as output factors, percentage depth doses (PDD) and beam profiles were acquired in a PTW Beamscan Water Phantom for field sizes of 1x1, 2x2, 4x4, 5x5, and 10x10 cm² respectively using 6MV, 10MV and 15MV photon beams.

Results

The Farmer Chamber showed output factors underestimations of up to 10 - 20% and Semiflex up to 5-10% in 1x1 and 2x2 fields due to volume averaging while PinPoint deviations were <2-5%. In contrast the microsecond Diode exhibited superior sensitivity with deviations <2% yielding sharper penumbra and accurate output factors across all small fields. PDF curves for the Diode and PinPoint showed strong agreement (<1-2%) deviation, with larger errors for Farmer (up to 10%) and Semiflex (3-5%) at smallest fields.

Conclusion

Overall, microSilicon and PinPoint provided the most accurate data for small-field photon beams while Farmer and Semiflex suited reference and intermediate fields. These findings underscore detector selection importance in advanced radiotherapy.

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P161 Improving Radiation Services in Ghana: A Capacity-Building and Implementation Research Approach to Enhance Quality, Access, and Outcomes in Cancer Care

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Background

The escalating burden of cancer in Ghana necessitates a critical examination and enhancement of its existing radiation oncology infrastructure and service delivery. Currently, Ghana faces substantial deficits in radiotherapy capacity, marked by significant geographical disparities that hinder equitable access to crucial cancer treatments. The aim was to build expertise in implementation science, oncology service delivery research, health systems strengthening, and radiation therapy quality improvement. The main goal is to integrate capacity-building with pragmatic implementation research to improve the accessibility, efficiency, and quality of radiation therapy for cancer patients in Ghana.

Method

This was a qualitative study that involved a detailed evaluation of current infrastructure, workforce capabilities, and patient flow dynamics to identify specific areas for intervention and optimization, thereby addressing the significant

shortage of radiotherapy facilities and personnel. There was also facility and equipment assessment as well as workflow mapping using observation. Thematic analysis, using NVivo was employed.

Results

A comprehensive understanding of Radiotherapy service gaps in Ghana was achieved, with a co-designed, feasible, and acceptable implementation strategy. Participants showed evidence of preliminary effectiveness, fidelity, and sustainability of interventions. There was also an enhanced capacity of candidates and staff in implementation science, QA, and RT service delivery

Conclusion

This approach is crucial for developing a comprehensive, evidence-based strategic framework that enhances the quality and accessibility of radiotherapy services. This study necessitates targeted interventions that not only expand the physical footprint of radiation oncology services but also optimize their distribution to maximize patient reach

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P163 Staff perceptions on the current service for radiotherapy treatment planning in patients with cardiac pacemakers

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Purpose

Establish staff opinions on the current service for radiotherapy treatment planning patients with cardiac pacemakers. Specifically focussing on MRI radiotherapy planning.

Methods

Qualitative methods were used. Five staff members were intentionally chosen and consented to participate in semi-structured interviews. The analysis method chosen was reflexive thematic analysis adapted from Braun & Clark (2021) which utilises themes to organise and categorise the data.

Findings

The themes that emerged from the data were arranged to construct three categories, for, against and Indifferent, these were then subdivided into three further theme groups.

Discussion

Discussions surrounded whether staff felt an MRI planning service would be beneficial, feasibility and why there wasn't a service currently. Barriers included; staffing levels, education and current absence of relationship with cardiothoracic team. Benefits included; reducing health inequalities, more precise treatment and therefore improved patient outcomes. Understandably there was hesitation amongst staff that had no experience in scanning patients in MRI with a pacemaker.

Conclusion

The benefits of using MRI are undeniable, with radiotherapy departments now adopting the modality for both planning and hybrid treatments. Recent developments of pacemakers have inspired more research suggesting the 'safe' scanning of these patient's. To enable the provision of an MRI radiotherapy planning service for this patient group there would need to be enhanced support from cardiothoracic services and radiology. Staff would need more training and standard operating procedures developed in order to increase confidence. All participants were able to appreciate why a service may be of benefit provided strict guidelines were followed.

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P164 Integrating sex as a biological variable (SABV) into radiotherapy quality assurance (QA)

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Background

Radiotherapy clinical trials, planning guidance and quality assurance (QA) systems have largely been derived from pooled, sex-averaged datasets, often male-dominant. Preclinical/clinical evidence indicates biological sex influences radiosensitivity, toxicity and survival outcomes. These differences are rarely considered in predictive modelling, planning systems or QA processes. Current QA frameworks emphasise geometric accuracy and dosimetric consistency, but remain biologically static. This work explores how Sex as a Biological Variable (SABV) could be incorporated into radiotherapy QA to support biologically informed performance evaluation.

Method

A narrative synthesis was conducted across radiotherapy outcomes, radiobiological literature and policy guidance on sex-disaggregated research. Survival, toxicity and organ-at-risk sensitivity were reviewed with attention to sex-stratified reporting. Kidney stereotactic body radiotherapy (SBRT) and lung cancer served as worked examples. The feasibility of integrating SABV into adaptive, learning-based QA pipelines was explored conceptually. Focusing on audit, benchmarking and model performance monitoring, rather than treatment modification.

Results

Evidence demonstrates sex-linked differences in radiotherapy response, with females generally showing improved tumour control alongside greater risks of late toxicity and second malignancies. Mechanistic studies implicate differences in DNA repair, immune modulation and sex-chromosome biology. Despite this, most trials and registries pool outcomes. Plus, NTCP/TCP models, α/β assumptions and plan-quality indices remain sex-averaged. In kidney SBRT literature, female patients are under-represented and sex-specific reporting limited. Potentially masking clinically relevant effects. Integrating SABV into QA enables biologically informed benchmarking alongside geometric verification.

Conclusion

Incorporating SABV into QA represents a necessary evolution toward biology-informed radiotherapy quality systems. Supporting equitable evidence generation and improved dose–response evaluation.

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P165 Mottled air on postoperative CT: Think beyond Gossypiboma

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Background

Postoperative imaging frequently demonstrates gas-containing collections, which can pose a diagnostic challenge. Absorbable hemostatic agents used during surgery may produce air-containing lucencies on CT, closely mimicking more serious complications such as retained surgical sponges (Koikkara et al. 2025) and abscesses (Arnold et al 2008) . Although there are characteristic features (Sandrasegaran et al. 2005), limited familiarity with the imaging appearance of these materials can lead to misinterpretation, unnecessary alarm, and potentially avoidable re-intervention.

Purpose

This poster aims to improve recognition of the CT appearance of hemostatic material and to distinguish it from pathological postoperative findings to help radiologists avoid this diagnostic pitfall. It also highlights the importance of communication between radiologist and clinician in reaching the correct diagnosis and prevent unnecessary alarm and morbidity for the patient.

Summary of Content

We present a postoperative case of a middle-aged female who developed lower abdominal pain and wound discharge shortly after surgery. Initial ultrasound findings raised concern for a retained surgical sponge, prompting urgent contrast-enhanced CT. The CT demonstrated a postoperative fluid collection containing paired, near-symmetrical curvilinear air lucencies, initially interpreted by multiple reviewers as suspicious for gossypiboma. However, these findings were not entirely characteristic. Direct discussion between the reporting radiologist and the operating clinician revealed the intraoperative use of absorbable hemostatic material, explaining the imaging appearances. Conservative management with antibiotics was adopted, and follow-up imaging demonstrated complete resolution. The poster uses annotated CT images to compare appearance of hemostatic material with classic gossypiboma appearances to aid radiologists recognise this entity.

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Koikkara, K.A., Paul, J.C., Abraham, V.J., Lakhani, A., Kanamathareddy, H.V., Kathirvelu, G. and Chandramohan, A., 2025. Absorbable Hemostatic Agents Mimic Gossypiboma or Infected Collection on Imaging. *Indian Journal of Radiology and Imaging*, 35(01), pp.172-177.

Sandrasegaran, K., Lall, C., Rajesh, A. and Maglinte, D.T., 2005. Distinguishing gelatin bioabsorbable sponge and postoperative abdominal abscess on CT. *American Journal of Roentgenology*, 184(2), pp.475-480.

P166 One pathogen, many organs: CT appearances of classic and unusual presentations of Hydatid disease

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Background

Echinococcus infection (hydatid disease) is a parasitic disorder that can involve any organ, with 90 % of cases involving liver or lung (Khalilil et al., 2023). Splenic involvement is less common and breast involvement is exceedingly rare (El Moussaoui et al., 2020), often mimicking benign or malignant masses. Radiological appearances vary by organ and reflect both parasite activity and host immune response. Recognizing key signs—such as the “rosette” pattern (Djuric-Stefanovic et al., 2022) or the “water-lily sign” (Alabousi et al., 2020) is crucial. Misdiagnosis or unplanned intervention can lead to life-threatening complications, including anaphylaxis.

Purpose

This poster aims to illustrate the spectrum of hydatid disease across different organs and stages, highlighting diagnostic nuances that are critical for safe clinical management. By presenting radiological patterns in both common and rare sites, we emphasize the importance of organ-specific recognition to avoid procedural complications.

Summary of Content

A series of cases demonstrating hydatid disease in the liver, spleen, lung, and breast is presented using CT:

Liver & Spleen: Simple cysts progress to multivesicular lesions, eventually calcifying.

Lung: Membrane detachment (“water-lily sign”) and cyst rupture are key features.

Breast: Well-circumscribed masses with floating membranes require differentiation from common breast pathologies.

By mapping the parasite’s life cycle radiologically and pictorial review of its common and rare locations, this series underscores the need for high clinical suspicion in atypical sites. Early and accurate recognition allows radiologists to guide definitive treatment while preventing potentially fatal complications.

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Djuric-Stefanovic, A., Cvejic, S., Mijovic, K. and Ostojic, S., 2022. Rosette sign. *Abdominal Radiology*, 47(7), pp.2560-2561.

El Moussaoui, K., Lakhdar, A., Baidada, A. and Kherbach, A., 2020. Hydatid cyst of the breast: case report. *International Journal of Surgery Case Reports*, 77, pp.325-328.

Khalili, N., Iranpour, P., Khalili, N. and Haseli, S., 2023. Hydatid disease: a pictorial review of uncommon locations. *Iranian journal of medical sciences*, 48(2), p.118.

P167 Using generative AI in postgraduate assessment: Lessons from a pilot case study

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Background

Generative AI tools such as ChatGPT are increasingly used in education, but their role in assessment raises questions about integrity, reliability, and learning outcomes. This case study explores how AI was integrated into a postgraduate module at Glasgow Caledonian University and examines its relevance to professional education in diagnostic imaging.

Purpose

The aim was to evaluate whether structured use of AI could enhance critical thinking and evidence-based practice.

Delegates will gain insight into how AI can be incorporated into assessment design without compromising academic integrity. Learning outcomes include understanding the benefits and risks of AI in education, strategies for ethical use, and practical steps for implementation.

Summary of Content

The poster will present the design and outcomes of a three-part assessment: independent essay without AI use; annotated AI output comparing accuracy with student research; reflective evaluation of AI’s role in learning. It will show examples of student work, highlight common challenges such as misuse and plagiarism, and share lessons learned about framing AI as a critical evaluation tool rather than a shortcut. Recommendations for best practice will be included, alongside implications for future integration of AI in health education.

P168 Advancing imaging workforce; the first NHS SCoR- approved IV cannulation and contrast administration programme

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Background

Demand for diagnostic imaging across the UK continues to rise, with significant growth in CT, MRI and Nuclear Medicine activity placing sustained pressure on imaging services. Intravenous (IV) cannulation and contrast administration is now a routine role extension for diagnostic radiographers and other imaging professionals. Across London, however, there is considerable inconsistency in how IV cannulation training is delivered, assessed and approved. While some NHS trusts support SCoR-accredited training, others rely on non-transferable in-house programmes of variable scope and quality. Limited availability of accredited courses, associated costs and capacity constraints present further barriers to workforce development. Therefore, there is a clear need for high-quality, standardised and accessible training which aligns with current diagnostic imaging practice.

Purpose

This poster presents the development and implementation of the first NHS regional SCoR approved IV Cannulation and Contrast Administration programme delivered through the London Imaging Academy. It outlines the blended learning approach, combining online learning material from e-learning for health, in person training (including assessment and practical skills workshop), local practice for clinical competence sign off and ongoing support.

The poster demonstrates how the programme encompasses accessibility to all users, workforce flexibility and patient safety to meet service demands.

Summary of Content

The course delivers IV cannulation and contrast training through mandatory e-learning and face-to-face theory, assessment and practical skills sessions. Clinical competence is confirmed through supervised workplace practice within six weeks. Feedback has been highly positive, with 100% rating the teaching as good or outstanding; 90% would recommend the course.

P169 Simulation-Based Learning in Therapeutic Radiography and Oncology: MSc Student Training Day

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Simulation-based education is increasingly recognised as an effective method for preparing Therapeutic Radiography students for clinical practice, supporting the development of technical skills, professional confidence, and patient-centred communication in a safe learning environment. This project describes the design, delivery, and evaluation of a simulation-based MSc study day aimed at enhancing clinical placement readiness for pre-registration Therapeutic Radiography and Oncology students.

The study day was delivered to eight MSc students at the University of Liverpool and was underpinned by Kolb's experiential learning theory. Using the university's CT scanner, treatment planning systems, and Virtual Radiotherapy Environment (VERT), students engaged in a simulated cancer patient pathway. Activities included cannulation training, CT simulation, radiotherapy treatment planning, and virtual treatment delivery, with structured opportunities for reflection, feedback, and communication practice embedded throughout to mirror real-world clinical workflows.

A mixed-methods evaluation was undertaken using a post-simulation questionnaire incorporating Likert-scale and open-ended questions. Quantitative data were analysed descriptively, and qualitative responses were analysed thematically. All participants (100%) completed the evaluation. Findings demonstrated increased confidence and perceived skill development, particularly in CT simulation, treatment planning, and the integration of imaging into radiotherapy practice. Cannulation was identified as the most challenging component but was still perceived as a valuable learning experience. Overall satisfaction was high, with students highlighting the realism of the simulated patient pathway and the benefit of personalised support.

This project demonstrates that immersive simulation-based learning can enhance clinical preparedness and confidence in Therapeutic Radiography students and inform future curriculum development.

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P170 A cohort survey to assess Undergraduate Diagnostic radiography student confidence in learning cross-sectional anatomy

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As part of a year 1 Undergraduate Diagnostic Radiography module for the last 2 years, Anatomage has been utilised for the teaching of cross-sectional anatomy alongside didactic lectures to prepare students for assessment of knowledge. This aligns with the updated HCPC standards of proficiency in preparing students to be able to work in cross sectional imaging.

A pre and post anatomy teaching survey will be available to the cohort of approximately 90 first year Diagnostic Radiography students, which will ask Likert scale questions to assess confidence and assessment readiness with cross sectional anatomy knowledge. The Jisc survey will be anonymous and be presented to students as a QR code and a link available on a VLE (Canvas). Data will be analysed using Microsoft Excel and data will be secured and only available to the research team.

Example questions

- Pre degree qualification
- Age bracket
- Gender
- Did you access the pre-reading resources ahead of the lecture/seminar? Yes/No
- What type of learner are you? As 'I prefer to learn by...' questions
- After the lecture/seminar, how confident do you feel that you can identify cross sectional anatomy – Strongly agree/agree/neutral/disagree/strongly disagree.
- How useful did you find the lecture/seminar for your learning? Strongly agree/agree/neutral/disagree/strongly disagree.

The Pre anatomy teaching survey is due for completion by the end of Jan 26 and the Post anatomy teaching survey by end of Mar 26. Comparison will then be analysed and available as an ePoster for conference.

P171 An unusual case study on Eagles syndrome

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Background

Eagle syndrome is a rare clinical entity characterised by symptomatic elongation of the styloid process or calcification of the stylohyoid ligament. Although elongation of the styloid process (>3 cm) is present in approximately 4% of the population, only 4–10% of affected individuals develop symptoms. Clinical presentation is highly variable, often leading to diagnostic uncertainty. Radiographically, the condition may be incidentally identified or confused with other anatomical styloid processes, such as those of the radius or ulna.

Purpose

This case study aims to highlight the importance of clinical awareness, patient history, and appropriate imaging in the identification of Eagle syndrome, particularly within the radiography setting where initial referral details may be ambiguous.

Summary of Content

This poster will present details of an unusual case study of Eagle Syndrome. Additionally, summaries clarifying the wider clinical symptoms, radiographic features, subtypes (cranial nerve, carotid artery, and venous compression) and management options will be depicted. This poster will provide learning points that highlight the diagnostic challenges of Eagle syndrome and the value of correlating imaging findings with clinical presentation to guide appropriate referral and management.

P172 Are medical imaging students adequately prepared to deliver person-centred care to neurodiverse patients?

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Background

Approximately 1 in 7 people live with a neurodivergent condition in the UK (Cambridge University Hospitals NHS Foundation Trust, 2023). Investigations conducted by the Care Quality Commission (CQC, 2022) and the National Autistic Society have outlined the inequalities neurodivergent patients experience due to a lack of awareness amongst health care professionals (National Autistic Society, 2025). In response, new training has been introduced however, little research has been conducted amongst students to determine their knowledge and ability to reasonably adjust their practice.

Method

A qualitative research approach was utilised using semi-structured scenario-based interviews. This research was focused towards second and third year medical imaging students. The interviews were transcribed and subsequently analysed following Braun and Clarke's principles of thematic analysis (Clarke and Braun, 2017).

Results

Eight students participated and the analysis identified four themes: current awareness, handling scenarios clinically, practical versus theoretical learning and future opportunities. The results highlighted that participants had varied levels of understanding of neurodivergent conditions. Participants requested more learning opportunities even suggesting that service users who have a neurodivergent condition could discuss their experiences accessing NHS healthcare services.

Conclusion

The study identified knowledge gaps amongst students that can be rectified by offering additional training in degree programmes. Students requested more practical learning opportunities to ensure that they are more prepared for their clinical placements and for their future practice post-qualification. Further training would be beneficial for students, enhancing their awareness and ability to reasonably adjust their practice to meet the specific needs of neurodivergent patients.

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P173 Assessing Knowledge of Radiation Protection and Safety Among Undergraduate and Intern Radiologic Technologists: A Pre- and Post-Educational Course Survey

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Introduction

Radiation protection minimizes unnecessary ionizing exposure for patients and staff. Despite low diagnostic doses, risks remain. Radiologic technologists ensure safe imaging across settings. This study evaluates whether educational interventions improve students' understanding of radiation physics, safety principles, and guidelines for responsible clinical and research practice and growth.

Methods

A cross-sectional, in-person survey was conducted among undergraduate and intern students in the Radiological Sciences Department at King Saud bin Abdulaziz University for Health Sciences (KSAU-HS) in Jeddah. The Healthcare Professional Knowledge of Radiation Protection (HPKRP) scale was distributed via Google Forms. Data were analyzed using SPSS (v.29). Differences in HPKRP components between students' stages were examined using an unpaired samples t-test and ANOVA.

Results

Undergraduate students in their third and fourth years, as well as interns who completed post-educational courses, scored significantly higher than second-year students without prior coursework in medical radiation imaging. Participants with post-educational courses and training in ionizing radiation demonstrated the highest knowledge levels in radiation physics, biology, and principles of radiation use (mean: 9.2 ± 0.8), followed by radiation protection (mean: 8.9 ± 1.2). Knowledge of safe ionizing radiation use guidelines scored slightly lower (mean: 8.5 ± 1.6).

Conclusion

Structured radiation education significantly enhances students' knowledge of radiation physics, protection, and safety guidelines. Significant improvements were observed between the second and third academic stages, as well as among interns, with stable retention in later stages. Early integration and continuous education for promoting a strong culture of radiation safety and responsible practice across clinical and research environments.

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P174 Brachytherapy Education with Therapeutic Radiography (BETTER) study

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Introduction

This study aims to map the current landscape of education and training for EBRT Therapeutic Radiographers about gynaecological brachytherapy in the UK and identify factors arising from wider healthcare systems that impact variations in education. Through this, the study seeks to inform the development of recommendations for national guidance in this area.

Methods

A national survey using open and closed questions was distributed using the Qualtrics Survey platform. Recruitment was via the Society and College of Radiographers log of live research, social media and podcast engagement. Ethical approval was sought via the MSc Clinical Research course lead at Lancaster University.

Results

The survey was open to the Therapeutic Radiography workforce from the 1st of October 2025 to the 7th of January 2026 and received 127 responses. Respondents were split equally between those from a department with an on-site brachytherapy service and a department without. There was representation across years of experience post-registration (0 to more than 20 years). Themes of presence of undergraduate opportunities, continuous professional development post-registration, and perceptions of the role of EBRT Therapeutic Radiographers were identified throughout quantitative and qualitative data. Key findings include indicators of how workforce education is related to the wider healthcare system, such as physical infrastructure, service planning on all scales and professional scope of practice, which provides insight into future workforce development from a holistic perspective.

Conclusions

Findings demonstrate the current needs of workforce education from the perspective of EBRT Therapeutic Radiographers and provides guidance for workforce development.

P175 Bridging the Gap: MRI-Specific Training for Non-Medical Imaging Referrers

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Background

Requesting medical imaging forms part of many Advanced Practice roles of health-care professionals in the UK and is seen as useful to ensure patients receive the right care, by the right person, at the right time¹. Joint guidance, issued by NHS England, states that employers should ensure that registered healthcare professionals have additional clinical imaging training relevant to their role and level of practice, such as MR safety and referral best practice². At our site there are over 300 non-medical referrers, from different professional groups, practicing over a wide range of specialities.

Method

A programme of 'MR Specific' training was introduced, as an adjunct to traditional 'IR(ME)R' training. Training was delivered by MR Enhanced Practitioners, focussing on MR safety, specific implants, patient perspective and quality of imaging requests. The efficacy of the training was measured using evaluation surveys.

Results

A total of 48 evaluation surveys from a sample size of 65 were completed, a 74% response rate. The survey collected information about the referrer, including previous experience referring and training, MR knowledge pre and post training, the necessity for training and feedback. 47 (98%) respondents felt that requesting MR requires specific training, 47 (98%) felt that their knowledge had improved, 45 (94%) felt that the training would change their practice and 47 (98%) would recommend training to colleagues. Training evolved following feedback.

Conclusion

Training has been well received is now mandatory for all non-medical referrers, both new referrers and those undergoing refresher training, who are requesting MR scans.

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P176 Can student engagement be enhanced using an immersion room for simulated learning?

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Background

This study examines the effectiveness of immersion rooms for simulated learning in Diagnostic Radiography education. Current research indicates that student engagement positively impacts academic performance and retention, with active learning and real-world scenarios creating more effective learning environments (Scott et al., 2018; Tinto, 2023). Building on this evidence, an interactive session combining immersive experiences with group-based activities was implemented with two cohorts of second-year Diagnostic Radiography undergraduates at a UK University.

Methods

Feedback was collected through a mixed online questionnaire administered immediately after the sessions ended. Across two cohorts, N=47 students responded. Quantitative data were explored using descriptive statistics in Microsoft Excel. Qualitative data were thematically explored in line with the model described by Braun and Clarke (2022).

Results

Affirmative ('agree strongly' or 'agree') results were reported for overall experience (98%), the embedded small group learning (96%), the participatory learning environment (94%), alignment between intended outcomes and delivery (100%) and clinical relevance (98%). Positive effectiveness ('very effective' or 'effective') ratings were recorded for the immersion room itself (94%), the online quiz (89%) and lecturer interaction (88%). Qualitative findings further emphasised (a) visual learning benefits, (b) group dynamics and collaboration, (c) the initial adjustment period and (d) areas for improvement.

Conclusion

The findings from this research indicated a strongly positive response to the intervention, although future designs should factor in the time students might take to adjust to the new technologies, plus quality-of-life concerns such as background noise and lines of sight.

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P177 Career Aspirations of Diagnostic Radiography Students: A longitudinal Cohort Study - results from the final stage (end of year 3)

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The recent revisions HCPC standards (1) have meant that every Higher Education Institution (HEI) must adapt the curricula to ensure that newly qualified radiographers are meeting the expected professional threshold and are able to reflect the changing profession (2,3).

The purpose of this longitudinal cohort study is to ascertain important factors when students are making decisions about their career journeys. Previous results from the study have highlighted that students value experience from Clinical placement with regard influencing decision making toward certain modalities, and that wellbeing associated factors such as work-life balance still remain important.

A longitudinal cohort study was started following a new cohort of Diagnostic Radiography students over the course of the 3-year degree programme. All participants (n=78) were invited to complete an electronic questionnaire using Online Surveys (JISC, Bristol). The invitation was sent via the virtual learning platform (VLP) along with a participation information sheet. A questionnaire has been completed at entry point of training in year 1, the baseline, end of Year 1, 2 and 3. The cohort will then be approached for follow up 1 year post graduation. The questions consider influences of student career aspirations with a focus on modality exposure both within the simulation (HEI) and clinical placement environments during the radiography programme. All electronic survey and transcribed data is anonymous with the data downloaded to a password protected Excel database for initial analysis.

The results of this study are due to be analysed in May 2026, and will be disseminated at UKIO.

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P178 Creating a collaborative UK-wide educational community in diagnostic imaging

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Background

High-quality education is fundamental to sustaining a skilled diagnostic imaging workforce, yet structured support for those delivering clinical teaching has historically been inconsistent across the UK. As imaging services expand and learner numbers increase, the need for a coordinated, profession-specific educator network has become increasingly clear. In response, we established the Diagnostic Imaging Practice Educators Special Interest Group (DIPE-SIG, via SoR), creating a national platform dedicated to advancing educational practice, strengthening professional identity, and supporting those responsible for developing the next generation of imaging practitioners.

Purpose

Our aims are to introduce UKIO participants to the DIPE-SIG, highlighting its strategic purpose, achievements, and future direction. Learning outcomes include:

- Understanding why a national educator network is essential for imaging education.
- Recognising how DIPE-SIG supports practice educators, clinical supervisors, and academic partners.
- Identifying practical ways to engage with the group and apply its resources to enhance learner experience and teaching quality.

The session will demonstrate how DIPE-SIG contributes to professional development, consistency in educational standards, and collaborative problem-solving across the UK.

Summary of Content

We will outline the origins of DIPE-SIG, its governance structure, and its core workstreams. Key content includes examples of national discussions, resource development, and collaborative initiatives addressing common challenges in clinical education. A narrative overview will be given of timelines, membership growth, and emerging projects. An invitation will be given to join the network, contribute expertise, and shape the future of diagnostic imaging education.

P179 Developing Radiographer Competency in Plan of the Day (POTD) for Cervical Cancer Treatment

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Purpose/Objective

The implementation of Plan of the Day (POTD) radiotherapy for cervical cancer requires a comprehensive/ robust training programme to ensure safe and effective treatment delivery. POTD introduces an increased risk of error due to the manual selection element of treatment plans, making radiographer competency essential. We aimed to develop a structured POTD training package for therapeutic radiographers (RTTs) to allow for safe and successful implementation. Our main purpose is the evaluation of the benefits of this training programme and identifying key learnings/improvements required.

Materials/Methods

RTTs were required to have prior competency in 3D image matching and experience in gynaecological treatments.

Training included:

- In-house POTD video
- Workbook with multiple-choice and written questions (pass mark 90%)
- One-to-one offline training using anonymised test patients.

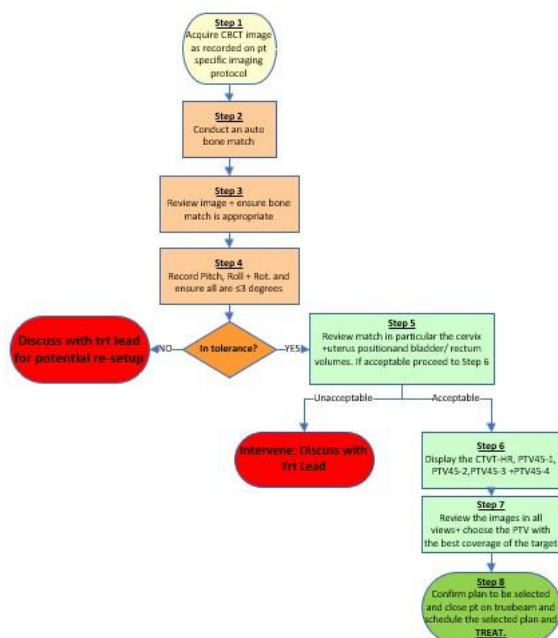
Clinicians created target and organ-at-risk contours in line with the EMBRACE II protocol, generating four planning target volumes (PTVs). Gold-standard image registrations were benchmarked by a clinician and senior RTTs. RTTs reviewed 25 anonymised CBCTs, selected the most appropriate PTV, and justified their decisions. Final competency assessment included supervised online image registrations, a reflective log, and Radiographer 2 competency. An anonymous questionnaire evaluated the programme.

Results

RTTs reported increased confidence, improved image-matching skills, and enhanced decision-making, with POTD treatment times comparable to non-adaptive workflows.

Conclusion

A multidisciplinary approach supported RTT competency and enabled the safe implementation of POTD radiotherapy.



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P180 Differences in radiographic chest image critique approach among student radiographers and radiography tutors

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Background

Chest radiographs are among the most performed radiographic examinations worldwide; poor image quality can lead to misdiagnosis, delayed treatment and compromised patient safety.

Purpose

This research explored variances in chest radiograph critique methods for image acceptability, and the influence of background clinical information, between students and tutors.

Summary of Content

An online mixed-methods, prospective, single-centre survey was conducted during OPTIMAX Radiography Summer School 2025, involving 22 participants (14 students, 8 tutors) with radiography experience. The survey applied open- and closed-ended questions; four chest radiographs were also included for critique assessment. Qualitative responses were thematically analysed; quantitative data was analysed via Spearman's rank correlation.

Both groups identified similar challenges: patient-related factors (inspiration levels, positioning) and technical factors (inadequate exposure). Before receiving clinical information, rejection rate was 64.4% among students and 77.7% among tutors. After, rates decreased to 45.3% and 43.8% respectively. Second-year students and qualified radiographers displayed similar confidence levels compared to third- and fourth-year students when assessing chest radiographs, potentially reflecting tutors' clinical experience, and the recent second-year students' training. Finally, 21.4% of students and 37.5% of tutors were unaware or unsure of national guidelines; regarding international guidelines, this changed to 57.1% and 12.5% respectively.

Findings demonstrated that education stage and clinical experience strongly influence image critique and decision-making. Despite a small sample, results highlight the need for greater standardisation in training and guidelines to enhance diagnostic accuracy of critiquing, and patient safety. Further investigation to deepen understanding on how factors affect image critiquing and rejection rates is recommended.

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P181 Enhancing Engagement and Interprofessional Networking Through a Scavenger Hunt at a National Interventional Radiology Conference

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Background

Engagement and networking are critical components of professional conferences, yet passive attendance often limits meaningful interactions particularly among early career radiographers and nurses. Gamification has been shown to increase motivation, participation and knowledge exchange in educational settings. This abstract describes the design and evaluation of an inaugural scavenger hunt implemented at a national interventional radiology (IR) conference to enhance delegate engagement and interprofessional networking with peers and industry exhibitors.

Method

A structured scavenger hunt was developed incorporating gamification elements including challenge-based tasks, rewards and voluntary participation. Delegates completed activities requiring engagement with exhibitors, exploration of IR technologies and interaction with other participants. Examples included identifying device innovations, completing micro learning prompts and gathering insights from industry representatives. A digital platform was used to track task completion. Post event evaluation was collected assessing engagement levels, networking quality, perceived educational value and overall experience.

Results

Participation rates indicated substantial engagement with data revealing delegates reported increased interaction with exhibitors and enhanced confidence in initiating professional dialogue. Qualitative feedback highlighted the effectiveness in providing a structured interactive framework promoting exploration, interprofessional communication and familiarity with emerging IR technologies. Industry exhibitors corroborated these findings, noting a marked improvement in the depth and relevance of delegate interactions compared to previous conferences.

Conclusion

The introduction of a gamified scavenger hunt represents a promising strategy to enrich delegate engagement and facilitate meaningful networking within the context of professional IR conferences. These findings underscore the potential of gamification as an innovative pedagogical tool in healthcare education and professional development settings.

P182 Exploring supervision, inclusion and learning across imaging modalities in diagnostic radiography placements.

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Background

Clinical placements are central to diagnostic radiography education, influencing student confidence, competence and readiness for practice. While supportive learning environments, effective supervision and positive team culture are known to shape placement experiences, radiography-specific research comparing student experiences across modalities remains limited. In particular, differences between plain film and modality-based placements within the same university network are underexplored.

Aim

To explore final-year diagnostic radiography students' experiences of supervision, inclusion and learning across plain film and imaging modality placements.

Methods

A cross-sectional mixed-methods survey was distributed to final-year diagnostic radiography students across NHS placement sites. The questionnaire included Likert-scale items examining supervision, feedback, inclusion, psychological safety, workload pressures and preparedness for practice, alongside open-ended questions exploring barriers and enablers to learning. Quantitative data were analysed descriptively, and qualitative responses were analysed using reflexive thematic analysis.

Results

Twenty-five students participated. Supervision was rated higher in modalities, while plain film placements demonstrated higher feedback frequency and preparedness for practice. Inclusion, team culture and psychological safety were consistently rated low across placement settings. Workload pressure emerged as the primary barrier to learning. Qualitative analysis identified four themes: restricted learning opportunities, workload pressures, inclusion and supportive supervision. Positive experiences were associated with constructive feedback, clear explanations and allowing independent practice.

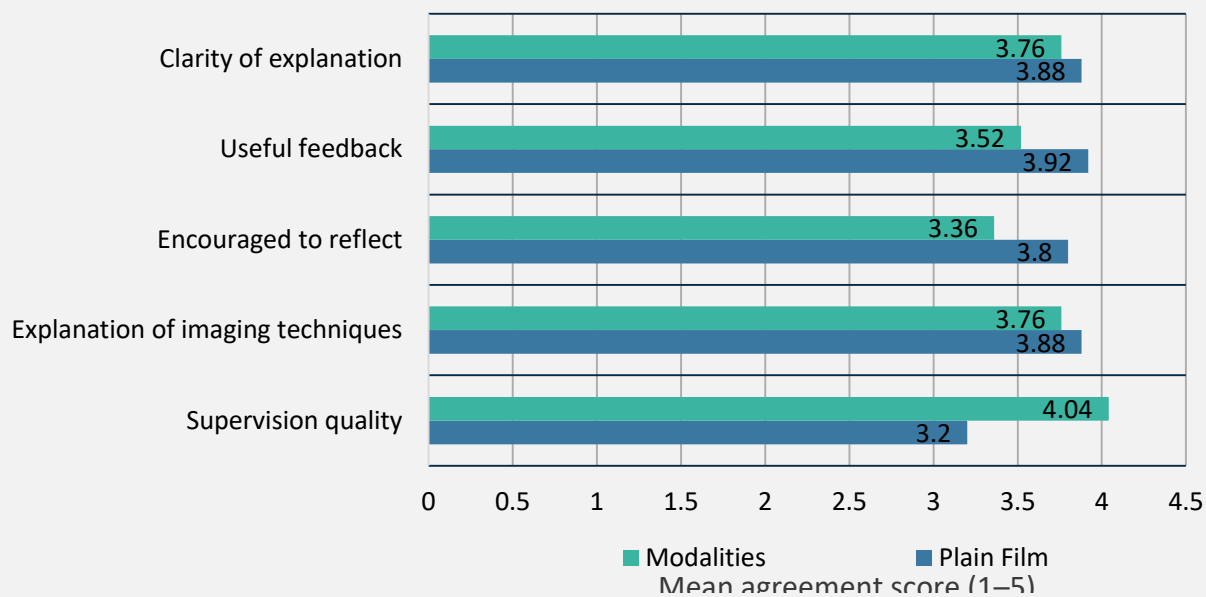
Implications

Findings indicate that supervision is perceived as stronger within modalities than in plain film placements. Further research may support the integration of effective student supervision and teaching practices within Band 5 radiographer roles, with potential benefits for student confidence and preparedness for modality-based practice.

Abstract tables:

Theme	Plain Film	Modalities	Overall experience
Supervision quality	3.2	4.04	—
Useful feedback	3.92	3.52	—
Explanation of techniques	3.88	3.76	—
Hands-on opportunities	3	—	—
Preparedness for practice	4.36	2.92	—
Feeling welcomed	—	—	2.88
Feeling valued	—	—	2.52
Psychological safety	—	—	2.6
Workload impact	—	—	4.08

Results



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P183 Exploring the experiences of first year student radiographers in developing their use of touch

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Background

Diagnostic Radiography is dichotomous in its use of touch, essential for effective practice (Wearn et al., 2020). For diagnostic radiographers, touch focuses around two different and often conflicting functions aligning to both the scientific and empathetic paradigms (Gaddow, 1984). The first is related to the task of correctly positioning patients for X-ray examinations, known as Gnostic touch (Bjorbaekmo and Menschoel, 2016). The second is the therapeutic use conveying compassion and offering reassurance, known as Empathetic touch (ibid). Anecdotal evidence suggests that first year students find developing the use of touch in their practice daunting as this is often the first time they have made physical contact with strangers in a professional context. The aim of this study is to explore the experiences of first year diagnostic radiography students in developing the use of touch during their first practice placement.

Method

All first year students will be invited to take part in this study. Focus groups will be undertaken after the first year students have undertaken six weeks of placement. The focus groups will have 6-8 participants and be facilitated by both researchers. They will be semi-structured using an interview guide using Microsoft Teams for ease of access (Coolican, 2019).

Results and Conclusion

Responses will be thematically analysed, related to literature and contextualised to explore the development of touch. The findings will be used to identify any issues experienced by students and discuss ways in which they can be better prepared and supported prior to their first placement.

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P184 Exploring the simulation lead radiographer role in radiography education

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Background

Simulation is increasingly embedded within radiography education to support practice experience learning (Wilkinson et al., 2026). Effective simulation delivery is resource-intensive and highly dependent on coordinated leadership. Several higher education institutions (HEIs) have introduced a dedicated simulation lead radiographer role to champion and coordinate simulation activity. However, little is known about how the simulation lead role is operationalised, how it influences simulation session quality, or how simulation is managed when the role is absent.

Purpose

To examine the benefits and challenges of the simulation lead radiographer role, with a focus on how it supports the coordination of simulation delivery, placements and resources. Insights from HEIs illustrate the advantages of dedicated leadership and the challenges encountered without a simulation lead.

Summary of Content

This work shares early observations on how HEIs are approaching the simulation lead role, including the different ways it is organised and supported, as well as the experiences of HEIs without a simulation lead. It also considers how the role fits within educator teams, how simulation activity is coordinated, and what factors may help or hinder delivery.

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P185 From Minimal Exposure to Meaningful Confidence: A Multi-Modal Approach to Undergraduate Radiology Teaching

[Dr Charlotte Matheson^{1,2}](#), [Dr Elwin Marshall^{1,2}](#), [Dr Rebecca Curtis^{1,2}](#), [Dr Phoebe Hill^{1,2}](#), [Dr Sean Porritt^{1,2}](#)

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Background

Medical students are required by the Royal College of Radiologists' undergraduate curriculum to propose, justify and interpret imaging (1). Despite this, exposure to radiology teaching and image interpretation remains inadequate (2)(3). This project evaluated a theory-informed, multi-modal radiology teaching programme delivered to third-year medical students during their first clinical placement.

Methods

A mixed-methods educational evaluation following delivery of a structured radiology teaching programme informed by experiential learning, active recall and formative assessment, underpinned by cognitivist and constructivist learning theories. Teaching included multidisciplinary-team (MDT) lead classroom sessions delivered by radiologists, radiographers and resident doctors, case reviews, weekly "image-of-the-week", interactive polls, integrated-image-interpretation following ward activities, and a gamified escape-room exercise. Teaching covered plain-film and CT head interpretation. A post-module anonymous questionnaire was distributed to all students (n=16), with 10 responses received (62.5%). Students self-rated prior exposure to radiology, confidence before and after the module, and the perceived usefulness of teaching methods. Analysis was descriptive.

Results

90% of respondents reported minimal prior exposure to image interpretation with low baseline confidence. Following the module, confidence improved across all modalities, with 100% agreeing or strongly agreeing they felt confident interpreting chest and musculoskeletal radiographs. Confidence in CT head interpretation also increased substantially. 100% of respondents felt the module provided sufficient exposure to radiology teaching. Traditional MDT classroom teaching, "image-of-the-week" and case reviews were ranked most useful methods.

Conclusion

This structured, theory-informed, multi-modal radiology teaching programme was perceived to provide sufficient exposure to radiology education and was associated with improved medical students' self-reported confidence in image interpretation.

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P186 Impact of a community of learning through the implementation of cohort days for pre-registration therapeutic radiography learners

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Background

One of the largest UK radiotherapy services supports training and education for a high number of pre-registration learners located across 5 centres within the Northwest. To support capacity, meet learning objectives and curriculum guidelines, learners are placed across the service. Efforts are made to group learners together; however, this may not be suitable or achievable resulting, in a single learner in that learning environment. Learning can be more effective when a community of learning is achieved (2, 3). In recognition of this, 'cohort days' were introduced and implemented.

Purpose

'Cohort days' involve learners coming together from different geographical placement sites, in person. Sessions are facilitated and by educators utilising coaching skills to promote psychological safety, reflective practice, and a safe space. Time is given for peer-to-peer learning support and open discussion without facilitation.

Summary

Following the implementation of cohort days, feedback was sought via an anonymised MS forms survey which was sent to all apprentices on placement. Qualitative data was gathered, and a thematic analysis was undertaken using Braun and Clarke's analysis tool (1). Themes that emerged included – connectivity, cohesion, support, feeling valued, shared vulnerabilities, shared experiences, increased resilience. Facilitation and support for a community of learning has enhanced individual learner development, fostered cohesive peer support and promoted sustainability of learner engagement with their learning. The 'cohort days' provided insight into learner experiences, informing future planning and placement provision. Themes have highlighted resilience which may aid in retention of future workforce.

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P187 Improving imaging referral practice through a novel, web-based, interactive case-based platform integrating iRefer guidelines

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Background

Imaging demand continues to rise while referrals are increasingly undertaken by a multidisciplinary workforce (Swann et al., 2025, Pelzl et al., 2023). Although iRefer provides evidence-based guidance, its impact is often limited by the "last-mile" challenge of translating recommendations into consistent point-of-care decisions. Inappropriate modality or imaging pathway selection can expose patients to harms and delay diagnosis. Accordingly, the Royal College of Radiologists and the Royal Australian and New Zealand College of Radiologists emphasize structured training for all referrers.

Purpose

To present an evolved, globally accessible education platform that converts iRefer guidance into interactive, expert-iterated case vignettes to support safer, more appropriate imaging referrals.

Summary of content

A web-based learning platform was developed that operationalizes iRefer recommendations into structured, case-based vignettes, co-designed with Australian radiology registrars and medical students. Further development supported translation of iRefer pathways into standardized, modular vignettes across clinical presentations and modalities, facilitating a scalable case library and consistent implementation. Each vignette undergoes iterative review with imaging experts, optimizing clinical application and educational value. Selected vignettes will be showcased during this presentation.

Cases present focused history, examination and investigations, then prompt decisions on initial imaging choice, key decision points and when further or alternative imaging is indicated. Learners interpret multimodality images using interactive functions, linking clinical questions to imaging selection and diagnostic yield. Immediate feedback is provided with referenced iRefer rationale, and personalized analytics generating longitudinal CPD-ready portfolios. This novel approach offers a scalable route to improving referral appropriateness and patient outcomes across diverse referrer populations.

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P188 Interprofessional learning through stroke in medical imaging education

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Background

Interprofessional learning (IPL) is essential in contemporary healthcare education, supporting effective collaboration across professional groups (Patel et al., 2025). However, structured IPL opportunities within medical imaging programmes remain limited, particularly those that meaningfully incorporate the patient voice (Leadbeater et al., 2021). This session addressed these gaps by involving postgraduate healthcare professionals undertaking further study as presenters, enabling undergraduate medical imaging students to learn from their clinical expertise while the presenters contributed to the education pillar of their own advanced clinical practice.

Purpose

The session aimed to use stroke as a clinical exemplar to demonstrate interprofessional working across the patient pathway. Learning outcomes included enhancing understanding of professional roles, improving communication and role awareness, and reinforcing the central role of the patient in collaborative care. The session was designed to support medical imaging learners to apply interprofessional principles to future clinical practice.

Summary of Content

A stroke survivor shared their journey, followed by presentations from postgraduate students who are also practising healthcare professionals. They outlined their roles within the stroke pathway and the teams they work alongside, helping students understand how interprofessional practice functions in real clinical settings and where radiology fits within the wider pathway. This approach highlights best practice in IPL teaching, demonstrating a model that can be easily adapted to other clinical topics by drawing on the skills and expertise of available postgraduate healthcare students. Feedback described the session as engaging and impactful, increasing students' confidence in working with other professions and supporting patients following stroke.

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P189 John Hall-Edwards (1858-1926): 'An Artist's Triumph. Victim of the X-Rays'

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The pioneer Birmingham radiologist John Hall-Edwards was deeply interested in art and photography throughout his life. His paintings were presented at a private exhibition held by the Royal Society of Medicine in London and written up as 'An Artist's Triumph. Victim of the X-Rays'. Hall-Edwards suffered from radiation injuries and as a result had lost all his fingers and one thumb. For 29 years he worked as an 'X-ray surgeon' (radiologist), and during this time he developed a dreadful radiation disease that resulted in the loss of his fingers. Following his retirement, he visited an art gallery and saw a painting that inspired him. His loss of fingers did not daunt him. He had an artificial finger fixed to his hand, and between this and his remaining thumb he held a paint brush. It was on a Saturday that he saw the picture at the art gallery that re-aroused his artistic ambition, and by the Sunday morning he had painted his first picture. He progressed steadily, painting many fine pictures. Two of Hall-Edwards' paintings will be presented and interpreted in the light of his sufferings.

Purpose

To understand how radiography and art were integrated in the career of John Hall-Edwards.

To learn about John Hall-Edwards' radiation injuries as reflected in his art.

To celebrate the life of this remarkable radiologist.

Summary

Two paintings by John Hall-Edwards made when he was suffering from radiation injuries will be shown and discussed.

Thomas, A.M.K. (2022) *Invisible Light, The Remarkable Story of Radiology*. Boca Raton: CRC Press (Taylor and Francis Group).

P190 Mind the gap: surveying training provision for international radiographers across south west England

[Dorothy \(Dolly\) Cox¹](#)

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Background

Internationally educated radiographers (IERs) represent essential members of the NHS imaging workforce. Despite standardised national training frameworks for internationally educated doctors and nurses (General Medical Council, 2024; Nursing and Midwifery Council, 2024), no equivalent programme exists for radiographers, potentially impacting integration, professional development, and patient safety. This service evaluation investigated current training provision and barriers to workplace integration for IERs across South West England.

Methods

A mixed-methods online questionnaire was distributed to radiology heads of department across NHS trusts in South West England. The survey examined current training practices, integration challenges, and professional consensus on standardisation needs. Quantitative data were analysed using descriptive statistics, with thematic analysis applied to qualitative responses.

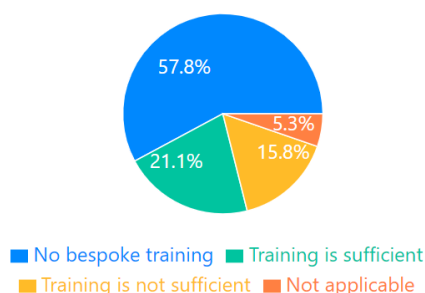
Results

Nineteen departments responded (30.2% response rate). Whilst 84.2% employed IERs, only 36.9% provided any bespoke training. Key integration barriers included communication challenges (despite IELTS requirements), unfamiliarity with UK radiation regulations, and differences in professional autonomy expectations. Priority training areas identified were radiation regulations (IR(ME)R and IRR) (78.9%), communication within NHS contexts (68.4%), and local examination protocols (63.2%). Overwhelmingly, 89.5% of respondents supported development of a national standardised training framework.

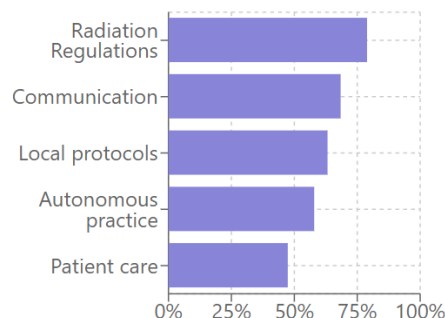
Conclusion

Significant gaps exist in structured support for IERs despite their substantial contribution to NHS imaging services. Strong professional consensus supports developing nationally standardised training resources focusing on radiation regulations, communication, and autonomous practice within UK healthcare contexts, similar to frameworks available for other healthcare professions.

Current Bespoke Training Provision



Most Beneficial Training Topics



1. General Medical Council (2026) Welcome to UK Practice. Available at: <https://www.gmc-uk.org/about/what-we-do-and-why/learning-and-support/workshops-for-doctors/welcome-to-uk-practice> (Accessed: 08/01/2026).

2. Nursing and Midwifery Council (2024) 'Test of Competence for all nursing fields and midwives'. Available from: <https://www.nmc.org.uk/registration/joining-the-register/toc/toc-nursing-and-midwifery/> (Accessed 08/01/2026).

P191 Putting the human at the centre of clinical imaging safety: Pause and Check as an educational response to IR(ME)R learning

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¹Alliance Medical, Warwick, United Kingdom

Background

Care Quality Commission IR(ME)R learning demonstrates notifiable accidental and unintended exposures in diagnostic imaging are often associated with human factors. Incidents commonly originate from failures in Pause and Check processes at early stages of the imaging pathway, particularly referral transcription, booking, and administrative verification (1). Clinical imaging services operate in complex, high demand environments where interruptions, time pressure, and competing priorities increase cognitive load and risk. This highlights the need for educational approaches that reflect real world practice and support how staff think and act in everyday clinical settings, placing both patients and staff at the centre of imaging safety.

Purpose

To demonstrate Pause and Check as a practical educational intervention that supports diagnostic imaging staff to recognise human factors, pause at critical decision points, and apply reflective checking behaviours in routine practice. Learning outcomes include improved understanding of how human factors contribute to error, increased confidence to pause and challenge discrepancies, and application of Pause and Check principles across imaging pathways to enhance patient safety.

Summary of content

The poster outlines the design and delivery of Pause and Check workshops across clinical imaging services. Content is structured around key stages of the imaging pathway, including referral verification, appointment booking, authorisation, and pre procedure checks. Real world IR(ME)R learning examples show how small administrative, or communication errors can escalate into clinically significant events. Reinforced through workshop-based education, Pause and Check promotes shared responsibility, psychological safety, and situational awareness, supporting a positive, learning focused safety culture transferable across imaging modalities.

1. Care Quality Commission (2025) Ionising Radiation (Medical Exposure) Regulations: Annual Report 2024–2025. London: CQC.

P192 Recognition of Prior Learning in Context: Distinguishing Academic Achievement from Professional Practice

[Melanie Clarkson¹](#), [Mr James Marcus²](#), [Dr Beverly Snaith²](#), [Mrs Kayleigh Hizzett²](#)

¹Sheffield Hallam University, Sheffield, United Kingdom, ²University of Bradford, Bradford, United Kingdom

Enhanced practice is increasingly recognised as both a valued career goal and a potential stepping stone towards advanced practice across healthcare.¹ While both levels of practice are aligned with academic Level 7, they have distinct expectations regarding scope, responsibility, and professional influence relative to their clinical level.² This difference poses challenges for academic institutions, employers, and radiographers when considering the recognition of prior experience and learning in practitioner progression.

This e-poster draws on NHS England (2024) guidance on the recognition of prior experience and/or learning, which differentiates academic achievement from professional practice capability.³ The principles are considered in the context of radiography education aligned with the NHSE-commissioned reform projects (CHEERS and WE-SEARCH),^{1, 2}, emphasising the need for structured, role-appropriate education to support safe and effective progression from enhanced to advanced level practice.^{1,2}

The poster illustrates how RPL can be applied appropriately within postgraduate radiography programmes, ensuring that prior learning is recognised without conflating academic level with professional readiness. Appropriate education and training can ensure radiographers not only meet academic standards but also effectively translate these insights into meaningful practice development, fostering confidence, clarity, and professional identity.³

Further socialisation and clarifying the differences between academic achievement and professional practice levels will boost confidence among academic institutions, employers, and radiographers. By embedding transparent RPL principles within postgraduate curricula, educators and institutions can better support sustainable workforce development and progression into advanced practice. This work contributes to national discussions on the role of education in professional practice development and workforce transformation

1. Clarkson, M., Snaith, B., Hizzett, K., Hargus, J. (2026). Exploring Enhanced Level Practice in Radiography: A Survey of Awareness and Implementation Across the UK. *Radiography*. Vol. 32. Iss. 1. <https://doi.org/10.1016/j.radi.2025.103222>

2. Hargus, J., Hizzett, K., Clarkson, M., Snaith, B. (2026). Advancing practice radiography education in the UK: An analysis of themes from higher education programmes. *Radiography*, Volume 32, Issue 3, <https://doi.org/10.1016/j.radi.2026.103344>

3. NHS England (2024) Enhanced practice recognition of prior experience and/or learning guiding statement. Available from: <https://learninghub.nhs.uk/Resource/57484/Item> [Accessed 09/02/2026].

P193 Training the Future Workforce: A Structured Approach to Equipping Interventional Radiographers for a 24/7 Mechanical Thrombectomy Service

[Miss Laura Owen¹](#)

¹*Leeds Teaching Hospitals, Leeds, United Kingdom*

Background

Leeds Teaching Hospitals NHS Trust (LTHT) is working towards delivery of a 24/7 mechanical thrombectomy (MT) service in line with NHS England targets for hyperacute stroke care (NHS England, 2019). To support this service expansion, nine whole-time equivalent (WTE) Interventional Radiographers were recruited within a two-month period, almost doubling the existing workforce. This rapid expansion required the development of a structured, sustainable, and innovative preceptorship training programme to ensure staff competency, confidence, and patient safety.

Purpose

This poster shares the challenges faced, curriculum design, and innovative strategies to bridge the theory–practice gap when training a large cohort of newly qualified or early-career radiographers. By disseminating learning and experience, this work aims to support other UK centres preparing for or transitioning to similar service models.

Summary

This poster explores the design and delivery of a training programme developed with sustainability at its core, to equip future staff with the defined knowledge, skills, and attributes required for a 24/7 MT service. A blended learning approach combined interprofessional learning, classroom teaching, case-based learning, simulation training, and supervised clinical practice. Simulation was used as a complementary tool to clinical training, recreating real scenarios in a controlled environment to enhance decision-making and problem-solving. Specialist study days featuring game-based methods are highlighted, alongside the impact of a two-day high-fidelity cadaveric simulation at the Image Guided Research Therapy Facility (IGRTF) in Dundee. Participant feedback, assessment strategies, and programme outcomes are presented, demonstrating how this approach empowers learners, supports workforce resilience, and ensures service readiness.

1. NHS England. (2019). The NHS Long Term Plan. [Accessed on 22.12.2025]. Available from: <https://www.longtermplan.nhs.uk/>.

P194 Using High Fidelity Cadaveric Simulation to Enhance Radiographer Readiness in Mechanical Thrombectomy

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Background

Mechanical thrombectomy (MT) requires technical proficiency, situational-awareness, rapid decision-making, and effective inter-professional communication. Rapid workforce expansion combined with limited theatre capacity reduced opportunities for hands-on clinical exposure. This prompted a simulation programme on a perfused human cadaveric model delivered at the Image Guided Therapy Research Facility, University of Dundee to enhance learning and mitigate clinical risk.

Purpose

We describe how an Interventional Radiology (IR) department used human cadavers to improve early-career radiographer readiness for MT on-call by providing a realistic, immersive simulation to develop technical skills, decision-making, and multidisciplinary communication.

Summary

High-fidelity simulation allows learners to experience realistic clinical scenarios in a safe environment without risk to patients (Gordon et al., 2001). Cadaveric models further enhance this by enabling visualisation of vasculature with dynamic flow (McLeod et al., 2017).

IR radiographers attended a structured two day simulation replicating the procedural, cognitive, and team-based demands of MT. The programme combined didactic teaching with hands-on experience, enabling learners to repeatedly practise equipment handling and angiographic techniques to develop time-critical technical skills crucial for enhancing patient safety. This approach enabled use of roadmap functions that cannot be reproduced using non-cadaveric models. Learners initially practised with peers and then progressed to complete MT procedures on perfused human cadavers covering different scenarios.

Preliminary feedback suggests that practical and scenario training strengthened clinical reasoning, confidence in enhanced decision-making, and radiographer readiness for MT on-call. We outline simulation design, key learning outcomes, and future directions for embedding Dundee's cadaveric stroke model within radiographer MT training pathways.

Gordon, J.A. Wilkerson, W. Shaffer, D. W. Armstrong, E. (2001). "“practicing” medicine without risk’. Academic Medicine. 76(5), 469–472.

McLeod, H. Cox, B.F. Robertson, J. Duncan, R. Matthew, S. Bhat, R. Barclay, A. Anwar, J. Wilkinson, T. Melzer, A. Houston, J.G. (2017). Human Thiel-Embalmed Cadaveric Aortic Model with Perfusion for Endovascular Intervention Training and Medical Device Evaluation. Cardiac Interventional Radiology. 40(9), 1454–1460.

P195 Using Lego to teach anatomy and pathology

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Background

Lego has been used in business and industry since the 1990s to support adaptive, three-dimensional problem-solving strategies. More recently, it has been adopted in education to help learners visualise concepts and bring abstract ideas to life.

Purpose

This presentation explores how Lego has been incorporated into teaching anatomy and pathology within a BSc degree apprenticeship. Learners on this programme come from varied backgrounds and have limited time on campus for in-person teaching, so finding engaging ways to support applied anatomy learning within the classroom setting is essential. Initially bones of the hand were thought to be a good starting point. Using a Lego template, instruction was given to recreate the model, using specific coloured bricks to represent each specific bone of the hand and wrist. This expanded to a model of a vertebra and then further development gave the opportunity for the learners to build a pathology utilising creative skills. Feedback was extremely positive for all the sessions. Learners felt engaged and it was a memorable experience, helping them to retain their knowledge.

Summary of content

The presentation will provide an overview of how Lego has been used to teach anatomy and pathology in pre-registration training. It will outline the general principles behind its role in Innoplay learning, giving examples to others to use in their own practice. Feedback from learners and peers will also be presented to demonstrate their views on such methods of teaching and learning in education.

1. LEGO Group, 2010. LEGO® SERIOUS PLAY®: Basic Principles and Philosophy. Accessed at Oct 2025.

P196 Establishing a reflective discussion group in a paediatric radiology department

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Background

Radiology professionals frequently encounter complex clinical, ethical and emotional challenges during their work. Staff can feel confused, annoyed or stressed or not sure what to do if this is not addressed. Yet opportunities for structured reflection and emotional processing within busy clinical radiology departments are often limited. An absence of protected space and time to reflect on these challenging situations may contribute to moral distress. It could also impact on reduced wellbeing, and missed opportunities for shared learning and service improvements.

Purpose

With internal training from Psychology, we established a reflective discussion group within the radiology department for all staff at a paediatric centre. This provided regular protected time and a psychologically safe environment in which participants could discuss difficult clinical dilemmas. Sessions were facilitated to promote confidentiality, mutual respect, and open dialogue, allowing participants to reflect on their responses, professional challenges, and ethical considerations. In addition, participants were encouraged to collaboratively explore potential changes to practice arising from these discussions. Feedback indicated that the group was valued as a safe space and increased their confidence in discussing challenging situations. The participants left heard and understood and had a clearer vision of how to move forward.

Summary of Content

This poster explores the value of reflective discussions, the experience of running the group, and the practical considerations involved in establishing and facilitating sessions, alongside the learning points identified from these informative sessions.

P197 A qualitative phenomenological interview-based study into final year GCU pre-registration diagnostic imaging students' perspectives of preparedness to mentor upon registered qualification

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Objectives

This qualitative study aimed to explore final year Glasgow Caledonian University pre-registration diagnostic imaging students' perspectives on their preparedness to mentor future students upon registration. The research sought to; clarify their understanding of mentoring, examine their knowledge/awareness of related professional and registered obligations, and perceived readiness to provide mentorship.

Methods

An interpretive phenomenological approach was employed to capture individual lived experiences and meanings. Semi-structured interviews were conducted with eleven final-year students using non-probabilistic, convenience and purposive sampling. Transcripts were analysed using a two-tiered reflexive process to derive experiential themes.

Results

Three overarching experiential themes emerged: (1) Cognition and comprehension of mentoring, (2) Relevance and application of mentorship in clinical practice, and (3) Preparation to mentor. Participants showed clear understanding of the role of the mentor as distinct from supervision but identified widespread inconsistencies in its application during clinical placements. Most reported a lack of formal preparation or training, and feelings of under-preparedness to fulfil mentorship obligations post-registration.

Conclusion

Participants strongly emphasised the significant value of mentoring but reported the gap between professional expectations and their experiential readiness. Key barriers included inconsistent mentor engagement, communication and learning style challenges, and lack of structured mentorship guidance during training.

Advances in Knowledge

This study uniquely captures the perspectives of diagnostic radiography students at the point of transition to professional practice. It strongly suggests the positive utility of intervention by higher education institutions to develop structured mentorship training, aligned with current HCPC standards, to ensure readiness and support successful role transition.

P199 Developing clinical skills in student radiographers: the use of livestreaming X-ray examinations

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¹University of Leeds, Ipswich, United Kingdom

Introduction

Due to a range of service demands on both radiology and education providers, there is growing pressure to find alternative approaches to providing effective practice-based learning experiences. This pilot project explored the use of live video streaming from a diagnostic imaging department to learners in an adjacent room with synchronous, two-way communication.

Methods

Staff, student and service user experience was investigated via a qualitative exploratory approach, using empathy mapping, observations and interviews. A clinical skills tutor undertook X-ray examinations on real patients in a radiography clinical skills suite. One or two students were directly involved in the examination, whilst the remaining student participants engaged remotely via live streaming.

Results

Data was analysed using inductive reasoning, resulting in the emergence of seven final engagement insights: 1) learning through technology, 2) clarity consent and ethical engagement, 3) empathy communication and patient-centred care, 4) student reflection, confidence and growth, 5) technical judgement and safety awareness, 6) student engagement during non-patient intervals, 7) reflective tools as pedagogical connectors.

Conclusion

The blend of live observation and instructional commentary gave students the opportunity to observe subtle, relational aspects of care. Identifying changes to tone of voice, body language and facial expressions enabled students to see the immediate effect of communication strategies. This shared, immersive experience combined with facilitated reflection and structured debrief, led to deeper levels of reflection.

Implications for practice

This study proved it is possible to provide rich human-centred clinical learning which extends beyond traditional placement settings.

P200 Exploring social accountability: initial results from a cross-continent study on perceptions and understanding in therapeutic radiography educational programmes

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Background

The WHO defines social accountability (SA) in medical education as ‘the obligation to direct....education, research and service activities towards addressing the priority health concerns of the community/region/nation...’[1]. SA is increasingly accepted as a help in addressing healthcare inequalities in such communities[2]. Our study examines the foundational understanding of SA amongst learners and staff within two therapeutic radiography/radiation therapy programmes, cross-continentally.

Methods

Both universities equally informed the research approach; with ethical approval granted by each institution. Within this on-going study, qualitative data is obtained through online, open-ended style questionnaires and face-to-face focus groups. Here are initial UK results from our first 11 undergraduate learners and 9 academic staff.

Results

89% of staff (previously or presently) engaged with socially accountable actions/behaviours; 89% considered they had knowledge, skills and understanding (in some topics) to help develop socially accountable practitioners, with 78% positive about further training.

Qualitatively, among key themes emerging are (see table 1):

1. Inclusive practice and curriculum: More experienced learners identified current curriculum topics relating to SA; regarded SA integral to therapeutic radiographer identity; were confident that encountering a diverse range of patients and more teaching, would make their practice even more inclusive.
2. Power to influence change: learners considered they could be future agents of change; treating patients on their own level, improving parts of the service and supporting varied and diverse groups etc..

Conclusions:

Findings highlight the need to address gaps in training and curriculum, create innovative learning opportunities and support students to develop their socially accountable practice.

Table 1: A sample of verbatim responses from some of the Focus Groups

Emerging Theme: <i>Inclusive Practice and Curriculum</i>	
	"I do wonder though, because I feel like I don't know about you guys, but I feel like maybe for me to help empathise or understand with particular patient groups like that, if we could see more. Of course, I understand that must be very difficult getting in a patient who has British Sign language as their first language who's already accessed cancer treatment, but it would be really interesting to see their experiences of the healthcare system and what they would like us to do to modify our communication to help other people in a similar situation to them."
	"I think for knowledge being able to understand that the needs and diversity of our population is constantly changing, and I think being able to have an appreciation for that, certainly helps us take into account that every patient has their own holistic unique needs."
	"I would say in the oncology modules, there's always a section on holistic needs. There's also epidemiology and aetiology, we always talk about the social backgrounds and economic backgrounds."
	"This year we had a session on deafness, I think that would definitely help to understand the difficulties or experiences that deaf people have faced."
	"We had a teacher of the deaf who came in and she was incredibly enthusiastic and she explained really well what to do and what not to do when communicating with patients who's communicate with British Sign language."
Emerging Theme: <i>Power to Influence Change</i>	
	"I guess, like if you're passionate about a certain group of people, I guess you could sort of maybe, let's say, your dissertation you could explore like what's happening at your centre and if there are some ways you could improve that part of the service? Yeah."
	"I would say like being able to communicate effectively with patients with like a range of different backgrounds and treating everyone sort of like equally, but on their own level. That makes sense, yeah."
	"I think having empathy for the patient, I think it's, I think with certain patients you can definitely relate to this, relate to their situation like for example obviously ethnic minority. So I'm guessing I can basically relate to other ethnic minority patients, but I guess let's say if someone has something that I might never be able to relate to. I think it's, but at the same time trying to sort of put to put myself in that position and be like what could I need if I was in that position as of sort of preemptively trying to see their needs."
	"I feel like we're developing professionals, aren't we? Not quite qualified professionals, definitely not; but I think understanding the agency and authority that we may currently have and may have in the future, that we can use to inform and change clinical practise and our own practise to help support the needs of a varied and diverse group of patients."

1. Boelen, C. and Heck, J. (1995) Defining and measuring the social accountability of medical schools. WHO/HRH/95.7. WHO, Geneva, Switzerland.

2. Boydell, V., McMullen, H., Cordero, J. et al. (2019) Studying social accountability in the context of health system strengthening: innovations and considerations for future work. Health Res Policy Sys 17, 34. <https://doi.org/10.1186/s12961-019-0438-x>.

P201 Radiography student perspectives on paediatric education and preparedness for paediatric clinical placement

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¹University College Dublin, Dublin, Ireland

Background

Paediatric radiography is a highly specialized field, widely regarded as more complex than adult imaging due to the heightened requirements for clinical adaptability, age-appropriate communication, and stringent ALARA adherence. While paediatric undergraduate exposure is typically limited to short clinical placements, minimal literature exists regarding student readiness. This study evaluated undergraduate radiography students' perceptions of how academic and clinical education prepared them for dedicated paediatric placements, identifying key challenges and beneficial educational supports.

Methods

A mixed-methods online questionnaire was developed. The study population comprised third-year radiography student following a clinical placement at a specialist paediatric hospital. Quantitative and qualitative data were collected and analyzed perceptions of preparedness, clinical confidence, and educational experiences.

Results

With a 37% response rate, 100% of participants indicated that a dedicated paediatric module delivery prior to placement would be highly beneficial. Furthermore, 76% considered a five-day rotation insufficient for a comprehensive introduction to practice. Significant confidence deficits were identified regarding the application of distraction techniques, age-appropriate communication methods, and technical exposure optimisation. However all participants declared higher levels of confidence in performing paediatric imaging following this placement.

Conclusion

Findings advocate for greater 'pedagogical scaffolding', where paediatric-specific knowledge is embedded more robustly throughout the four year undergraduate curriculum. Redesigning curricula to include earlier exposure, increased focus on adaptation of techniques and principles for all patient types, and simulation-based learning is vital to enhance student confidence, preparedness, and the overall quality of specialist clinical placements.

P202 The Post-Exenterative Pelvis: A radiological pictorial review of complications and institutional experience from a UK tertiary Centre

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Background

Pelvic exenteration offers a curative-intent pathway for locally advanced or recurrent pelvic malignancies. The radical nature of this surgery often involving multi-visceral resection, lymphadenectomy, and complex reconstruction creates a uniquely challenging environment for post-operative radiological assessment.

Purpose

To review and illustrate the spectrum of early and late-phase complications following pelvic exenteration drawing on the experience of a high-volume UK tertiary cancer centre.

We performed a retrospective review of cases identified through our institution's multidisciplinary team (MDT) outcomes. We utilised multi-modality imaging (primarily CT and MRI) to demonstrate the distinction between expected post-surgical change and true pathology.

We categorised complications into following categories: Collections (we highlight the role of imaging including DWI to distinguishing simple seromas from complex, rim-enhancing abscesses); Reconstructive failure (we demonstrate radiological appearances of pelvic floor dehiscence particularly in the context of myocutaneous flap failure or herniation; Complex fistulae (urethro-perineal, entero-cutaneous); Osteoligamentous Injury (sacral insufficiency fractures frequently masked by radiotherapy-induced marrow change and the progression of pelvic sepsis to discitis); Urologic Injuries (demonstration of urinary leaks); Vascular and Thromboembolic events.

Summary of Content

Understanding the radiological nuances of the post-exonerative pelvis is vital. A structured approach to imaging, recognising the specific signatures of complications is essential to allow for timely intervention and prevent long-term disability in this complex patient cohort.

1. Aziz, O, Clifford, R.E, Maudsley, J and Sutton, P.A. (2025). A systematic review of oncosurgical and quality of life outcomes following pelvic exenteration for locally advanced and recurrent rectal cancer. *The Annals of The Royal College of Surgeons of England*, 107(1), pp.2-11. <https://doi.org/10.1308/rcsann.2023.0031>
2. Beets, G.L, Lambregts, D.M.J., Nougaret, S. et al (2024). Imaging in pelvic exenteration—a multidisciplinary practice guide from the ESGAR-SAR-ESUR-Pelvex collaborative group. *European Radiology*. <https://doi.org/10.1007/s00330-024-10940-z>
3. Bizzarri, N., Querleu, D., Ricotta, G et al (2025). Complications And Recurrence After Pelvic Exenteration For Gynaecologic Malignancies: Survival Analysis From The COREPEX Study. *International Journal of Gynaecological Cancer*, 35, p.100285. <https://doi.org/10.1016/j.ijgc.2024.100285>.

P203 Standardised medical imaging request and contrast consent forms to enhance clinical learning in radiography education

[Don Nocum¹](#), [Dr Dania Abu Awwad¹](#), [Professor Warren Reed¹](#)

¹The University of Sydney, Camperdown, Australia

Introduction

Diagnostic radiographers must accurately interpret medical imaging request forms and associated documentation to perform safe and appropriate examinations.(1,2) This study describes the development and integration of standardised Medical Imaging Suite (MIS) Request and Contrast Consent Forms into undergraduate and postgraduate radiography curricula. These forms were embedded into tutorials, simulations, practical classes, and Objective Structured Clinical Examinations (OSCEs) to prepare students for authentic documentation tasks and reinforce high standards of clinical practice.

Methods

Open-source request forms (n = 30) and contrast consent forms (n = 6) were collected from Australian radiology providers. Key field components were analysed using qualitative content analysis to identify essential elements, which informed the design of standardised MIS forms for education.

Results

Forms were sourced from 25 providers. Recurring fields included patient demographics, examination type, clinical history, and referrer details, which were incorporated into the MIS templates. Pregnancy checks appeared in only seven request forms but in all six contrast consent forms. All contrast consent forms included background on contrast injection, potential risks, and screening for renal disease and diabetes. Additional conditions screened included asthma (n = 5), thyroid disease (n = 4), and cardiac issues (n = 3). These findings informed two educational tools (Figure 1) with enhanced clarity, safety prompts, and structured content.

Conclusion

Standardised MIS forms modelled on real-world documentation provide authentic, structured learning resources. Their integration strengthens student competencies in documentation, communication, and clinical reasoning, and offers a scalable model for wider adoption to support clinical preparedness in radiography education.



THE UNIVERSITY OF
SYDNEY

LOCATION

MEDICAL IMAGING SUITE
310-318

D18 – SUSAN WAKIL HEALTH BUILDING
(SWH8)

THE UNIVERSITY OF SYDNEY
CAMPERDOWN, NSW 2050

CONTACT

PHONE:
123-456-789

DISCLAIMER:
THIS IS **NOT** A LEGAL
MEDICAL IMAGING
REQUEST FORM.

DO NOT USE THIS FORM
TO REQUEST OR
PERFORM ANY MEDICAL
IMAGING EXAM.

**FOR EDUCATIONAL
PURPOSES ONLY.**

MEDICAL IMAGING SUITE REQUEST FORM

PATIENT DETAILS

Full Name: _____

Date of Birth: ____/____/____ Gender: ____

Medical Record Number (MRN): _____

EXAMINATION REQUEST

☐ X-ray: _____

☐ Mobile X-ray: _____

☐ Theatre X-ray: _____

☐ CT/ CT Angiogram: _____

☐ MRI: _____

☐ Ultrasound/Doppler: _____

☐ Mammogram: _____

CLINICAL HISTORY

Possibility of pregnancy? YES/NO LMP: ____/____/____

REFERRING DOCTOR

DOCTOR'S NAME: _____

SIGNATURE: _____ DATE: ____/____/____

1. European Society of Radiology (ESR) & European Federation of Radiographer Societies (EFRS) (2019) Patient safety in medical imaging: a joint paper of the European Society of Radiology (ESR) and the European Federation of Radiographer Societies (EFRS). *Insights into Imaging*, 10, p.45. <https://doi.org/10.1186/s13244-019-0721-y>
2. Emmerson, B.R. & Young, M. (2025) Radiology patient safety and communication. In: *StatPearls* [Internet]. Treasure Island (FL): StatPearls Publishing. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK567713/> (Accessed: 24 June 2025).

P204 A survey of radiation safety knowledge of non-radiology staff in the independent healthcare sector

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Background

Radiation safety knowledge is essential for anyone working with ionising radiation, as required by IRMER and the Ionising Radiation Regulations. Clinical X ray equipment poses risks to operators, patients, and nearby staff, particularly during X ray-guided procedures. Patients are protected through justified imaging requests, the radiographer's expertise and use of principles such as ALARP.

Method

Prior to a new training system being put in place a survey composed of 17 questions about the content of radiation safety training was made available to all non-radiology staff at an independent healthcare provider for a 2-month period. The survey was distributed via e-mail link and 367 responses were collected, accounting for roughly 5 % of clinical staff employed by the healthcare provider.

Results

A third of staff did not know how long an area was unsafe after an exposure and a quarter were unaware of the purpose of personal dosimeters. Fewer than half (49%) identified the correct safe distance for staff during portable X rays, and only 43% correctly identified the main everyday source of ionising radiation in the UK. Three quarters of staff surveyed (74%) effectively identified the core radiation safety principles.

Conclusion

The survey revealed a need for the improved training program and many had not received refresher training in over a year, with some for more than five years. Low knowledge of lead-equivalent PPE usage reinforces this need. Sampling and non-response bias, plus a 5% response rate, suggests that future studies will require a more robust data collection method

1. Department of Health. The Ionising Radiation (Medical Exposure) Regulations 2017. London: The Stationary Office.

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P205 Evaluation of communication and challenging conversation simulation for trainee advancing practice radiographers

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Background

The role of simulation in healthcare education, including radiography, is widely researched^{1,2} though research in the post registration space is comparatively limited. In other professions and disciplines, including ultrasound and radiotherapy, it is more commonplace that managing challenging conversations and breaking bad news be considered within programme design.³⁻⁶ With the advancement of practice, emphasis has shifted away from task focused activities (such as reporting) toward the holistic development of the practitioner. Professional guidance and frameworks^{7,8} set standards for advancing practitioners to develop more leadership capabilities, as well as having a more direct impact on patient care, so managing challenging conversations has become much more pertinent.

Purpose

This project involved a cohort of trainee advancing practice diagnostic radiographers from a range of different roles and levels of experience. It follows the introduction of advanced communication skills into a postgraduate programme of study, which includes simulated challenging conversations, with actors, across a range of scenarios. The evaluation, supported by organisation ethical approval, in the form of online surveys and a focus group explores the experiences and perceptions of the simulation activity, but also how it may impact the roles as an advancing practitioner.

Content

Exploring the relevant professional requirements for advancing practitioners in relation to communication skills and challenging conversations, this project will look to evaluate the integration of simulation into education and consider the importance of preparing the advancing practice workforce to provide greater impact on patient care, service delivery, and career development within a scope of practice.

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P206 From Operator to Patient: An Educational Evaluation of Virtual Reality as a Tool for Experiential Learning in MRI Education

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Introduction

Newly qualified radiographers are required to perform a range of MRI examinations. Achieving proficiency involves more than technical capability; it also requires learners to demonstrate effective person-centred care. This includes the ability to recognise, understand and appropriately support claustrophobic and/or anxious patients, who are frequently encountered in the MR environment. Consequently, pre-registration learners must be provided with meaningful opportunities to develop both technical insight and empathetic awareness.

Method

An educational session was delivered consisting of an immersive MRI-based virtual reality (VR) experience, framed by evidence-based, seminar-style teaching focused on patient experience, communication, and strategies for supporting individuals during MRI. Data were gathered using a survey comprising closed and open-ended questions, administered at both the start and end of the teaching session. Evaluation adhered to institutional review process.

Results

All participants demonstrated an increased understanding across the assessed domains having completed the teaching session. Responses indicated a clearer appreciation of both the emotional challenges faced by patients and the radiographer's role in providing reassurance and support. Feedback consistently highlighted the value of undergoing the VR experience in enhancing awareness and empathy, with the seminar content perhaps having more influence over behavioural intent. Participants regarded both elements of the session as complementary and mutually reinforcing.

Conclusion

As radiographic services face rising demand, and literature suggests radiographers may become task-focused, teaching methods that strengthen awareness of patient experience are essential. This evaluation suggests that VR, when integrated with evidence-based theoretical teaching, offers a promising educational approach for promoting person-centred MRI practice.

P207 Radiography Mindlines: Reframing knowledge creation and sharing in clinical radiography education

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Background

Diagnostic radiography (DR) education and practice are evolving rapidly, with digital technologies becoming increasingly embedded in academic and clinical settings (4). These developments are often positioned to deliver efficiencies and enhanced learning. However, research across healthcare demonstrates that clinical decision making remains dependant on human judgement informed by tacit, socially negotiated knowledge or "mindlines" (1-2). Despite this, informal and relational knowledge sharing practices in the DR clinical learning environment (CLE) remain under explored (3).

Method

An ethnographic study was conducted within a UK DR CLE. Data were generated through participant observation, field notes, and semi-structured interviews with students and radiographers. Reflexive thematic analysis was undertaken to explore how knowledge is shared and developed in this context.

Results

Two interrelated themes were identified. "Knowledge seeking and sharing practices" captures the verbal and non-verbal processes by which participants interact and negotiate the knowledge used in clinical practice. "Sociocultural conditions" highlights how various personal, social, organisational, and professional factors influence which knowledge and whose judgement is recognised as legitimate in practice. Together, these highlight the informal mechanisms which shape knowledge development in the CLE.

Conclusion

With technology at the forefront of the profession's development, there is a risk that human knowledge practices are undervalued. Using the perspective of "radiography mindlines" (3), this study reconceptualises clinical DR education, as a system of social knowledge sharing rather than a space for traditional teaching and learning.

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P208 Approach to skeletal surveys in suspected Paediatric non accidental injuries

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Background

The Royal College of Radiologists and Royal College of Paediatric and Child Health state skeletal survey in suspected Non-Accidental Injury (NAI) should be obtained and reported within 24-hours and follow-up imaging should be conducted within 11-14 days, ensuring no later than 28 days to identify previously missed fractures [1,2]. This audit was thus conducted to evaluate our local practice at Dumfries and Galloway Royal Infirmary against the recommended guidelines.

Method

Retrospective data were collected of all suspected NAI cases requiring skeletal surveys over a 5- year period (2021 – 2025) using PACS to evaluate whether the initial and follow-up skeletal surveys were conducted and reported within the recommended timeframe. The data were analyzed using Microsoft Excel.

Results

A total of 26 cases of suspected NAI had a skeletal survey during the audit period. Amongst which, 10 (38.5%) patients had confirmed NAI and of these, 8 (80%) were bony injuries, 1 scalp hematoma, and 1 foreign body (needle). Bony injuries included skull, rib(s), and various limb fractures. For the initial skeletal surveys, 25 (96.2%) were reported within 24 hours. For the follow-up skeletal surveys, 11 (42.3%) were reported within 24 hours, 9 (34.6%) were reported in >24 hours with an average delay time of 14 days (SD ±12.2), and 6 (23.1%) patients had no follow-up.

Conclusion

Our audit demonstrates good adherence of initial survey reporting with the recommended guidelines. It has also highlighted considerable delays both in conducting and reporting the follow-up surveys which is an area that requires improvement.

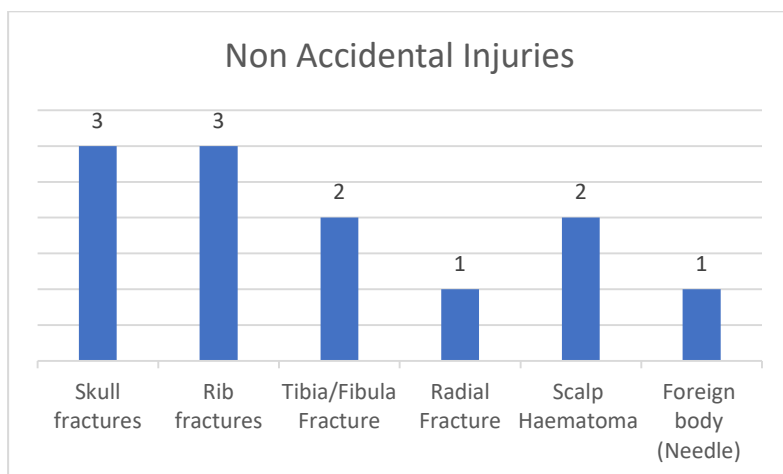


Figure 1: Types of Non-Accidental Injuries

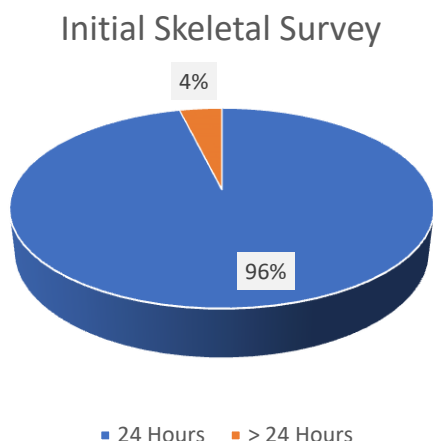


Figure 2: Initial Skeletal Survey Reporting Times

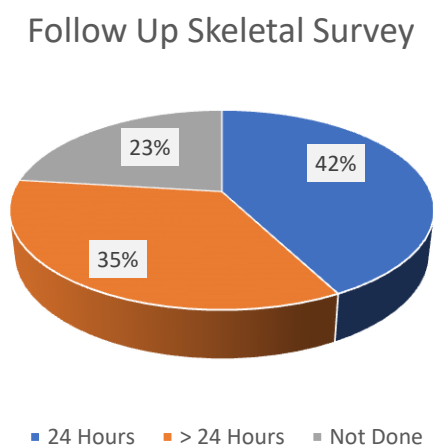


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P209 Evaluating attendance at a low-dose lung cancer screening programme: a regional audit

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Background

Lung cancer screening focuses on detecting lung cancer in its early stages before symptoms arise. This study aimed to explore the 'did not attend' (DNA) rates of individuals at their initial appointment versus 24-month follow-up, comparing multiple demographic groups, to determine which should be targeted to maximise future attendance. The target attendance rate for the audit was 93% (maximum 7% DNA).

Method

Anonymised retrospective quantitative data from phase one of a regional lung cancer screening programme was collated (22,133 individuals at the initial appointment and 17,894 individuals at the 24-month follow-up). From this dataset, data was extracted relating to categorical data on patient demographic including age, gender, ethnicity, smoking status, index of multiple deprivation (IMD), and location to compare attendance rates. Chi-squared test and logistic regression were used to determine statistical significance.

Results

Overall DNA rates were 9.4% at initial appointment, and 9% at 24-month follow-up. At the initial appointment, individuals with the highest DNA rates were those aged 56 (16.7%), black individuals (15.8%), current smokers (12.8%), the most deprived (decile group 1) (11.9%) and in one regional area (10.3%). At follow-up scans the highest DNA rates were those aged 62 (14%), mixed ethnicity (19.4%), current smokers (12.3%), decile group 1 (10.9%) and similarly, one regional area (9.7%), all exceeding the 7% DNA threshold.

Conclusion

There was little difference in DNA rates between the two time-points. However, there were statistically significant differences between demographic groups, suggesting that the groups listed above may benefit from increased support to attend screening.

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P210 A Clearer Picture: Evaluating GP Knee X-Ray Referrals, Radiological Diagnoses, and Guideline Compliance in Suspected Knee Osteoarthritis

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Objectives

This service evaluation aimed to examine GP-requested knee X-rays for suspected knee osteoarthritis (KOA), focusing on compliance with national and local imaging guidelines. The study aimed to assess the quality-of-service provision and identify areas for improvement in referral practices and overall service delivery.

Method

A retrospective quantitative review (RQR) was performed with a consecutive sample (n=363) obtained from 02/01/2024-26/01/2024 of X-ray requests received from GPs for suspected KOA. The corresponding X-ray report was assessed for confirmation of KOA and whether previous X-rays of the same knee had been performed.

Results

A high prevalence of radiographic KOA was observed, with 84.8% of X-rays confirming the diagnosis. KOA was more frequently reported in female patients (n=215, 59.3%) than male (n = 148, 44.7%). The median age of the cohort was 68.3 years. Nearly half of the patients (47.2%) had undergone prior X-rays of the same knee and among those with previous X-rays available, 87.2% had a documented diagnosis of KOA.

Conclusion

This service evaluation identified GPs are accurately diagnosing KOA in patients by clinical assessment alone; however, X-rays are being used inappropriately for confirmation, contrary to national imaging guidelines. Repeated knee X-rays are frequently used to monitor disease progression; however, changes in findings seldom lead to modifications in treatment plans and challenge healthcare resources. These practices appear to be influenced by inconsistent local imaging policies, patient expectations, and systemic barriers. Improved adherence could be achieved by revision of local imaging policies and implementation of triage tools, such as standardised community-based questionnaires.

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P211 A clinical audit on patient arm positioning during chest/Abdomen/pelvis CT scans- impact on radiation dose and image quality

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Background

Incorrect arm positioning during chest and abdominal CT can significantly increase radiation dose and degrade diagnostic image quality¹. Although there are established positioning standards, and published evidence in this area, local auditing in imaging departments is crucial to improve practice.

Method

A multicentre clinical audit evaluated radiographers' compliance with arm positioning standards during routine chest and abdominal CT examinations. 150 patients were randomly selected across two main hospital sites and community diagnostic centres of an acute NHS Trust. Practice was benchmarked against departmental protocols and national and European guidance. Dose reports and image artefacts were analysed to assess association between positioning accuracy, radiation exposure, and image quality.

Results

Optimal arm positioning was achieved in 138/150 (92%) examinations, with the 12 non-compliant cases accounting for elevated radiation doses and image artefacts. 16 and 30 patients exceeded the local (770mGy.cm) and national (660mGy.cm) diagnostic reference levels respectively², predominantly when arms were positioned within the scan field. Image artefacts were subjectively identified in 14 examinations, 12 of which occurred with suboptimal positioning. Non-compliance was more common in patients aged over 70 years, while time of scan showed no association with positioning accuracy.

Conclusion

Although overall compliance with arm positioning standard was high, even limited non-compliance was strongly associated with increased radiation dose and compromised image quality. This study identifies positioning accuracy as a critical, low-cost intervention for CT dose optimisation. Targeted staff education, structured patient preparation, and protocol reinforcement are recommended to enhance consistency and patient safety

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P212 A personal reflection on researcher development in radiography: from confused to capable

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Background

The radiography workforce at all levels is expected to engage in research (Health & Care Professions Council 2023; The Society and College of Radiographers 2022). The College of Radiographers' 2021-2026 Research Strategy (2021) advocates for radiography practitioners to have a greater role in research, yet perceived and real barriers exist which prevent individuals from getting involved. These include personal factors, such as lack of confidence and knowledge of how to get started in research, in addition to experiences of imposter syndrome (Knight et al 2025). Such barriers may discourage motivated but inexperienced individuals from research-related activities, preventing their own professional development, in addition to limiting creative and meaningful evidence-based practice in radiography.

Purpose

This work aims to reassure radiography professionals that everyone has a place in research, by encouraging delegates to undertake their own critical evaluation of their research capabilities. By sharing a personal reflective journey, the author aims to normalise uncertainty in early research careers and offer practical guidance to support professional growth.

Summary of content

The use of national frameworks and personal development planning tools to support critical reflection on research skills and capabilities will be explored. The author's personal reflection on their development as an early career researcher will be used as an example. Specifically, the Researcher Development Framework (Vitae 2010), SWOT analysis, vision boards and action planning will be considered. Delegates will be encouraged to consider how their existing transferable skills may contribute within the research pillar, including understanding, using, participating in, and conducting research.

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P213 Adherence to NICE Pneumonia Guidelines Following Chest X-ray Diagnosis: Radiology Departmental Practice and Referrer Actions

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Introduction

Pneumonia and lung cancer can share symptoms, appearing similar on a chest x-ray (Bottaro, 2025). Follow-up imaging after pneumonia is essential to alleviate sinister underlying pathology with the chest x-ray remaining the primary investigation especially for patients deemed as high risk for cancer; smokers and those over 50 (Vilar et al, 2004: NICE, 2025).

Aims

A comprehensive literature review identified four themes for discussion providing the rational, clarity and justification for this service evaluation. The aim to answer the question “As a department are we adhering to NICE pneumonia guidelines following chest x-ray diagnosis and are these recommendations actioned by the referrer?”

Methodology

Convenience sampling collected retrospective quantitative data of 384 patients from 3 referral sources (IP, A&E, GP) over 12-months from a large multisite teaching hospital. This data was analysed using descriptive statistics to determine adherence to NICE guidelines.

Findings

Of the total sample (n=384), 38%(n=144) were advised follow-up. Among these, 45%(n=85) were classified as ‘high risk’ as per NICE guidelines. Only 45%(n=38) of high-risk patients received follow-up advice, with substantial variation across referral groups possibly influenced by interim imaging. Adherence with follow-up advice varied amongst referral groups also, with clinicians often recommending follow-up despite it not being indicated in the radiology report.

Conclusion

Follow-up was advised infrequently for patients classified as high risk by NICE and was instead largely determined by referral source. Though overall incidence of cancer was low, the results suggests that there is room for improvement in follow-up recommendation consistency within the department.

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P214 An assessment on body-weight adopted P3T contrast injection protocol used in computed tomography coronary angiography studies at Harefield Hospital

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Background

Computed Tomography coronary angiogram (CTCA) requires adequate coronary vessel enhancement despite technical challenges. Personalised body weight adopted contrast protocol (P3T) facilitates the high quality imaging with low contrast volumes, even for high BMI patients reducing the risk of overestimation of contrast dose. The aim of this study is to assess the adopted contrast volume, flow rate and the coronary vascular enhancement with body weight adopted P3T contrast protocol for CTCA scans.

Method

45 sets of patients’ data from GE Revolution Apex CT scanner Unit were selected for this retrospective study following the selection criteria to avoid discrepancies. Coronary vessel enhancement (HU Values) at proximal and distal locations of main coronary arteries were recorded against patient body weight, contrast volume and flow rate. Statistical analysis was carried out to find the adequacy of coronary enhancement with body-weight adopted contrast protocol (Bayer Centargo Software system) and adopted flow rates. Further, comparison was made between the contrast volume of Bayer Medrad standard contrast protocol and P3T contrast protocol for selected BMI groups.

Results

The mean HU values for the main coronary arteries with P3T contrast injection protocol reached >350HU threshold highlighting the diagnostic significance. Contrast volume for 40-59Kg weight group was 39.31±1.98 with a flow rate of 4.07 ± 0.16 and the volume and flow rates are significantly lower compared with the Standard Contrast Protocol (45ml, 5ml/sec).

Conclusion

Body weight adopted P3T contrast protocol facilitates CTCA scans with low contrast volume for low body weight patients with comparatively less flow rate.

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P215 Analysis of SpR on-call radiology work patterns across NHS trusts in the West Midlands deanery: Implications for training, workload and AI adoption

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Introduction

Out-of-hours radiology is important to emergency care delivery but is increasingly associated with rising workload, variable supervision and trainee stress. National UK data shows significant variation in on-call supervision. International studies report sustained growth in imaging demand over the past decade. The RCR workforce census highlights annual imaging growth of 8–10%, raising concerns about sustainability, training quality and patient safety. This study evaluates SpR on-call work patterns, supervision, feedback structures and AI adoption across a UK deanery.

Method

A survey was distributed to clinical tutors across NHS trusts in the West Midlands. Quantitative data included shift patterns, scan volumes by modality and consultant support arrangements. Qualitative free-text responses explored workload, feedback mechanisms, trainee wellbeing and use of AI. Data were descriptively analysed, with thematic analysis of narrative responses.

Results and Conclusion

Seven trusts responded, representing the largest units in the region and over 80% of trainees. Reported on-call workload varied widely, particularly overnight, ranging from 1-100 examinations per shift. SpRs undertook a broad scope of practice, including acute CT, emergency MRI and basic interventional procedures. Consultant support varied from immediate onsite or remote review to retrospective reporting within 12–24 hours. Feedback practices were inconsistent in timing and structure. AI tools were in early, uneven deployment, primarily supporting triage rather than reporting, with no direct trainee use. These findings demonstrate marked inter-trust variability in workload, supervision and digital support. Standardised regional on-call guidance, enhanced feedback frameworks and carefully governed AI triage integration could improve trainee experience, wellbeing and out-of-hours service delivery.

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P216 Are final year (pre-registration) diagnostic radiography students sufficiently prepared to support autistic patients attending diagnostic imaging procedures? A qualitative study

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Background

To effectively support patients with Autism Spectrum Disorder (ASD), healthcare students must develop confidence in their knowledge and ability. Current evidence has been focused on medical students, and research involving diagnostic radiography students is very limited (Potts & White, 2024). This study aimed to investigate whether final year (pre-registration) diagnostic radiography students are sufficiently prepared to support autistic patients in practice.

Methods

A purposive sample of 12 final year MSc (pre-registration) diagnostic radiography students were recruited from a university in England. Two focus group interviews were conducted online in July 2025. The focus group transcripts were analysed using Braun & Clarke's (2021) thematic analysis.

Results

Four overarching themes were identified: understanding autism; adapting care for autistic patients; building confidence through experience and support, and bridging the gap in autism education. Participants overall knowledge was sufficient however with limited understanding of the causes and associated comorbidities. Participants understood how to adapt care by identifying a range of adaptations that could be used in clinical practice. Participants with clinical or personal experiences of autism had higher confidence levels. Participants perceived that their autism education was insufficient and recommended both formal and practical training to better prepare students for practice.

Conclusion

Current autism education and training does not sufficiently prepare diagnostic radiography students for supporting autistic patients in practice. To improve confidence and preparedness, universities should implement more comprehensive training on autism and aim to ensure all radiography students can access at least one placement site that offers exposure to autistic patients.

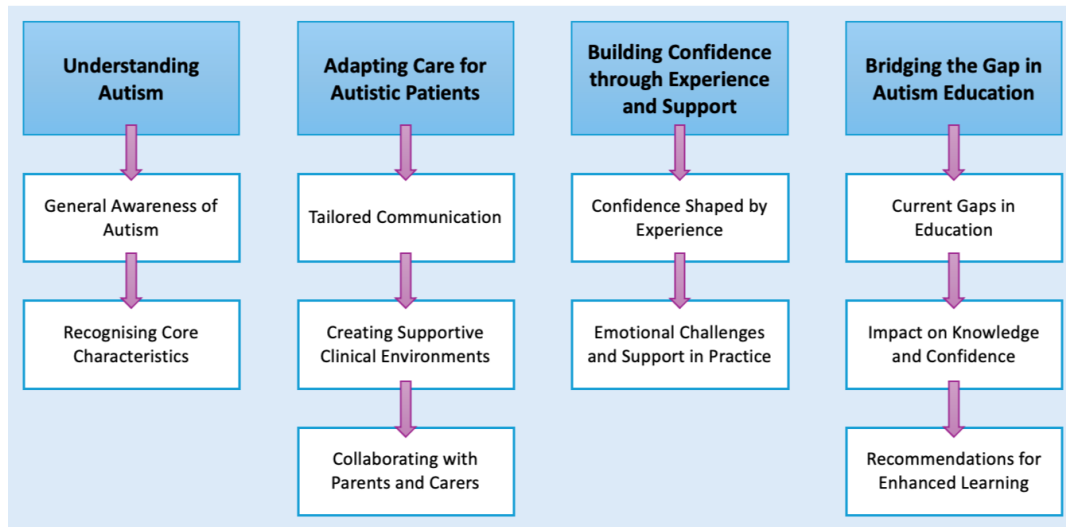


Figure 1: Thematic map of the themes and sub themes.

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P217 Assessing the Utility and Accuracy of Large Language Models in Systematic Review Screening

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Background

Systematic reviews are considered the highest form of evidence in the medical field due to the collation of data from all previously published literature to minimise bias influencing results. Large language models (LLMs) offer a solution to this problem, automating this screening process, reducing the time a systematic review takes. Previous studies have explored the use of the older ChatGPT 4.0. In this process. No study has yet analysed the latest ChatGPT 5.0 model, or compared the screening results across different LLMs to best determine the use of these architectures in medical research. This study aims to bridge this knowledge gap and further explore their use by assessing variability between accounts of the same model.

Methods

717 papers were screened by humans. The same papers were then screened by three leading LLMs: ChatGPT 5.0, Gemini 2.5 and Perplexity AI in a one-step process and the same two-step process outlined above. This process was conducted in two separate accounts for each model following a standardised prompt. Sensitivity, specificity and agreement statistics were calculated compared to human screening.

Results

No model achieved 100% sensitivity on single searches, and all models returned different results between accounts. When union scores were calculated, both Gemini 100% (74% - 100%) and Perplexity 100% (74% - 100%) outperformed ChatGPT 55% (28% - 78%) on sensitivity. Gemini outperformed Perplexity on specificity (98% compared to 85%).

Conclusion

Whilst no LLM achieved 100% sensitivity on single searches, both Gemini and Perplexity achieved this on union scores.

P218 Barriers and facilitators to engagement with the research domain among advanced practitioner radiographers: an integrative review

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Background

The Advanced Practitioner (AP) role emerged as a responsive strategy to address workforce shortages and align with service needs (Nie, 2025). APs require a high degree of autonomy to demonstrate expert clinical practice, but the specific responsibilities vary across different professions. To address the lack of standardisation, Health Education England (2017) published the multi-professional framework with guidance as to how APs could adhere to all four pillars of advanced practice: clinical practice, leadership and management, education and research. The literature has addressed how APs successfully fulfil the clinical pillar within the radiography profession, yet there is limited evidence focusing on how the research pillar is fulfilled (Harris et al., 2021; Woznitza et al., 2021). Research is essential to drive forward change and ensure continuous improvements are demonstrated in practice (Dean, 2023); therefore, it is essential that AP radiographers (APRs) successfully engage and interjoin all pillars of advanced practice.

Method

This integrative review will synthesise a diverse array of literature to establish the barriers and facilitators to engagement with the research pillar among APR's, using a mixed methods appraisal tool for critical analysis. The methodology will follow the Integrative Review Framework by Whittemore and Knafl (2005) for reproducibility and rigour.

Results

The results will be analysed, and key barriers and facilitators for research engagement among APRs working in various modalities will be discussed.

Conclusion

Recommendations to improve APRs' engagement with the research pillar and cohesion with other pillars will be presented, along with considerations for future research to improve practice.

Dean, S. (2023) 'Advanced clinical practitioners and the research pillar', *International Journal for Advancing Practice*, 1(1), pp. 42–46. doi:10.12968/ijap.2023.1.1.42.

Harris, M.A., Snaith, B., Adamson, H.K., Foster, B., and Woznitza, N. (2021) 'An analysis of advanced and specialist posts in diagnostic radiography: Do job descriptions describe advanced practice?', *Radiography*, 27(2), pp. 437–442. doi:10.1016/j.radi.2020.10.008.

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Nie, W. (2025) 'Exploring the role of advanced clinical practitioners in the UK', *International Journal for Advancing Practice*, 3(1), pp. 21–25. doi:10.12968/ijap.2024.0004.

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Woznitza, N., Pittockm L., Elliott, J., and Snaith, B. (2021) 'Diagnostic radiographer advanced clinical practice in the United Kingdom – a national cross-sectional survey', *BJR|Open*, 3(1), p. 20210003. doi:10.1259/bjro.20210003.

P219 Economic, ethical and legal implications of evidence-based practice and continuing professional development in radiography

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Objectives

There is an increasing need to engage with evidence-based practice (EBP) and continuing professional development (CPD) to effectively respond to the current healthcare demands and challenges. This review highlights barriers to applying EBP and CPD, and synthesises the economic, ethical and legal implications of EBP and CPD in radiography.

Key findings

Inconsistent application of EBP and engagement in CPD may not only result in compromised professional development and gaps in knowledge in practice, but also affect patients, healthcare services and health organisations unfavourably from an economic, ethical and legal perspective. Leaders such as managers in radiology departments may play a key role in fostering an evidence-based culture.

Conclusion

Consistent application of EBP and CPD in daily practice is beneficial to patients, professionals and healthcare organisations from an economic, legal and intellectual perspectives. Morally and ethically, although it has some conflicting views to EBP, applying an evidence-based approach may be considered a professional's responsibility to ensure the provision of prime quality care and treatment.

Implications for practice

It is crucial for radiographers to regularly engage in EBP and CPD, and for healthcare organisations and radiology managers to educate themselves on EBP and CPD, and act as knowledgeable leaders for developing, enhancing, and sustaining EBP and CPD as the norm, create an environment that facilitates and empowers staff, and support staff to appreciate the rationale for any organisational changes associated with EBP.

Ramazan, F. and Graham, Y. (2025) 'Economic, ethical and legal implications of evidence-based practice and continuing professional development in radiography: A narrative review', *Radiography*, 31(2), p. 102886. Available at: <https://doi.org/10.1016/j.radi.2025.102886>.

P220 Evaluating an MRI Pacemaker Service to Identify Opportunities for Streamlining

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Introduction

Historically, cardiac implantable electronic devices (CIEDs), including pacemakers, were considered a contraindication to magnetic resonance imaging (MRI). However, advances in both CIED technology and MRI systems mean that the majority of contemporary devices are now MR-conditional. With appropriate staff training, MRI physics guidance, and pacing team support, many patients with CIEDs can safely undergo MRI. Despite this, access to MRI for these patients may still be delayed, potentially impacting clinical care. This study evaluates the current MRI pacemaker service to identify areas for process improvement.

Methods

A retrospective review was conducted of all MRI pacemaker referrals over a six-month period. Data were collected and descriptive statistics were calculated.

Results

The mean waiting time from referral to scan for inpatients was 8 days. For outpatients, the mean waiting time was 152 days. This was reduced to 126 days when both the device and leads were MR-conditional. In contrast, patients with non-MR-conditional devices experienced a longer mean waiting time of 166 days. No referrals were rejected due to device-related factors.

Conclusion

Outpatient MRI waiting times for patients with CIEDs are prolonged, particularly for those with non-MR-conditional devices, likely reflecting the additional supervision and coordination required. The findings highlight opportunities for service improvement, and a revised radiographer-led CIED MRI pathway has been proposed to streamline the referral and scanning process. Once the revised pathway is implemented, a follow-up audit in 12 months is recommended to assess whether these changes lead to measurable reductions in waiting times.

P221 Exploring digital twinning in MRI: a systematic review of current applications, barriers and future opportunities

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Background

Digital twins - dynamic virtual replicas of physical objects - have the potential to enhance diagnostic precision, optimise interventions, and support patient-specific care, yet their impact within the magnetic resonance imaging (MRI) domain remains underexplored. This study systematically reviews how digital twinning (DT) is being applied to MRI, mapping current applications and underlining priorities to accelerate safe and sustainable implementation.

Methods

Five electronic databases were searched for original articles published between January 2020 and June 2025 that explicitly described a DT relationship with MRI. Screening and data extraction followed Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidance. Two independent reviewers screened records and extracted study-level data. A mixed qualitative-quantitative synthesis and thematic content analysis were used to identify principal application domains.

Results

After duplicate removal and full-text assessment, 51 studies met inclusion criteria. Over half of the included articles related to two main DT-MRI categories: 1) cardiac prediction, treatment and imaging; 2) cancer diagnosis and therapy optimisation. Six themes emerged: diagnosis, treatment planning and monitoring (63%); hardware, protocol and infrastructure (20%); safety and quality assurance (5.5%); operational efficiency and cost (5.5%); training and education (3%); and energy and environmental sustainability (3%).

Conclusions

Digital twinning shows substantial promise for personalised diagnosis and treatment planning in MRI, particularly within cardiology and oncology. Radiography-centred opportunities such as models for improving training, safety and operational applications remain understudied. Simulations and operational integration initiatives are necessary to expand the scope and effective use of digital twins within MRI practice.

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P222 Fiducial marker guided liver SABR - feasibility and migration rates

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Background

Stereotactic ablative radiotherapy (SABR) for primary and oligometastatic liver tumours is an established focal treatment option. Image guidance using surrogates (e.g. fiducial markers (FMs), external liver contours and surgical clips) is necessary due to poor tumour visibility on cone beam CT (CBCT) and is crucial for safe delivery of this precision treatment. This study aims to evaluate the feasibility and utility of FMs in select patients.

Method

Retrospective review of patients who had FM inserted prior to treatment. 3DCBCTs were rematched offline using external liver contours and differences in translational shifts were recorded by 3 radiographers. Migration rate was assessed by comparing position of FMs on the CBCTs to the planning CT scan. Adverse events post procedure was assessed.

Results

9 patients had FM inserted prior to treatment. A total of 45 CBCTs were reviewed offline. In 8/9 patients the inserted FMs were used as the primary surrogate for image matching. 1/9 had FMs inserted at a location deemed unsuitable for primary surrogate matching. Largest mean difference was 3mm in the longitudinal direction. For 31% of fractions, across 6 patients, the difference in shifts between FM and external liver contours match were ≥ 5 mm. FM migration was not noted in any patients. None of the patients experienced adverse events following FM insertion.

Conclusion

FMs can play an important role for tumour localisation surrogate in a select cohort of patients treated with SABR. There is less inter-user variability when matching to FMs suggesting it can be a more reliable IGRT surrogate.

P223 Hitting the Standard or Not? A service evaluation of X-ray reporting turnaround times

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Aims

The aim of this service evaluation is to evaluate local compliance of reporting turnaround times (TATs) against the national benchmark for X-ray referrals. This study provides insight into local TAT adherence within the context of the existing workforce and service structure to enable recommendations for local service improvement.

Methodology

A retrospective audit design was chosen to systematically collect the relevant and readily available quantitative data to measure our adherence to the national reporting TAT benchmarks. Purposive sampling collected all X-ray examinations performed during the first quarter of the fiscal year 2025. Data was extracted from the Computerised Radiology Information System (CRIS) and analysed in excel utilising pivot tables and charts.

Findings

The results demonstrate that the Trust is failing to meet the national reporting TATs across all five referral categories. Four of the five pathways are also breaching the 4-week NHS England priority TAT. The majority (68%) of the X-ray reporting activity was either insourced or outsourced at significant cost to the Trust, whilst still falling short of the benchmark. Radiographer reporting activity was low during the data collection period, accounting for 8% of the total activity.

Conclusion

Locally we fall significantly below the national reporting TATs for X-ray examinations. Radiographer reporting is underutilised with no protected reporting and high acquisition demand. Future recommendations include developing appropriate job plans to protect radiographer reporting, regular monitoring of the Trusts' reporting TAT against the national benchmark and perform service level demand and capacity planning.

1. NHS England (2023) Diagnostic imaging reporting turnaround times, NHS England.

2. Richards, M. (2020) Diagnostics: Recovery and Renewal – Report of the Independent Review of Diagnostic Services for NHS England. NHS England.

3. The Royal College of Radiologists (2024) Clinical radiology census report, The Royal College of Radiologists.

4. NHS Model Health System (2024) Reports by reporter type. Available at View Reports by reporter type - Imaging - Model Hospital.

P224 Introducing Situated Professional Learning Communities in Radiography: A Learning Framework for Bridging the Theory–Practice Gap

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Introduction

Radiography is undergoing significant changes and challenges, including rapidly advancing technology, ongoing role development, and increasingly quality-conscious service users that require efficient, high-quality imaging services. In response to these evolvments, radiographers are increasingly expected to engage in evidence-based practice (EBP) and continuing professional development (CPD) to effectively navigate these emerging demands.

Methods

The aim of the research was two-fold: i) to explore and critically analyse the theory of Communities of Practice (CoPs) in radiography; and ii) to develop strategies for cultivating CoPs in radiography as an alternative approach to facilitating EBP, CPD and knowledge diffusion and sharing within the profession. Observations were carried out across seven sites varying in setting (e.g., mobile units, integrated diagnostic centres) and modalities. Additionally, 30 semi-structured interviews were undertaken with radiographers, technologists, assistant practitioners, and clinical assistants.

Key findings

Although participants generally expressed awareness of EBP, most were unable to articulate its meaning, and overall engagement with both EBP and CPD was limited. Observations nor data from the semi-structured interviews revealed engagement in learning communities, or any active or established CoPs in radiography.

Conclusion

Grounded in a set of assumptions regarding the nature of learning and knowledge in a healthcare context, an alternative learning framework is proposed that is responsive to the profession's current evolvments, challenges and constraints in engaging with EBP and CPD. Building on the theory of CoPs, Situated Professional Learning Communities is introduced as a practical, context-specific approach to bridging the theory-practice gap, aligning (collective) knowledge with individual competence and practice.



Figure 6.3 Situated Professional Learning Communities: core elements and interactions

Ramazan, F., Graham, Y. and Hayes, C. (2024) 'Communities of practice: An alternative approach to bridging the theory-practice gap in radiography?', *Radiography*, 30(4), pp. 1167–1172. Available at: <https://doi.org/10.1016/j.radi.2024.05.015>.

Ramazan, F. and Graham, Y. (2025) 'Economic, ethical and legal implications of evidence-based practice and continuing professional development in radiography: A narrative review', *Radiography*, 31(2), p. 102886. Available at: <https://doi.org/10.1016/j.radi.2025.102886>.

This research is part of a PhD project that is due for submission in 2026.

P225 Radiographers attitudes towards dialogue and communication: A literature review

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Purpose

Effective communication is central to high quality radiographic practice, influencing patient experience, diagnostic accuracy, safety, and professional identity¹⁻². Despite its importance, communication in diagnostic imaging is under examined compared with other health professions. This literature review represents the first phase of a broader study exploring the cultural, educational, and organisational factors shaping radiographers' communication practices. Its purpose was to synthesise existing evidence on radiographers' attitudes toward communication and dialogue, and to identify gaps informing future practice, education and organisational strategies.

Method

A structured literature review was conducted using CINAHL, MEDLINE, and PubMed. Search terms combined radiographer, communication, dialogue, patient interaction, professional identity, education, and culture using Boolean logic. Data was analysed thematically to identify recurring concepts influencing communication attitudes and practices.

Results

The literature identifies multiple interconnected factors shaping radiographers' communication practices. Communication is widely recognised as essential to patient care, it is frequently positioned as secondary to technical tasks within high-pressure, task driven imaging environments. Effective communication is shown to reduce patient anxiety, improve cooperation, and enhance image quality. However, strong technical professional identities, interprofessional role ambiguity, inconsistent educational preparation, and organisational pressures such as workload and throughput targets limit meaningful dialogue. Clinical role modelling frequently reinforces these norms, while mentorship and communication training remain poorly integrated.

Conclusion

Radiographers' communication practices are influenced by complex cultural, educational, and organisational factors rather than individual capability alone³. Integrated strategies aligning education, workplace culture, and organisational priorities are required to embed communication as a core component of radiographic practice.

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2. J. Turner, K. Pettit, B. Buente, A. Humbert, A. Perkins, J. Kline (2016) Medical student use of communication elements and association with patient satisfaction: a prospective observational pilot study *BMC Med Educ*, 16 150

3. H.K. Adamson, B. Chaka, K. Hizzett, J. Williment and J. Hargan (2023) An exploration of communication skills development for student diagnostic radiographers using simulation-based training with a standardised patient: UK-based focus-group study *J Med Imag Radiat Sci*, 54 (3) 465-472.

P226 The challenges faced by Radiographers undertaking research within a non-academic clinical environment

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Background

The Society of Radiographers' research strategy seeks to enhance research engagement/output across all levels of radiography practice by building research capacity; thereby improving imaging services and patient care (Strudwick et al., 2021). Similarly, the NHS Fit for the Future 10 Year Plan identifies research as "business as usual", highlighting that hospitals actively engaged in research deliver better patient care (NHS England, 2024). Traditionally, clinical research is undertaken in partnership with academic institutions or other formal sponsors; essential for ethical oversight and dissemination of findings through publication.

Purpose

A group of diagnostic Radiographers faced many challenges when attempting to undertake practice-improving research in a non-teaching clinical hospital. Key barriers included the absence of internal financial support, requiring reliance on external funding; lack of protected research time outside of clinical duties; and a complex ethical approval process. This was caused by neither audit nor research departments identifying whether the project fell within their remit, leading to delays. While seniority allowed some flexibility with time management, these constraints would pose significant limitations for junior staff. Furthermore, the absence of an academic sponsor restricts opportunities to publish findings.

Summary of content

In non-academic clinical environments, the absence of a formal sponsor, protected time and funding, significantly restricts research activity, limiting Radiographers to audits or service evaluations only, diminishing enthusiasm and capability to undertake more innovative research. Despite national strategies promoting research engagement, diagnostic Radiographers working outside academic environments continue to encounter substantial structural and organisational barriers when leading research to improve clinical practice.

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P227 Towards mapping equity, diversity, and inclusivity trends in Radiography and Medical Radiation Science Research: A bibliometric analysis study

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Background

Equity, Diversity, and Inclusion (EDI) are recognised as essential to high-quality healthcare and research. Persistent disparities in healthcare access, workforce representation, and research participation affect marginalised groups, influencing evidence-based practice and policy. Biases within research and publishing may also influence how EDI issues are disseminated. Despite growing emphasis on EDI, its scope within Radiography and Medical Radiation Science (MRS) literature has not been systematically examined. This study presents a bibliometric analysis of EDI-related literature in radiography and MRS journals.

Methods

A bibliometric analysis was conducted of studies reporting EDI concepts between 2014–2024 across seven core Radiography and MRS journals. Metadata were extracted from Web of Science and analysed using Bibliometrix (version 4.4.1) to evaluate publication trends, keywords, and thematic patterns.

Results

Of 7,311 publications screened, 120 met inclusion criteria. EDI-focused research in Radiography and MRS journals commenced in 2015 and peaked in 2018, aligning with healthcare-wide initiatives promoting EDI. Output varied across journals, with Radiography and the Journal of Medical Imaging and Radiation Sciences contributing disproportionately (Table 1). Keyword analysis revealed a focus on 'education', 'patient care', and 'experiences', while 'gender diversity', 'autism', and 'lgbtq+' remained underrepresented. Most publications were concentrated within limited but notable research networks within the Radiography community (Figure 1).

Conclusion

EDI research within Radiography and MRS has increased over the past decade. However, outputs remain concentrated within a limited number of journals and research networks. These findings highlight the need for broader EDI research and more sustained engagement among researchers to strengthen inclusion and representation.

Table 1: Ten-year trend of EDI publications across journals.

Year	Journals							Total publications/ year
	JMIRS	JNMT	JRP	Radiologic Technology	tipsRO	JMRS	Radiography	
2014	0	0	0	0	N/A	0	0	0
2015	0	0	1	0	N/A	0	2	3
2016	2	0	0	0	N/A	0	4	6
2017	0	0	1	0	0	1	1	3
2018	4	0	0	6	0	0	9	19
2019	4	0	0	1	0	0	0	5
2020	3	0	0	3	0	0	7	13
2021	5	2	1	1	0	0	3	12
2022	6	1	0	2	0	2	3	14
2023	10	0	1	0	1	1	9	22
2024	11	0	1	0	1	0	7	23
Total Eligible articles	46	3	5	13	2	4	47	120

Journal of Medical Imaging and Radiation Sciences (JMIRS), Journal of Medical Radiation Sciences (JMRS), Journal of Nuclear Medicine Technology (JNMT), Journal of Radiotherapy in Practice (JRP), and Technical Innovations and Patient Support in Radiation Oncology (tipsRO).

Fig. 1: Research networks on EDI publications

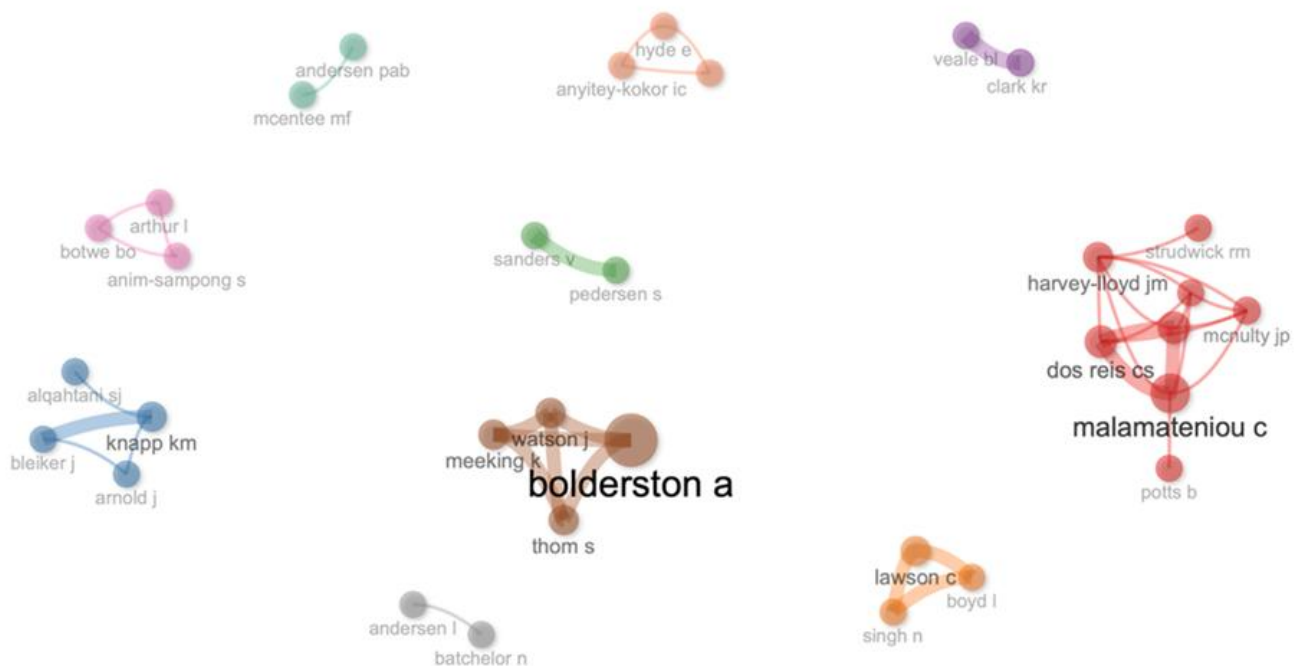


Fig. 1: The size of the edge represents the strength of the collaboration between authors, and the size of the node represents the frequency with which the author is cited in the network

Agyenim-Boateng, O., Rogers, C., Hancock, A. and Akudjedu, T.N. (2025) 'Equality, diversity and inclusivity dynamics and commitment profiles of comparator clinical radiography and related medical radiation science journals', *Radiography*, 31(3), p. 102949. <https://doi.org/10.1016/j.radi.2025.102949>

Hancock, A., Precht, H., Ryan, M.-L., Ekpo, E., Jimenez, Y. and Akudjedu, T.N. (2024) 'Towards building a culture of equality, diversity and inclusivity across radiography research: a foundational template by the Radiography EDI working group', *Radiography*, 30(1), pp. 123–124. <https://doi.org/10.1016/j.radi.2023.10.012>

Hattery, A.J., Smith, E., Magnuson, S., Monterrosa, A., Kafonek, K., Shaw, C. et al. (2022) 'Diversity, equity, and inclusion in research teams: the good, the bad, and the ugly', *Race and Justice*, 12(3), pp. 505–530. <https://doi.org/10.1177/21533687221087373>

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P228 Vitamin D Deficiency in Healthcare Professionals: Evidence and Potential Implications for UK Diagnostic Radiographers

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Background

Vitamin D deficiency is a global public health concern and is linked to increased morbidity and mortality. Lifestyle and behavioural factors are highly impactful on vitamin D rates, with sunlight exposure a predominant factor. Diagnostic radiographers have a variety of occupational risk factors that limit sunlight exposure, including indoor/shift working - potentially increasing their risk of deficiency.

Method

A narrative review was undertaken to explore vitamin D status among diagnostic radiographers and healthcare professionals. An electronic search was performed in Medline, British Nursing Index (BNI), and EMCARE from inception to January 2025. For descriptive comparisons, weighted mean deficiency rates were calculated to account for differences in sample size. Due to a lack of homogeneity and variations in results, Welch ANOVA and Welch-adjusted t-tests were performed, with post hoc analysis with Games-Howell tests.

Results

Forty-seven studies were included. Healthcare workers were found to have high incidences of vitamin D deficiency regardless of job role and geography. Deficiency was most notable in Asia at 88% (65-100%) or within the subtropical latitudes at 90.46%. There were no significant differences found between different professions. Only one study specifically reviewed diagnostic radiographers in the USA. Findings are impacted by inconsistent testing methods and definitions of vitamin D deficiency.

Conclusion

Vitamin D deficiency is highly prevalent amongst healthcare workers internationally, with consistently elevated rates observed across professional groups and geographic regions. Evidence specific to diagnostic radiographers is limited and warrants further investigation considering the occupational factors (e.g. Including indoor/windowless environment), heighten this risk.

P229 Where the bodies are buried: localisation markers in foreign body detection radiography

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Plain radiography is a valuable diagnostic tool in soft tissue foreign body detection (FBD), a common cause of presentation to emergency department. Features of soft tissue penetration and residual foreign body may be subtle so rely on a carefully trained eye for detection. Localisation markers (LMs) in plain radiography describe radiopaque fiducials; visual aids for radiologists to identify subtle signs of soft tissue injury, and add weight to clinical relevance of non-specific findings which may lack clinical consequence if not directly considered in relation to the foreign body. The aim of this study is to assess compliance with use of LMs in the acquisition of appendicular radiography FBD in ED of large trauma centre.

A standard of 100% compliance with use of LMs in FBD was implemented. The first 100 imaging requests in inclusion period referencing key words "foreign body" and "foreign bodies" in referrals were assessed. Results audited against standard suggested by Royal College of Radiologists.

Results demonstrate 60% compliance with LMs in FBD, leaving scope for improvement in emergency radiography acquisition.

LMs are essential in identification of subtle indicators of soft tissue penetration and sites of residual foreign bodies, and pivotal in assessment of clinical significance of these radiographic findings. FBD is a common cause of ED referral, so essential that studies meet high standard set by Royal College of Radiologists to facilitate clearer, more confident reporting. While the standard has not been achieved for use of LMs in FBD, the results present opportunity to improve patient care.

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P230 Closed-loop audit on improving turnaround times of CT scans outsourced to teleradiology

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Background

Whilst teleradiology can support overstretched services, inadequate interoperability between different information systems can create delays. RCR standards for the provision of teleradiology require “systems in place for rapid image transfer/review”, “the results communicated and integrated into the hospital's RIS/PACS/EPR in a timely manner” and providers be “subject to the same governance framework”.

Methods

5582 and 6888 consecutive CT scans requested for suspected acute head/neck injury outsourced between April/2022–April/2023 and May/2023–May/2024 were retrospectively audited against NG232. System improvements were introduced midway through cycle two. Timestamps extracted from RIS and provider databases were analysed on R (RStudio2022.12.0+353).

Results

In cycle one, although 88% of scans were reported within 1 hour of study upload, when upload and report download times were included, only 34% of scans had a clinically available report within 1 hour of scan ending. Median turnaround time was 74 mins. The hospital and provider utilising different incompatible PACS necessitated manual requests and report transfers: study upload and report download contributed 22 and 11 mins median.

In cycle two, PACS centralisation enabled the teleradiologist to report from the hospital PACS and request tickets were automatically sent at scan completion. Median upload time halved to 11 mins, download decreased to below 2 mins and median turnaround decreased to 58 mins. Turnaround compliance improved to 53%, with 66% of scans meeting standards post-intervention compared to 39% pre-intervention.

Conclusion

Siloed information systems contribute substantially to turnaround delays. Collaborative auditing and improved interoperability between hospitals and teleradiology providers are essential to optimising reporting performance.

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P231 Are head and neck cancer patients driving radiotherapy admissions? Trends, length of stay and preventable factors

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Background

Unplanned hospital admissions during radiotherapy disrupt cancer treatment, strain healthcare resources, and negatively impact patient outcomes. At University Hospitals of Leicester (UHL), radiotherapy services are under increasing demand. Over a 12-month period, data showed that the highest number of inpatient admissions and Length of Stay, during radiotherapy, came from head and neck cancer patients — especially those with oropharyngeal and mandible cancers.

Aim

By looking at admission trends, length of stay (LOS), and possible preventable factors, this project aims to better understand how these patients are using hospital services and where improvements could be made.

Outlier

- Tumour Group- Mandible
- Ethnic Origin- Asian/Asian British Indian
- Length of Stay (LOS)- Significantly longer than average
- Patients in this group showed a clear pattern: a longer average hospital stay during radiotherapy and a higher likelihood of requiring inpatient care.

Prevention Discussion

A significant contributing factor is severe oral mucositis, a common and debilitating side effect of head and neck radiotherapy. Given the high risk of mucositis in the Outlier group, targeted interventions are critical. One promising approach is Photobiomodulation Therapy (PBM): A non-invasive, evidence-based treatment using low-level lasers or LEDs to reduce severity and incidence of oral mucositis. Recommended in international guidelines for head and neck cancer patients receiving radiotherapy.

Recommendations

- Continuing use and Audit of Photobiomodulation Therapy (PBM)
- Consistent Patient Performance Review throughout to identify patients at risk of treatment-related complications early.
- Embed smoking/alcohol cessation support into the radiotherapy pathway.
- Oral Care Protocols: Strengthen adherence to oral hygiene and mouthcare guidelines, regularly audit compliance and effectiveness

*Please note, this is an active project.

P232 Are Remote Radiographers a Viable Solution to Alleviating MRI Bottlenecks?

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Background

MRI services in the NHS face unprecedented pressure, with over 1.6 million patients awaiting scans, leading to delays in diagnosis, treatment, and worse patient experience. Contributing factors include limited scanner numbers, underutilisation of equipment, workforce shortages, and variable service organisation. Remote MRI scanning – where senior radiographers operate or supervise scanners offsite while appropriately trained onsite staff manage patient preparation – has been implemented internationally, extending operating hours, increasing scan throughput, and maintaining patient safety. Emerging UK evidence suggests this model may help reduce diagnostic bottlenecks.

Purpose

The poster explores the potential role of remote radiography in MRI delivery. It examines staff roles, patient safety, human factors, and IT governance, illustrating how these considerations may influence scanner utilisation, operating hours, and patient access in NHS imaging services.

Summary of Content

UK and international examples are reviewed, including a 2025 UK pilot at Imperial College Healthcare NHS Trust, which reported increased scan throughput, reduced waiting times, and increased patient satisfaction without observed adverse events. Workflow models, extended-hour scanning, cognitive workload considerations, cybersecurity safeguards, and integration into clinical systems are explored. Parallels with flexible approaches in other areas of healthcare highlight the benefits of adaptable, patient-centred models. The poster further illustrates key considerations for the safe and effective implementation of remote radiography, while maintaining high-quality, patient-focused care.

P233 Closing the loop: Operationalising guidance for critical and urgent imaging findings

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Background

Failures in the communication and actioning of critical, urgent and significant imaging findings remain a recognised patient-safety risk across UK services. National guidance from the Academy of Medical Royal Colleges (Colleges, 2022) provides clear expectations, yet implementation and assurance vary between organisations, particularly across distributed or mixed-provider imaging models.

Purpose

To describe a practical, scalable approach to embedding national guidance for critical, urgent and significant imaging findings, with a focus on governance, assurance and continuous improvement.

Summary of Content

A standardised organisational policy was developed, defining categories of critical, urgent and significant findings with explicit responsibilities, escalation pathways and acknowledgement timelines. The model integrates reporter actions, administrative coordination and referrer confirmation into a single fail-safe process applicable across modalities and service configurations.

Assurance is achieved through 100% capture of relevant cases, structured documentation and quarterly review via formal governance committees. Reporting-group and modality-level outputs are reviewed alongside acknowledgement performance, enabling trend analysis, targeted feedback and early identification of system pressures. The process has been refined through routine audit, professional standards oversight and external scrutiny, demonstrating resilience in real-world conditions.

This educational case study highlights how clear role definition, proportional escalation and regular audit can translate national guidance into day-to-day clinical practice. Supporting patient safety, professional confidence and organisational assurance, and is transferable to other imaging providers and NHS Trusts seeking to strengthen their management of critical imaging findings.

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P234 Enhancing autism-friendly MRI in clinical settings: addressing challenges and implementing adjustments

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Background

Autistic individuals experience well-documented barriers in healthcare, including diagnostic imaging, due to sensory sensitivities, communication differences and anxiety related to unfamiliar environments. Magnetic Resonance Imaging (MRI) presents particular challenges because of loud acoustic noise, confined spaces and the requirement for prolonged stillness. These factors can lead to increased distress, motion artefact, scan intolerance, non-attendance and reliance on sedation. Improving accessibility within MRI services through reasonable adjustments is therefore essential to support equitable care, optimise image quality and align practice with equality legislation and person-centred care principles.

Purpose

This poster aims to raise awareness of the challenges autistic patients may experience during MRI examinations and the implications for effective imaging practice. Learning outcomes include recognising common sensory and communication barriers, understanding their impact on patient experience and scan success, and identifying practical, evidence-based reasonable adjustments. The poster supports clinical practice by promoting inclusive MRI pathways that reduce anxiety, improve patient tolerance and enhance diagnostic outcomes.

Summary of content

The educational poster based on service delivery summarises key autism-related healthcare challenges relevant to MRI practice, supported by current literature. It presents practical reasonable adjustments applicable within MRI departments, including environmental adaptations, personalised communication strategies and improved patient preparation. A visual, step-by-step MRI guide demonstrates how structured pictorial resources can support understanding and reduce anxiety. Clear organisation using tables and figures facilitates accessibility, rapid knowledge transfer and immediate clinical application, supporting imaging professionals to deliver safe, efficient and autism-inclusive MRI services.

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P235 Impact of imaging service provision within remote communities: A case study

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Background

The UK has several remote populations including Orkney, with no permanent MRI scanner on the island. To undergo a scan patients must travel to mainland UK. This presents challenges for trust both logistically and financially. In June 2025 Compleo health worked with NHS Orkney to deliver and provide a long-term MRI system. This study will demonstrate the impact the provision of this scanner has had to the population of Orkney in respect of the accessibility for the patients and their experience, the financial impact and the efficiency of the equipment.

Method

Review was completed of patient feedback, satisfaction and scanning numbers over a six month period.

Results

Between June-Dec 2025, the service scanned a total of 535 patients (642 areas), including 27 inpatients and 87 contrast examinations. Prior to the service commencing MRI imaging would require a day's worth of travelling for the patient at a cost of approximately £450 per person (£1000 if they had an escort). There is also the potential expense of needing accommodation if required. If every patient travelled without an escort, the service has save over £240,000 based on the scan volumes presented.

Conclusion

The outcome of the service going live is that the waiting list has reduced dramatically compared with the hospital where the patient would travel to. Patient feedback indicates 100% of patients say it has improved their access to care, was preferable to travelling to the mainland and that they felt less stress and anxiety.

P236 Inter-room variability in hip and pelvis radiography: A diagnostic radiography apprentice-led service evaluation mapping dose and image quality variation to modifiable practice

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Background

UK demand for hip and pelvis projectional radiography is high and increasing. Practice-level evidence on dose variability is limited; most studies are experimental or do not interrogate modifiable practice. Locally, inter-room dose variability warranted investigation. This apprentice-led service evaluation aimed to identify modifiable contributors to dose area product (DAP) and image quality (IQ) variation within organisation to support patient-centred imaging and inform service improvement actions.

Method

Retrospective service evaluation of all 2024 hip and pelvis examinations, stratified by protocol. Primary metrics: DAP, exposure index (EI), and reject rate (RR). A stratified anteroposterior (AP) pelvis subset underwent image review to populate additional metadata (e.g., true projection, abdominal thickness, metalwork) with visual grading analysis (VGA) by reporting radiographers (n=3). Non-parametric tests assessed differences, and VGA agreement was determined using the intraclass correlation coefficient (ICC).

Results

DAP distributions differed by location and detector configuration ($p < 0.001$). Automatic exposure control (AEC) strategy influenced exposure consistency for AP pelvis: with AEC-on, cranial orientation maintained EI within manufacturer target, whereas caudal orientation did not; with AEC-off, EI variability was significantly wider. Source-to-image distance (SID) conformity varied by location and protocol. RR varied most for AP pelvis ($p < 0.001$). VGA agreement was excellent (ICC=0.945). At kVp ≥ 95 , IQ degraded with increasing abdominal thickness ($p < 0.001$).

Conclusion

Operational variability (AEC strategy, SID, kVp) contributed to differences in DAP and IQ. Findings will be used with the local dose reduction and education teams to develop targeted educational interventions and a re-audit cycle to assess impact on IQ, DAP, and RR.

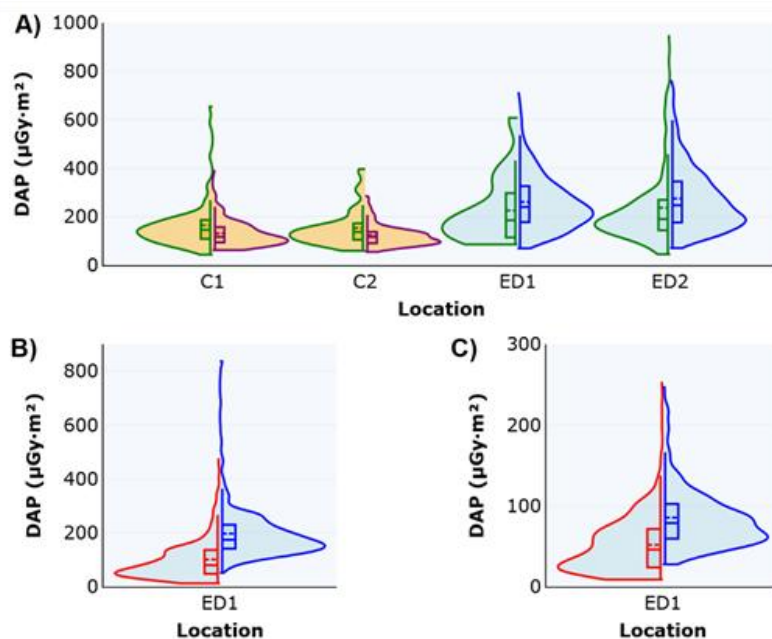


Figure 8.4. DAP composite split-violin- and box-plots by protocol, room, and auxiliary.

DAP distributions for (A) HBL hip, (B) AP pelvis, (C) AP hip, with locations colour-coded: S1-ED (Blue), S2 (Orange). Rooms are ordered alphabetically. Violin-halves are colour-coded: wallstand (Green), table (Red), free-detector with SkyFlow (Purple) or static grid (Blue), and show Gaussian KDE truncated to DAP range. Box plots show Q1–Q3 (box), median (solid line), mean (dashed line), and whiskers at ± 1.5 IQR.

P237 Managing intrafraction prostate motion during SBRT at no additional cost using triggered imaging

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Background

Intrafraction prostate motion during radiotherapy can be significant and may adversely affect outcomes. This study aimed to utilise Varian TrueBeam's Triggered Imaging functionality to detect and correct significant intrafraction prostate motion during stereotactic body radiotherapy (SBRT) in patients with implanted fiducial markers.

Method

A two-phase study was performed. Firstly, the development phase, comprising of eleven patients, corrected displacements $>5\text{mm}$ and collected data to develop an optimal correction protocol. The second, evaluation phase, refined that protocol and applied to five additional patients. Cone-beam CTs (CBCT) were used for initial positioning. Planar kV images were acquired periodically during treatment delivery. If any fiducial marker moved by more than the acceptable threshold; treatment was manually interrupted, another CBCT acquired, patient positioning corrected, and treatment resumed. This was repeated for each fraction. Retrospectively, fiducial displacements and fraction duration data were collected to inform an acceptable fiducial displacement threshold, taking into account the impact on treatment length. This displacement threshold was applied in the Evaluation Phase.

Results

Sixteen patients were included, totalling 80 fractions. Corrections to prostate positioning were made in 21% of fractions due to intrafraction motion. Fractions were, on average, 5 minutes longer when interventions were made. The optimal threshold without extending the treatment slot was 4mm. Table 1 summarises key results from both phases.

Conclusion

Triggered Imaging on Varian TrueBeam provides an effective method for detecting and correcting intrafraction prostate motion. Implementing a 4mm correction threshold allowed a practical strategy to improve treatment accuracy with an acceptable increase in treatment time.

Table 1. Summary data from the development and evaluation phases

Parameter	Development Phase	Evaluation Phase
N. patients	11	5
N. fractions	55	25
Intervention threshold	5 mm	4 mm
Maximum fiducial displacement (mean ± SD)	3.64 ± 1.61 mm	
Planar kV image frequency	Every 3 seconds	Every 6 seconds
Number of fractions with 0 interventions	45 (82 %)	18 (72 %)
Number of fractions with 1 intervention	9 (16 %)	6 (24 %)
Number of fractions with 2 interventions	1 (2%)	1 (4 %)
Fraction duration, all fractions (mean ± SD)	10.0 ± 2.9 mins	11.4 ± 3.9 mins
Fraction duration with no intervention (mean ± SD)	14.5 ± 2.9 mins	14.6 ± 2.4 mins
Fraction duration with any intervention (mean ± SD)	9 ± 1.5 mins	10.3 ± 3.7 mins

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P238 Navigating Medical Ultrasound Demand in Wales: What are the solutions to create capacity?

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Background

Ultrasound is a key diagnostic tool in Wales, but rising demand, limited training capacity, and persistent workforce shortages have led to long waiting times and increased service pressures. National policy highlights the urgent need for sustainable, evidence-based strategies to expand capacity and strengthen workforce resilience.

Methods

This mixed-methods study combined a national workforce survey, semi-structured interviews with imaging leads across the UK and Ireland, and an All-Wales focus group with ultrasound leaders and policy stakeholders. Quantitative workforce modelling projected future capacity requirements, while thematic analysis explored workforce challenges, training capacity, demand management, and retention barriers.

Results

The survey revealed a significant and growing sonographer workforce deficit, with modelling indicating that, under current training and retention conditions, capacity for planned care waits will fall far short of demand by 2031. Qualitative findings highlighted interconnected challenges, including training bottlenecks, limited career progression, occupational health concerns, and inconsistent demand management practices. Stakeholders identified potential solutions, such as establishing a national ultrasound academy, creating principal sonographer roles, improving workforce analytics, standardising referral pathways, and addressing musculoskeletal injury and burnout risks.

Conclusions

The findings underscore the need for a coordinated, data-driven strategy to ensure safe, timely, and sustainable ultrasound services in Wales. Expanding training pipelines, improving retention through career development and occupational health initiatives, and adopting standardised demand management frameworks are essential for long-term workforce resilience and service sustainability.

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P239 One-Stop Scope and Scan: The risks and benefits of a same-day Colonoscopy to Computed Tomography Colonography (CTC) service model

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Aims and Objectives

This service evaluation investigates the risks and benefits of a same-day Colonoscopy to Computed Tomography Colonography (CTC) service within the "One Stop Colonoscopy and Radiology Staging" (OSCARS) pathway. A literature review identified key risks associated with CTC, which informed a mixed-methods data collection strategy focusing on patient opinions, pathway efficiency, perforation incidence, scan quality, and the ethical implications of sedation and consent.

Methodology

Symptomatic adults referred for CTC following an incomplete colonoscopy were included; bowel cancer screening programme patients were excluded. The quantitative component comprised a retrospective comparative analysis of two patient cohorts, pre- and post-service change: 2019 (N=27) and 2023 (N=29), using non-probability purposive sampling to evaluate the impact of service changes. The qualitative component involved a prospective patient experience survey conducted over 6 months (N=10), using convenience sampling to capture the patient perspective.

Results

The service change reduced overall pathway duration with no increase in perforation incidence, though the small sample size is a limitation. The rapid preparation regime was found to reduce the quality of faecal tagging, although the incidence of inadequate studies did not increase. Patients reported high satisfaction rates; however, an ethical concern emerged regarding the validity of consent obtained while patients remained impaired by sedation from the preceding colonoscopy.

Conclusion

The pathway's benefits, specifically reduced waiting times and positive patient experiences, outweigh identified risks. However, procedural changes are required to mitigate ethical risks surrounding sedation. The same-day service is a viable, efficient model for colorectal diagnostics if consent protocols are refined.

P240 Precision, Dose and Practice: A Service Evaluation of Fluoroscopy-Guided Peripherally Inserted Central venous Catheters (PICCs)

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Background

Peripherally inserted central venous catheters (PICCs) provide medium to long term venous access for therapies such as chemotherapy and antibiotics². Although fluoroscopy has traditionally been considered the gold standard for PICC insertion^{4,3}, radiation-free techniques such as intracavitary ECG are increasingly used. Evaluating current fluoroscopy-guided practice is essential to ensure patient safety, efficiency and alignment with evolving national guidance¹.

Methods

A retrospective service evaluation was conducted within a UK NHS vascular access service. Data from 45 adult patients undergoing fluoroscopy-guided PICC insertion over one month were analysed. Variables included catheter tip location, fluoroscopy time, dose area product (DAP), theatre time and operator experience. Tip position was assessed using two classification systems: cavoatrial junction (CAJ) and vertebral body unit (VBU) criteria.

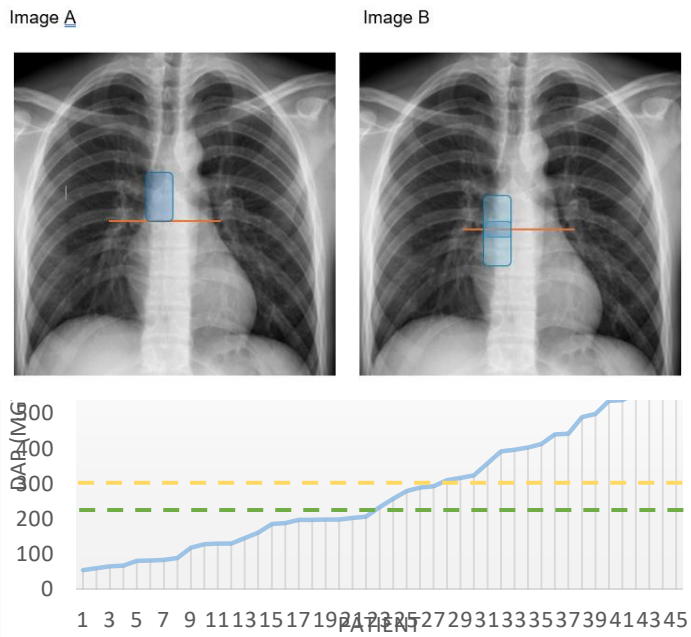
Results

Fluoroscopy-guided PICC insertion demonstrated high procedural efficiency, with a mean fluoroscopy time of 0.27 minutes and mean theatre time of 26.8 minutes. Sixty per cent of procedures were below the national diagnostic reference level for radiation dose. Tip placement accuracy was high when assessed using CAJ criteria (92% optimal or suboptimal) but significantly lower when assessed using VBU criteria, demonstrating substantial variation depending on classification method ($\chi^2 = 28.5$, $p < 0.01$). Operator performance was consistent, with minimal variation in screening or theatre time.

Conclusion

Fluoroscopy-guided PICC insertion provides a safe and efficient service with high tip placement accuracy. However, variability in tip classification criteria significantly influences reported outcomes. Standardisation of tip position definitions is recommended to improve benchmarking, training and quality assurance. Fluoroscopy remains valuable for complex vascular access.

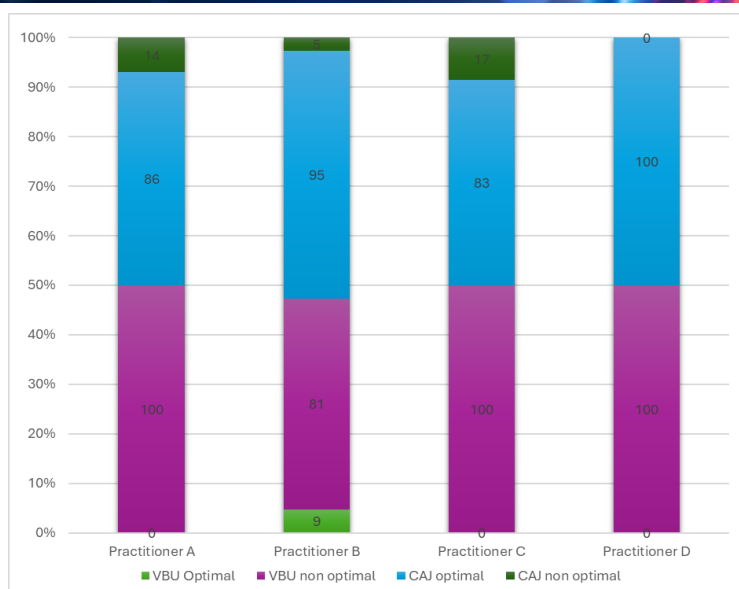
Figure 1.



Chi-square test

	VBU Accurate Patient (%) [SD]	VBU Inaccurate Patient (%) [SD]	
CAJ Accurate	36 (22.74) [7.74]	34 (47.26) [3.72]	70
CAJ Inaccurate	2 (15.26) [11.53]	45 (31.74) [5.54]	47
Totals	38	79	117 (Total)

Comparison of practitioner catheter tip accuracy by classification criteria.



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P241 Same day CT staging service following cancer positive endoscopy

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Timely staging following a cancer positive endoscopy is essential to improving patient care and experience. The Faster Diagnosis Standard (FDS) (NHS England, 2023a & b) recommends that staging investigations should be booked when the initial definitive investigation is completed. A team was set up to improve previous services by establishing a same day CT staging pathway to reduce the time from referral to diagnosis, supporting the 28 day pathway.

This poster aims to demonstrate how implementing a same day CT staging service following cancer positive endoscopy enhances pathway efficiency and aligns with Getting it Right First Time (GIRFT) principles (NHS England & GIRFT, 2023) and national standards (NHS England, 2023a & b).

UKIO participants will learn:

- How same day staging supports FDS compliance and pathway standardisation.
- Practical workflow redesign steps linking endoscopy and radiology.
- Ways imaging departments can apply GIRFT principles to strengthen cancer pathways.
- Transferable lessons for rapid access imaging models.

The poster outlines previous practice and new service design using text, workflow diagrams and checklists to illustrate pathway touchpoints and safe working practices. Data on staging timeliness, list utilisation and patient experience will be summarised, reflecting the GIRFT focus. Interdepartmental collaboration between endoscopy and radiology will be demonstrated, including how barriers were overcome. Recommendations highlight how same day staging can deliver consistent, efficient, and patient centred care aligned to national standards. PDSA audit cycle will be demonstrated showing monitoring of appropriate referral and optimal use of resources.

NHS England (2023a) Implementing a timed colorectal cancer diagnostic pathway: Guidance for local health and care systems. Version 3.2, April 2023. Publication reference: PR2119.

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P242 The use of remote MRI scanning technology in a NHS Community Diagnostic Centre

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Background

Remote MRI scanning is recognised as a developing technological solution to workforce and service pressures (1). In England, Community Diagnostic Centres have been established to increase diagnostic capacity (2). New workforce models are essential to deliver on their potential.

Methods

An innovative workforce and technology model was introduced at an NHS community diagnostic centre. This was following an extensive engagement exercise with the patient community and across the multidisciplinary team. Remote MRI scanning technology was utilised, enabling a skilled MRI radiographer to support non-complex outpatient activity, remotely 'from home' across two scanners. This new workforce model, utilised an on-site team of two Band 5 radiographers working alongside Imaging support workers, extending the working hours of the service up until midnight. An additional 20 hours of scanning capacity per week were delivered over a 12-month period. Quantitative data around service performance alongside qualitative survey driven feedback from patients and staff was analysed to assess impact.

Results

2275 additional examinations were undertaken remotely. Data analytics provided clear evidence of the service improving access for patients from the local, known to be deprived, community (Fig 1). 93% patients received their appointments within 3 weeks of initial referral. The did not attend (DNA) rate was measured at 1.2%. There were 0 MRI safety incidents. Staff feedback was positive around technology, workflow and confidence (4.5/5) with no negative wellbeing impacts.

Conclusion

A safe, accessible community MRI service is feasible utilising remote scanning technology. Further exploration is warranted in community and acute settings.

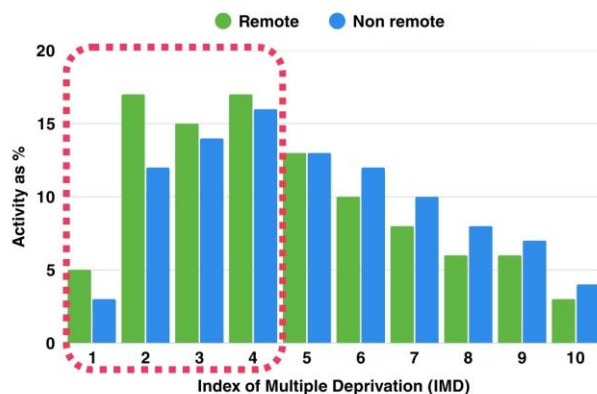


Figure 1: Data analytics assessment of % activity against Index of Multiple deprivation (IMD). NB. A lower IMD indicates a higher level of deprivation amongst that patient group

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P243 Use of Quantitative perfusion cardiac MRI modified technique working with scanner capabilities

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Background

Stress cardiac magnetic resonance (CMR) with quantitative myocardial perfusion imaging provides a comprehensive, noninvasive assessment of myocardial ischemia by enabling absolute measurement of myocardial blood flow (MBF) and myocardial perfusion reserve (MPR). This technique improves diagnostic confidence compared with visual perfusion assessment alone, particularly in patients with multivessel coronary artery disease or suspected coronary microvascular dysfunction. Following pharmacologic vasodilation, first-pass contrast-enhanced imaging is performed, with automated post-processing generating pixel-wise perfusion maps for regional and global analysis. Quantitative perfusion CMR supports accurate identification of hemodynamically significant coronary disease, guides revascularization strategies, and offers prognostic information beyond conventional imaging. Clinically, it facilitates objective risk stratification, reduces interobserver variability, and enhances detection of diffuse ischemia. With increasing availability of standardized

acquisition protocols and automated analysis, quantitative stress perfusion CMR is becoming an accessible and valuable tool in routine clinical practice for personalized cardiovascular care.

Method

Review of implementation of the Quantitative perfusion imaging delivered by Compleo Health and the impact on diagnosis of patients.

Results

Utilisation of modified technique due to gradient strength of the scanner at site. Implementation allowed for forward-looking capability that highlights our ability to remain at the forefront of cardiac imaging.

Conclusion

Case study of utilisation of scanner capability to deliver new and developing imaging techniques to aid in diagnosis of coronary disease patients.

P244 Evaluating the ONCO-RAD Reporting System in a Non-Specific Symptom (NSS) Cancer

Pathway: A cohort study

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Background

Many cancer patients present with non-specific symptoms (NSS) falling outside the NICE NG12 criteria. The NSS pathway addresses this diagnostic shortfall by providing patients with vague clinical presentations access to whole-body Computed Tomography (CT) with the aim of identifying malignancies. This study evaluated the pathway's impact and examined whether the ONCO-RAD scoring system, adapted from whole-body MRI, could effectively risk-stratify CT reports and identify clinical predictors of malignancy.

Method

This retrospective cohort study evaluated 737 eligible patients referred via an NSS framework between November 2022 and June 2025. We analysed demographic data, presenting symptoms, a series of core and optional diagnostic filter tests and CT reports. CT findings were categorised using the ONCO-RAD (1–5) malignancy risk scale, with final outcomes determined via hospital and GP records. Univariable and multivariable analyses were performed to identify predictors of a final cancer diagnosis.

Results

Of 737 eligible patients, 40 (5.4%) were diagnosed with cancer (11 genitourinary, 10 lung, 6 gastrointestinal, 5 haematological, 8 other). Univariable analysis identified older age ($p=0.025$), smoking history ($p=0.035$), and prior malignancy ($p=0.023$) as statistically significant risk factors for malignancy. Multivariable analysis revealed the number of optional filter tests was associated with a reduced risk of cancer ($p=0.045$). Cancer prevalence by ONCO-RAD category 1-5 was: 1 (0%), 2 (0.5%), 6 (2.9%), 10 (22.7%) and 22 (78.6%).

Conclusion

The NSS pathway identifies a distinct cohort of malignancies, not captured by other pathways. Standardising CT reports with ONCO-RAD provides a robust framework for urgent triage and faster diagnosis.

P245 Developing and piloting an immersive simulation training programme to enhance front-line communication skills for radiographers involved in the GP referred chest x-ray; rapid access to further imaging pathway

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Background / Purpose

Radiographers working within a Rapid Access Imaging pathway are required to communicate unexpected or abnormal findings for patients referred to Computed Tomography. Despite this, diagnostic radiographers traditionally receive limited formal training in advanced communication, including managing anxiety, addressing anger and delivering sensitive information. A training needs analysis, supported by published research, identified a significant gap in communication education for Imaging professionals and highlighted opportunities to improve patient experience and service quality. The purpose of this project was to design, develop and pilot an immersive simulation based education programme to strengthen the confidence, competence and well-being of radiographers undertaking these discussions.

Methods

A simulation faculty created a programme incorporating:

- Pre-course evaluation
- Teaching on communication theory
- A practical communication toolkit
- Actor led immersive simulation scenarios
- Facilitated reflective debriefing

The pilot session was delivered to reporting radiographers and refined based on participant feedback.

Results

Post course evaluation demonstrated marked improvements in radiographers' confidence and ability to manage challenging conversations. Participants reported enhanced communication with anxious or angry patients, increased clarity when explaining imaging pathways and greater confidence using appropriate terminology. All participants stated they would recommend the programme, and senior staff observed noticeable improvements in real world communication behaviours.

Conclusion

The immersive simulation programme improved communication confidence, patient centred practice and radiographer wellbeing. Following the successful pilot, the training is being expanded across additional sites and adapted for other clinical contexts. Early outcomes indicate meaningful improvements in patient experience and support for informed decision making.

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P246 An Investigation into the availability and utility of multilingual pregnancy status declaration forms in radiology departments

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Introduction

Language barriers in healthcare can have a significant impact on effective communication and patient safety, particularly in the radiology department, where accurate declaration of pregnancy status is needed prior to exposure to ionising radiation. Multilingual pregnancy status declaration forms are a potential solution.

Methods

An online survey was distributed to qualified diagnostic radiographers to collect quantitative and qualitative data regarding the availability, use and perceived impact of multilingual pregnancy status declaration forms.

Results

A total of 85 radiographers participated, with the majority based in Ireland (56.5%) and Saudi Arabia (37.6%). 86.7% of participants reported using written pregnancy status forms, while only 36.1% indicated that forms were available in multiple languages. Availability varied by country, with greater linguistic diversity observed in Irish departments. Respondents supported the use of multilingual forms, citing improved patient understanding, informed consent and workflow efficiency. Challenges identified were primarily logistical, such as access and staff awareness.

Conclusion

This study highlights a discrepancy between the frequency of language barriers in radiology departments and the availability of appropriate multilingual resources. Radiographers recognise the importance of language accessibility for patient safety and consent, yet a gap still exists. Expanding access to these tools and integrating them into routine practice may enhance communication and quality of care within radiology settings.

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P247 Culturally & linguistically diverse women's access to breast cancer services in Ireland – A qualitative study

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Introduction

Cultural and linguistic diversity is increasing worldwide with a significant increase in migration. Access of breast cancer services for cultural and linguistically diverse women in Ireland may impose challenges, due to many factors including lack of education, language, social and cultural factors. Breast cancer is one of the most common cancers diagnosed in women worldwide, however screening rates vary amongst populations with cultural and linguistically diverse women having lower screening rates when compared with the general population of women. This study aims to identify the gap in breast screening services in Ireland for this population of women, thereby promoting inclusiveness in breast cancer services.

Methods

Using a qualitative approach, this study aims to explore the personal perspectives of cultural and linguistically diverse women in accessing breast cancer services in Ireland, through 1:1 face-to-face online interviews.

Result

Five themes and two subthemes emerged throughout discussion which included, barriers and facilitators to accessing care, reflection on previous experience in home country, knowledge and awareness of breast cancer/breast health, knowledge and awareness of screening/health care provision in Ireland for breast cancer and breast health, and recommendations/ healthcare strategies to improve services for the culturally and linguistically diverse population. Culturally and linguistically diverse women's access to breast cancer screening and services in Ireland is influenced by a variety of factors, some favourable and others unfavourable. Raising education and awareness for culturally and linguistically diverse women around breast health and breast cancer services may lead to increased screening rates and improved outcomes for women.

P248 Developing the first practitioner led paediatric videofluoroscopy service in Wales: A novel integrated approach

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¹Betsi Cadwaladr University Health Board, Bangor, United Kingdom

Introduction

Paediatric videofluoroscopy (VF) is essential for assessing swallowing and informing feeding interventions. Previously, our Health Board delivered paediatric VF once per month on a single site, requiring some families to travel over two hours and relying on a single consultant paediatric radiologist. Rising demand, combined with national radiologist shortages, made the service fragile and highlighted the need for a sustainable alternative. This led to development of the first practitioner led paediatric VF service in Wales, using an integrated Advanced Practice Radiographer–SLT model.

Method

An options appraisal compared external commissioning with local redesign. Building on established adult VF advanced practice, Radiology and Speech and Language Therapy jointly developed an AHP led pathway. Governance included paediatric and SLT oversight, a standardised IDDSI based protocol, PGDs for contrast administration, supervised practice, and competency assessment. Retrospective audit (2022–2024) reviewed safety, image quality, and clinical outcomes.

Results

The practitioner-led model enabled expansion to a second site, improving accessibility and reducing travel. Since implementation, 145 children have been assessed, with independent peer review confirming high quality imaging and accurate reporting. Several patients avoided tertiary referral, while others were discharged following improved swallowing management. Recruitment and training of additional Advanced Practice Radiographers strengthened service resilience. Waiting times reduced to 2–4 weeks with urgency-based triage.

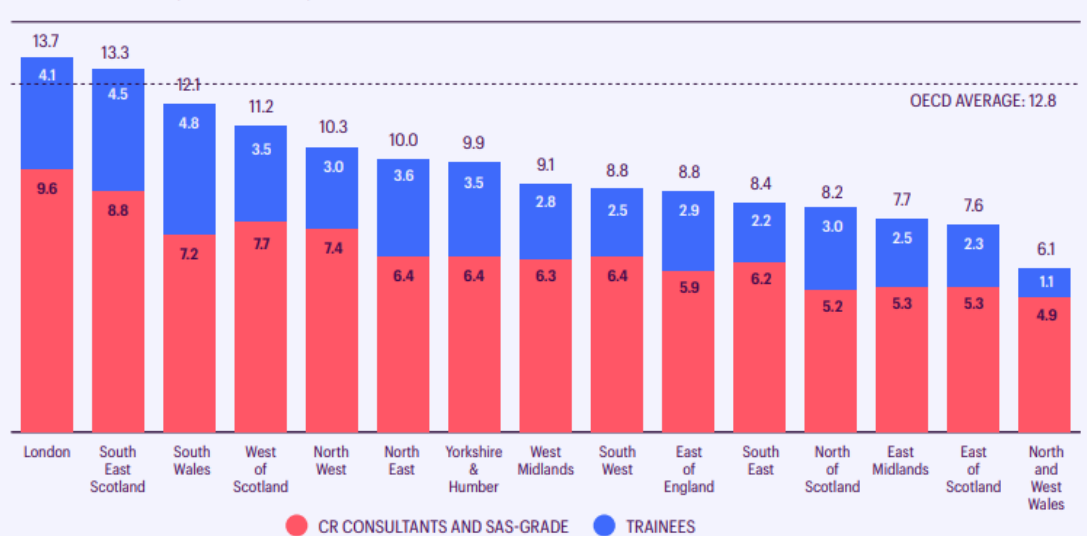
Conclusion

A practitioner-led paediatric VF model is safe and effective, demonstrating successful AHP leadership in paediatric imaging.

Implications for Practice

This first-in-Wales integrated approach improves equity of access, increases capacity, reduces travel burden, and offers a replicable solution for other Health Boards.

RADIOLOGISTS PER 100,000 POPULATION, 2023



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P249 Digital Transformation: Delivering a Safe and Sustainable cardiac implantable electronic devices (CIED)-MRI Service in a District General Hospital

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¹Inhealth Croydon NHS Trust, London, United Kingdom

Background

National recommendations have highlighted the need for safe MRI provision for patients with cardiac implantable electronic devices (CIEDs), yet a 2022 survey showed that only 53% of UK Trusts had an established pathway. Croydon University Hospital (CUH), a busy District General Hospital with a broad CIED implant portfolio, undertook an eight-year programme to develop a safe, sustainable MRI service. A significant challenge was workforce capacity: only two highly specialised cardiac physiologists (HSCPs) were available, requiring careful integration of MRI support into their existing roles. The service also transitioned from a paper-based process to a fully digital workflow within the Cerner electronic patient record system.

Methods

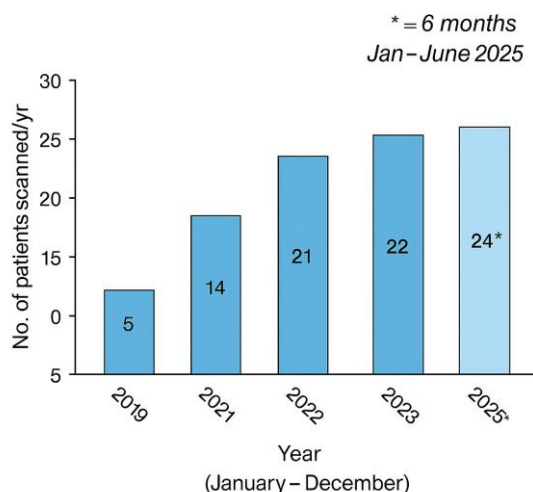
The initial Standard Operating Procedure (SOP) permitted MRI only for CUH-implanted MRI-conditional devices requiring non-urgent outpatient scans. Two monthly MRI lists were supported by HSCPs performing pre- and post-scan device interrogation and programming. The pathway later expanded to include urgent outpatients, inpatients (including very urgent cases), and patients with devices implanted at a neighbouring tertiary centre. All referrals were vetted by Radiology and reviewed by Cardiology against SOP criteria. Documentation and monitoring records were progressively migrated to Cerner to strengthen governance and efficiency.

Results

Between July 2019 and June 2025, 110 patients were scanned with no adverse events, no early terminations, and no clinically significant post-scan parameter changes. One transient battery-longevity calculation anomaly resolved within 24 hours.

Conclusions

A safe, scalable CIED-MRI service can be delivered in a District General Hospital despite workforce constraints. Digital transformation was central to long-term sustainability.



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P250 MRI scanning patients with cardiac devices when you are not a cardiac centre

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Background

Previously, having an implanted cardiac device (ICD) would automatically preclude you from being able to have an MRI scan. However, MRI conditional devices have become more commonplace, allowing access to MRI for more patients. There are challenges in running such a service, such as the need for cardiac physiologist support to interrogate the device, and setting the device to an appropriate mode for the duration of the scan. As our site has no cardiology service, this meant having to develop a process with a secondary site.

Purpose

This poster will outline the pathway developed, challenges faced and solutions to many common obstacles to providing this service.

Summary of content

This poster discusses the arrangements made with a secondary provider to supply the cardiology service, and how we have overcome some of the obstacles. We will provide a summary of the referral pathway within the institution, and the responsibilities of each part of the service to ensure a safe process is followed at all stages, and to minimise cancellations and complications on the day of the scan, including the flexibility required in emergency situations. The safety processes undertaken on the day are presented, as well as the need for appropriate equipment and how this can be streamlined, followed by the aftercare and discharge process. Finally, the poster will summarise the successes and complications of our service as well as future ideas to investigate to improve the service.

P251 Can leadership reduce errors and improve patient safety within radiology services: a systematic review exploring the evidence

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Background

Radiology presents risks to patient safety such as ionising radiation and magnetic fields. Despite legislation, guidance and standard procedures, errors still occur which are linked to human and organisational factors (1, 2). Leadership as a concept can potentially influence patient safety by creating the optimum environment and behaviours. The literature exploring how leadership can improve patient safety within radiology is limited.

Methods

A systematic review study was undertaken according to PRISMA guidelines to explore how leadership influences patient safety. Five databases were searched (including CINAHL, Psychinfo, Pubmed, Publicly Available Content Database - Proquest and Scopus) for evidence from the last 10 years (2015 – 2025), and included studies were primary quantitative and qualitative research studies examining leadership and safety within healthcare environments (not solely radiology). Quality assessment of studies was performed utilising CASP checklists.

Results

17 studies were included within the review (quantitative and qualitative studies, mostly cross sectional in design and one quasi-experimental study). Main findings showed that leadership positively influences patient safety directly and indirectly via various behaviours and mechanisms.

Conclusion

Leadership positively influences patient safety directly, or indirectly, via mechanisms such as organisational commitment, psychological safety and cooperation facilitation. Leaders should undertake leadership training, and leadership should not focus on a specific style but should incorporate behaviours that create a positive safety culture environment including support, training and education, clarifying expectations, open communication and non-punitive approaches to incidents. Further radiology specific studies with a longitudinal or quasi-experimental study design could further strengthen the findings.

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P252 The cost burden on cancer patients receiving treatment in Ghana

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¹University of Ghana/national Radiotherapy Oncology and Nuclear Medicine Centre, Accra, Ghana

Background

The global burden of cancer is rising due to increasing population and aging. Individuals diagnosed with cancer, aside from the physical burden of the disease, also experience various forms of distress, which includes financial burden. . The financial toxicity associated with cancer care in LMIC is mostly borne by patients or caregivers. The aim of the study was to evaluate the burden of cost on cancer patients undergoing treatment in Accra, Ghana.

Method

The study adopted a descriptive cross-sectional study design. A purposive sampling technique was used to select 107 Ghanaian patients (participants) between February and April 2023 and a piloted questionnaire administered to eligible participants to record response to questions asked pertaining to their level of financial distress.

Results

One hundred questionnaires were administered, 80 of them respond to yielding an 80% response rate. Majority (71.3%) of the participants overall reported having high financial distress while 73.8% of the respondents did spend more on their cancer treatment than expected. Though the employment status of participants did not differ much, 41.25% overall reported of having annual income of less than GH¢6000.00 (\$1500). In addition, there was some evidence of association between the annual income of patients and financial distress ($p = 0.014$).

Conclusion

Cancer patients who receive care at the cancer unit at the study site in Ghana suffer high financial burden related to cost of care. Strong political will is needed to make accessible comprehensive health funding for all cancer therapies.

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P253 X-ray car pilot (domiciliary x-ray) a year in review

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Currently domiciliary x-ray is not standard practice across the UK. Due to new and emerging ultra-portable digital x-ray equipment this is now a feasible option to be able to provide diagnostic images in the community. An x-ray car pilot

service was set up to allow frail and elderly patients who have had a fall with a potential injury and require an x-ray as an alternative pathway to attending the emergency department (ED). The idea of the service is to provide hospital standard care in the community whilst reducing the need to attend ED and potentially avoid an unnecessary hospital admission. An x-ray is completed in the comfort of the patients own home and treatment plan is arranged via our acute GP service with the support of the community response team. The patient is placed on the virtual ward where a holistic assessment of the patient occurs, and community support can be provided if needed.

This poster will evaluate how successful the pilot has been and what challenges occurred whilst implementing and running the service. This will be achieved by outlining how the pathway was set up, which teams are involved and how the pathway runs day to day. It will also show the impact on patients, staff and the wider hospital including statistics on patient numbers, fracture rate and admission avoidance, alongside case studies and staff and patient feedback. We hope this evaluation of the service will help inform others the benefits and challenges of implementing a new domiciliary service.

P254 Role of Radiology Department in Dementia Pathway through a Community Diagnostic Centre

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As a Radiology department we have worked alongside the Memory assessment team, Northamptonshire Carers and the University of Northampton to deliver a dementia pathway through the newly opened Corby community diagnostic centre. The main aim of the pilot study, funded by NHS England, was to improve the time it takes to achieve a diagnosis, improve dementia diagnosis rates and enhance diagnostic experience for patients and carers as a priority system pathway. This also includes promoting and increasing early uptake of dementia diagnosis for groups experiencing health inequalities by working with these communities. The presentation will explore how working alongside our partners has enabled this pilot study to be a success, seeing a tangible decrease in the time taken to achieve a dementia diagnosis for our patients.

P255 The relationship between cause of death and contributory factors - as seen on PMCT

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Background

Post-mortem computed tomography (PMCT) is a minimally invasive alternative to the traditional autopsy, increasingly being used to investigate non-suspicious sudden and/or unexpected deaths. Existing literature around PMCT compares differences in causes of death reported by PMCT versus autopsy with little focus on part 2 of the death certificate. Deepening our understanding of this gap could better clinical governance, improve death certification accuracy and provide insights for preventative health measures. No previous studies have systematically explored contributory factors using PMCT across a routine NHS caseload. This study aims to clarify the connection between both sections of the death certificate.

Method

A retrospective observational study was conducted, using data from 1685 PMCT cases reported by a single radiologist across five areas during 2023. Data included information about patient demographics, cause(s) of death and contributory factors as seen on PMCT or deduced through supporting documents and clinical information, which included general practitioner summaries. Cases were excluded where toxicology reports were not received or PMCT was inconclusive.

Results

Cardiac deaths accounted for 63.6% (n=1071), with 80.7% showing at least one risk factor such as hypertension, hyperlipidaemia, hyperglycaemia, or smoking. In non-cardiac deaths (36.4%, n=614), alcohol misuse was the main contributory factor in 24.5% (n=150) of cases.

Conclusion

The results show PMCT findings are consistent with preexisting literature surrounding contributory factors and causes of death. These findings underscore the importance of preventative health measures that target risk factors that contribute to mortality.

P256 What is the effect of using the transfer aid Atle-180 on staff wellbeing in radiographers compared to the traditional PAT slide for lateral transfer to and from the CT scanner? A Quality Improvement Project

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Lateral transfers using the PAT slide technique have long been part of moving and handling practice in healthcare (Sun et al., 2018). However, rising patient numbers and increasing patient weight require re-evaluation of whether this method remains the safest and most effective approach (Muller et al., 2016). During an investigation of alternative transfer aids, the Atle-180 device was identified. This device attaches to the patient's bed sheet and mechanically transfers the patient between their bed and the CT scanner. With national data showing that 27% of staff sickness is related to moving and handling activities (Pleho et al., 2021), exploring devices that reduce physical strain is essential.

An anonymous questionnaire was distributed to staff before and after a trial of the Atle-180. Both versions contained similar multiple-choice and open-ended questions designed to assess physical and mental well-being. The questionnaire was created using Microsoft Forms and shared via the Trust email system.

Forty-six percent of staff reported sustaining a moving-and-handling-related injury, and 34% had taken time off work as a result. Additionally, 90% felt pressured to undertake PAT slides without adequate staffing, and 72% felt rushed during transfers. Following implementation of the device, staff reported a perceived reduction in physical workload and noted improvements in patient comfort and overall experience.

Staff perceptions indicate that the device reduces physical workload and enhances patient experience. Its continued use may contribute to long-term improvements in staff satisfaction and potential financial benefits for the department.

Müller, M.J., Braun, W., Enderle, J. and Bosy-Westphal, A., 2016. Beyond BMI: conceptual issues related to overweight and obese patients. *Obesity facts*, 9(3), pp.193-205.

Pleho, D., Hadžiomerović, A.M., Pleho, K., Pleho, J., Remić, D., Arslanagić, D., Lazić, M. and Alibegović, A., 2021. Work caused musculoskeletal disorders in health professionals. *Journal of Health Sciences*, 11(1), pp.7-16.

Sun, C., Buchholz, B., Quinn, M., Punnett, L., Galligan, C. and Gore, R., 2018. Ergonomic evaluation of slide boards used by home care aides to assist client transfers. *Ergonomics*, 61(7), pp.913-922.

P257 Case study: A single-use hysteroscope alongside Ultrasound for a complex Intrauterine Brachytherapy rod insertion

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Background

Intrauterine brachytherapy (IBT) is a complex treatment for cervical cancer¹. If IBT rod insertion fails an external beam radiotherapy boost alternative increases the dose to surrounding organs at risk, increasing risk of late radiotherapy effects that affect quality of life. Transabdominal ultrasound (US) for IBT rod placement reduces the uterine perforation rate and reduces procedure time². Also the introduction of disposable digital hysteroscopes has benefits including reduced infection risk, convenience, quick set-up, improved patient safety and cost efficiency³. This case study describes an IBT rod insertion for a FIGO2018 Stage1B3 adenocarcinoma cervix. Multi-disciplinary skills alongside US and live visualisation with the hysteroscope enabled successful rod placement despite complex anatomy.

Purpose

IBT is a multidisciplinary modality involving Clinical Oncologists, Medical Physicists, Sonographers, MRI/CT diagnostic and therapeutic radiographers. This case educates regarding IBT rod insertion for complex anatomy; teamwork, communication and multidisciplinary tools enabled a successful insertion improving treatment quality and patient experience.

Summary of Content

Content includes case history, staging MRI (large tumour alongside multiple benign intramural and subserosal fibroids). US images, IBT MR/CT images explain placement. At IBT rod insertion clinical skills, US and single-use hysteroscope enabled live visualisation inside the cervical os/uterine cavity.

Recommendations

Multidisciplinary skills teamwork and innovations can increase successful IBT rod placement, benefiting the patient and theatre resources.

1. Reed, N. Balega, J, Barwik T et al (2021). British Gynaecological Cancer Society (BGCS) Cervical Cancer guidelines: Recommendations for practice. *European Journal of Obstetrics & Gynaecology & Reproductive Biology*, 256, 433-465.

2. Pareek V, Barthwala M, Giridhara P, et al. A phase III randomised trial of trans-abdominal ultrasound in improving application quality and dosimetry of intra-cavitary brachytherapy in locally advanced cervical cancer. *J Cancer Res Ther*. 2021;160(2):375-378.

3. Jiang D, Dan L, Pasic R, et al. Application of disposable digital hysteroscope for outpatient hysteroscopy in women undergoing artificial assisted reproductive procedures: a clinical re-search. Gynecology and Obstetrics Clinical Medicine 2-24:4e000031.

P258 Optimising intravenous digital subtraction angiography for cerebral aneurysm follow-up in a radiographer-led service

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Background

Endovascular treatment of cerebral aneurysms reduces the risk of subarachnoid haemorrhage (SAH). Devices used include intrasaccular implants and flow-diverter stents (FDS). NICE Guidelines state that follow up imaging should be considered[1]. MRA or invasive arterial angiography are performed. Intravenous VasoCT (IV DSA) is an emerging technique, demonstrating acceptable image quality (73–91%) [2,3]. Where MRA is unsuitable, IV DSA offers a less invasive alternative. A radiographer-led IV DSA service was introduced in August 2024.

Aim

To evaluate protocol optimisation for IV DSA, focusing on image quality, diagnostic value, and radiographer technique.

Methods

Prospective audit of 35 patients (Aug 2024–Dec 2025), covering 42 devices in 36 aneurysms. Fig. 1

Key changes included:

- Contrast timing: AP venogram of the neck used to calculate contrast injector timing → improved vessel opacification
- Contrast strength: Increased from Visipaque 275 to Niopam 300 → enhanced vessel density
- Post-processing: Multiple reconstructions tailored to clinical questions → improved diagnostic value Fig.2,3
- Patient selection: Exclusion of patients with dense coil masses → better image quality

Results

- 90% success rate (per INR quality audit VASO-CT evaluation)
- No adverse events
- IV DSA adopted as routine follow-up for FDS cases and initial follow-up for clinical trial patients with intrasaccular devices

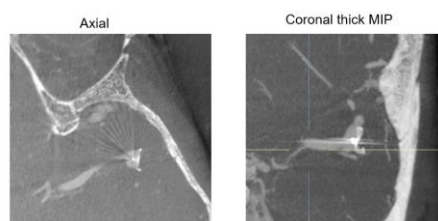
Conclusion

Radiographer-led IV DSA is a safe and efficient alternative for cerebral aneurysm surveillance in appropriately selected patients. Accurate AP imaging of the neck is crucial for contrast timing. Continued protocol refinement, radiographer training, and regular audit are essential for high quality service delivery.

Fig.1

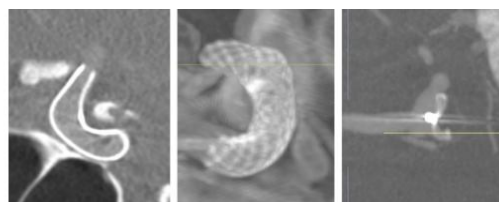
Aneurysm Location	N=36	Percentage (%)
Paraophthalmic	6	17.6
Cavernous	2	5.9
Paraophthalmic + cavernous	1	2.9
Carotid cave	2	5.9
Paraophthalmic + carotid cave	1	2.9
ICA blister	2	5.9
Anterior choroidal	1	2.9
Pcom	3	8.8
Terminal ICA (A1 ACA)	1	2.9
Acom	4	11.8
MCA	3	8.8
Basilar	3	8.8
Vertebral	2	5.9
AICA	1	2.9
PICA	1	2.9
PCA	1	2.9

Fig.2



MPR and MIP improve 'gross' visualisation

Fig.3



Device deformation A) Smooth distal narrowing of a Derivo device B) Fishmouthing of a Surpass device C) Partially distorted Contour device in a middle cerebral artery aneurysm

- 1.NICE Guidelines (2022); 228
- 2.Platania G, et al. Journal of NeuroInterventional Surgery. 2025;17:A11-A12
- 3.Struffert T, et al. Eur Radiol. 2011;21(2):411-8.

P259 Assistant practitioners in oncology MRI: a workforce success story

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Background

In a large oncology centre, magnetic resonance imaging (MRI) plays a vital role in the patient pathway. It is used to assess treatment response, and check disease progression. As treatment schedules improve, the number of patients living with cancer, and the number of referrals to MRI increases. (2) Due to increased demands and difficulty recruiting, Health Care Assistants (HCA's) were recruited into the roles of trainee Assistant Practitioners in MRI and followed accelerated degree programs. (1,2,3) The Radiology department has a long record of training HCA's who are an integral part of the department workforce and patient journey. The MRI department also has a proven training program for Radiographers who are new to MRI scanning. Three Assistant Practitioners have followed this same practical training to complement their degree.

Purpose

The poster will outline and share the training process and the role and benefits of the Assistant Practitioner in MRI.

Method

Semi structured interviews with the trainee and graduate Assistant Practitioners and their mentor.

Summary of content

Timeline of HCA's entering the degree program. Details of the degree course. Details of the in-house training in MRI and restrictions to practice. Our experience and perspective on the process. Assistant Practitioner roles within the department.

Conclusion

The poster will outline the advantages of Graduate Assistant Practitioners working within MRI including being available as a second member of trained staff per scanner, for safe scanning. Releasing Radiographers to justify and vet MRI requests including checking of implants (1,3).

1.NHS England (2021) Allied Health professions' Support Worker Competency, Education, and career development framework- accessed 02/2026

2.The Christie NHS Foundation Trust Annual report and accounts 2024/2025 -24/25 -accessed 02/2026

3.The College of Radiographers Education and Career Framework for the Radiography Workforce (4th Edition) updated 2025-9/59 - accessed 02/2026.

P260 Creating insight with incidents: a year with the national incident learning system for clinical imaging, MRI and nuclear medicine

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Background

The analysis of incidents and near miss events creates opportunities to improve patient safety. In 2025, the Medical Exposures Group (MEG) at the UK Health Security Agency launched the national incident learning system and commenced analysis of the received data. The poster will explore the experiences and learning from the first year of data submission and analysis.

Method

Clinical providers across the UK have been adopting the national coding taxonomy, which was designed to support local and national analysis and learning. Clinical providers have been applying the coding taxonomy to incidents and near miss events which are within the scope of the national incident learning system. This anonymised incident and near miss event data is then submitted to MEG for national analysis. MEG commenced analysis in 2025. The initial analysis explored the application of the coding taxonomy and early trends within the data received. User feedback was also sought to inform future resources to support participation and enhance safety culture.

Results

The poster will explore the achievements of the database over the first 12 months in terms of analysis and shared learning. It will demonstrate some of the trends identified and explore the value of the national coding taxonomy to clinical providers.

Conclusion

Significant progress with the national incident learning system has been demonstrated over the previous 12 months. As the system matures and data submission increases, it is anticipated that national trends will begin to emerge. This will inform national learning and guide targeted safety interventions.

P261 Keeping humanity at the heart of radiography: a collaborative multi-theme approach to strengthening clinical education

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Background

Clinical education in diagnostic imaging continues to evolve in response to rising learner numbers (Konstantinidis, 2024), expanding role development (Richards, 2020), and increasing expectations for quality practice-based teaching. Radiography educators require consistent, evidence-informed development to support learners effectively across induction, education, and wellbeing. Study days that consolidate updates and promote shared understanding strengthen educator capability and remain an important component of best practice in clinical education.

Purpose

The study day aimed to provide clinical educators with structured learning aligned with current practice needs. Learning outcomes included enhanced awareness of service-level developments, increased confidence in supporting learners at different stages of training and strengthened competence in promoting wellbeing and resilience. These outcomes are intended to help participants apply consistent, evidence-based approaches to learner supervision and support across clinical settings.

Summary of content

The virtual study day comprised four themed sessions. The “Hot topics” theme provided updates on programme developments, radiographer-led pathways, and national documentation projects. The “Induction” theme explored effective learner induction models and transitions into practice, including early-career reflections. Sessions on “Teaching and learning” addressed planning for small-group teaching, strategies for supporting learners across academic levels, and considerations for inclusive support for neurodiverse learners. The final wellbeing theme examined indicators of struggling learners and approaches to fostering resilience and psychologically safe learning cultures. Community-of-practice discussions facilitated deeper peer exchange and consolidation of learning (Ramazan et al. 2024). This study day presents an adaptable, theme-based model to enhance educators' capabilities, strengthen learner support and promote wellbeing across diagnostic imaging practice.

Konstantinidis K. (2024). The shortage of radiographers: A global crisis in healthcare. *Journal of medical imaging and radiation sciences*, 55(4), 101333. <https://doi.org/10.1016/j.jmir.2023.10.001>

Ramazan, F., Graham, Y. and Hayes, C., (2024). Communities of practice: An alternative approach to bridging the theory-practice gap in radiography?. *Radiography*, 30(4), pp.1167-1172.

Richards, M., (2020). Diagnostics: recovery and renewal. Report of the independent review of diagnostic services for NHS England. Available at: <https://www.england.nhs.uk/wp-content/uploads/2020/11/diagnostics-recovery-and-renewal-independent-review-of-diagnostic-services-for-nhs-england-2.pdf> [Accessed: 28/01/2026].

P262 Measuring the impact of a radiographer hot reporting service: a service evaluation

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Background

Reporting radiographers (RRs) are embedded in UK imaging departments, with many providing a hot reporting service to support patient care¹. Evaluation of such services ensures user needs are met and facilitates service improvement². RRs work at enhanced, advanced, and consultant levels of practice³; they often exist in isolated offices within radiology departments, remote from patients. Advanced practitioners in England should ‘act as a clinical role model’ and demonstrate ‘working in partnerships’ with patients⁴. This project aimed to understand if RRs are directly impacting clinical decision making and patient management.

Method

A service evaluation of a RR ‘hot reporting’ service was undertaken at one NHS Trust. One mixed methods cross-sectional data collection method, an anonymous online survey, was open for four weeks and combined multiple-choice, Likert scale and free-text questions. Purposive sampling was used to target users of the hot reporting phone, from all professional backgrounds.

Results

86 survey responses were obtained from varying professional backgrounds, across eight sites. Approximately 40% of participants did not describe themselves as confident in image interpretation. 97% felt the hot reporting service has a positive impact on their role and service, 91% stated that the service supports patient management. Of clinical respondents, 95% felt this supports clinical decision making and 94% felt this increases their image interpretation confidence.

Conclusion

While RRs undertake their duties at a distance from patients, through a hot reporting service, their specialist knowledge, skills and experience can positively impact patients, services and collaborative team working to ensure appropriate patient management.

1. Snaith, B., Hardy, M. and Lewis, E.F. (2015). Radiographer reporting in the UK: A longitudinal analysis. *Radiography*, [online] 21(2), pp.119–123. doi:<https://doi.org/10.1016/j.radi.2014.10.001>.

2. Evaluation Works. (n.d.). Home. [online] Available at: <https://nhsevaluationtoolkit.net/>.

3. College of Radiographers (CoR) (2021). Education and Career Framework (ECF) (fourth edition) | CoR. [online] CoR. Available at: <https://www.collegeofradiographers.ac.uk/education-and-career-framework-ecf>.

4. Health Education England (2025). Multi-professional Framework for Advanced Practice in England. [online] Advanced Practice. Available at: <https://advanced-practice.hee.nhs.uk/multi-professional-framework-for-advanced-practice/>.

P263 Implementing a multi-dose MRI Contrast Vial: Impact on waste, cost, and workflow efficiency

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Background

Multi-dose vial strategies offer operational and economic advantages in MRI contrast administration, particularly when paired with closed-system devices. Our site implemented a standardised, infection-controlled workflow for multi-patient use of a 50 mL multi-dose vial of Elucirem™, a gadolinium-based contrast agent indicated for MRI in adults and children aged ≥2 years. The agent supports weight-based dosing across a wide range of anatomical regions while using substantially less gadolinium than conventional agents.

Methods

Our site implemented a standardised, infection-controlled workflow for multi-patient use of Elucirem™ from a 50 mL multi-dose vial using the RoweSpike II closed-system device. Radiographers received training in aseptic technique, safe vial access, and multi-dose extraction. Data were collected before and after implementation to evaluate contrast usage, waste reduction, workflow impact, and overall cost efficiency.

Results

Use of the 50 mL multi-dose vial supported accurate weight-based dosing while maintaining aseptic integrity across multiple patient draws. Contrast waste decreased significantly with the multi-dose approach, reducing waste to 15%—equivalent to approximately 59 additional 10 mL doses and generating a monthly cost saving of over £1,000. Overall expenditure on contrast agents was reduced, and workflow efficiency was maintained with no additional preparation time or disruption to scanning schedules.

Conclusion

Implementing a multi-dose vial protocol with the RoweSpike II system improved operational efficiency, reduced contrast waste, and lowered overall gadolinium exposure without compromising diagnostic quality or infection-control standards. These findings support broader adoption of multi-dose strategies to optimise MRI contrast utilisation in clinical practice.

Marsh, L. (2026) Elucirem Multidose Vial SOP. Version V001. Ratified by A. Mann, January 2026. Review due January 2029.

RoweMed. RoweSpike II closed-system vial access device: Technical specifications and usage guidance. RoweMed; 2025.

Thomsen HS, Morcos SK, Almen T. Safety of gadopicleonol after its first year of clinical use. *Investigative Radiology*. 2024;59(1):12-21. en T, Barkhausen J, et al. A comprehensive overview of the efficacy and safety of gadopicleonol. *Investigative Radiology*. 2024;59(2):102-109.

P264 Sustaining excellence in imaging services: The role of the QSI hub in the quality mark scheme

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Background

The Quality Standard for Imaging (QSI) is a collaboration between the Royal College of Radiologists (RCR) and the College of Radiographers (CoR). The QSI Hub is the cornerstone of scheme, offering dedicated support to imaging services throughout the UK. The Hub encourages ongoing enhancement by promoting QSI engagement, providing tailored QSI advice, and fostering knowledge-sharing among Hub members. The Hub activities include structured, regular meetings, support with individual standards and feedback of Quality Mark trends, all of which assist services in implementing best practices, quality improvement and upholding high standards.

Purpose

The Hub's main aim is to directly enhance patient care by supporting imaging services to achieve and uphold the QSI Quality Mark, which focuses on delivering safe, effective, and patient-centred imaging. The Hub contributes by:

- Driving continuous improvement in services through QSI participation
- Supporting services through every stage of QSI preparation and assessment
- Monitoring the progress of services, awarding 'Working Towards'
- Ensuring the adoption of best practices in medical imaging
- Promoting collaboration with other imaging services and with the RCR and CoR.

This collaborative approach helps to nurture a culture of quality and safety, ensuring imaging services can consistently provide high-quality care. Ultimately, the Hub model highlights the importance of dedicated partnership in elevating and sustaining healthcare quality standards for the benefit of patients.

Summary

The QSI Hub model demonstrates the value of dedicated partnership between the Colleges and UK Services in achieving and sustaining excellence in healthcare standards and patient care.

P265 Radiology Accreditation Programme (RAP): A two cycle experience demonstrating measurable improvements and CQC preparedness

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Purpose

This study evaluates the effectiveness of a structured, peer led Radiology Accreditation Programme (RAP) in delivering measurable quality improvement across a large multi site NHS Imaging Directorate while maintaining preparedness against Care Quality Commission (CQC) domains. RAP adapts established ward accreditation methodology for imaging, combining portfolio review, observational visits, and a rolling action log to drive continuous improvement across modalities.

Methods

RAP uses a standardised feedback matrix aligned to CQC Key Lines of Enquiry (KLOEs), covering leadership, patient involvement, safety culture, quality improvement, wellbeing, and professional development. Cross site audit teams, clinical modality lead, operational lead, and senior nurse, conduct interviews, observations, and document reviews, applying evidence based scoring. Auditor training and structured guidance support reliability and consistency.

Results

Across two annual cycles (2024–2025), the Imaging Directorate improved its performance profile from 24% Gold / 56% Silver / 18% Bronze / 2% White to 27% Gold / 68% Silver / 5% Bronze / 0% White, demonstrating upward movement from “requires improvement” to “good/outstanding” categories and eliminating “inadequate” ratings. Site specific gains included removal of all Bronze ratings at St Mary’s and Hammersmith, with sustained Silver/Gold performance across Charing Cross modalities. Qualitative findings highlighted stronger safety culture, enhanced staff engagement, and targeted governance and infrastructure improvements.

Conclusions

A structured, in house, cross site audit model can drive directorate wide quality gains within a single cycle while strengthening CQC preparedness. RAP operationalises national quality policy, including QSIN standards, by embedding structured governance, workforce development, patient involvement, and repeatable cross site assurance.

P266 Evaluating hand hygiene in diagnostic imaging departments

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Background

Hand hygiene (HH) is recognized as the most critical and cost-effective method for preventing healthcare-associated infections (HAIs), which significantly impact patient morbidity, mortality, and healthcare costs. Radiography departments are high-risk environments for infection transmission due to high patient throughput and “high-touch” nature. Despite these risks, there is a notable absence of standardized, radiography-specific infection prevention and control (IPC) guidelines to assist clinical staff.

Methods

A clinical audits were conducted in one busy university teaching hospital to evaluate IPC adherence in a general radiography department. Compliance was measured against the “Bare Below the Elbow” (BBE) policy and the WHO’s “5 Moments of Hand Hygiene,” specifically adapted for the radiography workflow. Target compliance rates were established at 100% for BBE and 90% for HH.

Results

Results demonstrated significant variability. In general radiography, HH compliance averaged 52% (range 5%–90%). BBE was alarmingly low (17%). Key barriers to compliance identified included acute time constraints, gaps in staff knowledge, and a lack of department-specific IPC guidance.

Conclusion

This audit highlights critical gaps in IPC adherence, particularly regarding equipment hygiene and general radiography practices. Findings suggest a pressing need for targeted education and the implementation of standardized, environment-specific protocols. Regular re-audits every 3–6 months are recommended to foster sustained improvement and safeguard patient safety.

P267 Community Diagnostic Centres as research-active platforms – moving beyond imaging capacity

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Purpose

Community Diagnostic Centres (CDCs) are commonly positioned as high-throughput imaging hubs to improve access and reduce waiting times. We demonstrate CDCs can also function as research-active environments, supporting both commercial and non-commercial studies; and outline how a national independent imaging provider has embedded research delivery within CDC operations.

Methods

Retrospective service evaluation was undertaken across multiple CDC sites within national imaging network, where Independent Sector Provider supports the NHS. Research activity reviewed alongside routine clinical throughput, focusing on study type, operational integration, and governance enablers. Metrics included total research scans, trial volume, modality mix, site-level capability; contextualised against overall organisational research activity. Qualitative assessment examined workforce readiness, image quality assurance (QA), patient satisfaction scores (PSS), radiographic staff satisfaction, and pathway integration.

Results

CDCs supported broad portfolio of research activity, including MRI-led programmes, unique PET-CT studies, standard-of-care embedded studies, and mixed commercial and non-commercial trials. Individual CDCs demonstrated variable but scalable capability – with some centres supporting over 20 concurrent trials, while others functioned as reserve or overflow capacity. Research delivery did not compromise clinical throughput, supported by standardised protocols, central QA, and trained multidisciplinary teams. High patient and staff satisfaction, and efficient visit scheduling enabled research participation to be integrated into routine diagnostic pathways.

Conclusion

CDCs can operate as credible, research-active platforms if supported by robust QA, workforce training, and operational governance. CDCs offer decentralised research hubs that align patient access, productivity, and study delivery; positioning CDC networks as attractive partners for future imaging-enabled research programmes.

P268 Development and implementation of an audit programme in mobile diagnostic imaging

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Background

Assurance of clinical and operational quality is key to delivering safe and patient centred care. Within Radiology services audit is utilised to measure the compliance with company policy and procedure documents. Clinical audit compliance is key to identification of areas of non compliance and emerging risk.

As a mobile and relocatable provider covering the UK and Europe areas of practice are not visible to the senior and quality teams on a daily basis, requiring clear compliance and non compliance overview at sites.

By utilising electronic audit and audit programme within RADAR the central team had clear overview of the audit findings at site see outcomes and actions on a dashboard.

Method

Assessment of audit compliance during a 12 month period including before and after building of an electronic audit system with associated dashboard.

Results

Audits were allocated specifically for each location with a bespoke audit plan built into the system based upon the service delivery. The dashboard showed in December 2025: 97% compliant with audit requirements. The dashboard allowed easy overview of locations with abandoned audits and support and training targeted to those areas. By tracking and logging actions centrally these could be presented to Clinical Governance Committee for overview of outstanding and overdue actions and learning from audits.

Conclusion

By allocating audits specifically to each location and tracking and monitoring outstanding actions, key trends and emerging themes the central governance team gained assurance that processes were followed at site, allowing identification of actions and escalation as required.

P269 HPV vaccination: barriers and facilitators to uptake in the gay, bisexual and other men who have sex with men cohort

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Background

Persistent infection with certain high-risk types of HPV, is strongly linked to the development of several cancers¹.

The most effective way to prevent it is through vaccination². Gay, Bisexual and other Men who have Sex with Men (GBMSM) up to age 45 can access the vaccination via their sexual health clinic. In order to improve uptake of vaccination within the GBMSM cohort, it is essential that we understand the barriers and facilitators to uptake in Cheshire and Merseyside.

Method

A qualitative survey carried out in Cheshire and Merseyside during October and November 2025 received 38 responses. A further quantitative survey carried out through the dating app Grindr, had 644 responses from the UK, with 53 of these from GBMSM living in the North West aged under 45.

Results

Locally, 63% of respondents had heard of the HPV vaccine, but only 18% reported a good understanding. Most (71%) were unaware that GBMSM are eligible for vaccination up to age 45 through sexual health or HIV clinics. The leading barriers were a lack of perceived importance (55%) and stigma in seeking a sexual health-related vaccine (53%). Nationally, 51% knew about increased cancer risks for GBMSM, but 33% did not know they were eligible for vaccination. A smaller proportion (12%) were reluctant to disclose their sexual preference or feared stigma.

Conclusion

There is a clear need to increase awareness of the HPV vaccine amongst the GBMSM population to support the reduction in HPV related cancers.

1. Cancer Research UK (2024) The HPV vaccine. Available at: <https://www.cancerresearchuk.org/about-cancer/causes-of-cancer/infections-eg-hpv-and-cancer/the-hpv-vaccine> (Accessed: 27/10/2025).

2. NHS (2022) Human Papillomavirus Human papillomavirus (HPV) - NHS (Accessed: 23/12/25).

P270 It's all relative: a radiographer's perspective on caring for patient families

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Background

In diagnostics, under IR(ME)R, we are duty bound to protect comforters and carers with regards to radiation, but what of the families waiting on the other side of the door? On the 24th of January 2025, Storm Eowyn hit the United Kingdom. My partner suffered a life-threatening accident at work, because of the strong winds. It has taken the last 12 months for him to recover properly, and the end is not in sight yet. As a radiographer, I was thrust into that dual role none of us like to play- knowing too much from our role and being the desperate relative longing for information and answers. Reflecting on my experiences as the relative in the situation, I started to consider how I had never truly understood the impact healthcare professionals have on a relative's experience.

Purpose

- To consider the relative's perspective.
- To consider the impact radiographers and medical imaging staff can have on a relative, whilst caring for their patients.
- To reflect on the lessons I have learned, that can be shared with others in the profession.

Summary of content

This submission is my own reflection on my journey as the relative of a patient needing extensive care. This submission aims to share the lessons I learned regarding my own practice, and how radiographers and medical imaging staff can further support the relatives of the patients in their care.

P271 The benefits of UKAS Accreditation for diagnostic imaging services

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Background

Diagnostic imaging services operate within complex clinical, regulatory, and operational environments where consistency, safety, and quality are essential. While certification confirms that minimum standards are met, many services require a more robust, evidence driven framework to support continuous improvement. UKAS accreditation to BS 70000:2017 provides this by offering a structured, nationally recognised approach to governance, quality assurance, and operational effectiveness. As the national accreditation body for the UK, UKAS operates independently and impartially, ensuring that assessments are objective, consistent, and free from organisational influence

Purpose

This presentation outlines the key benefits of UKAS accreditation to BS 70000:2017, highlighting how it strengthens patient safety, service consistency, and care quality beyond basic compliance.

Summary of Content

Benefits of Accreditation. An overview of how BS 70000:2017 promotes enhanced consistency, stronger governance, assurance of safe practice, and improved imaging outcomes.

Case Studies

Real world examples demonstrating how accreditation has:

- Improved process standardisation
- Supported implementation of imaging guidelines
- Reduced variation and increased reliability in service delivery

Alignment of Processes & QA

How accreditation drives harmonised imaging protocols across sites, strengthens equipment management and QA programmes, and enables effective use of image quality audits.

Governance & Audit Improvements

Illustration of how comprehensive audit programmes confirm that processes work as intended, including safe medicines management and consistent procedural application.

Cultural & Operational Advantages

Insight into wider organisational benefits such as enhanced staff engagement, stronger cross team collaboration, improved efficiency and value for money, and increased confidence among internal and external stakeholders.

P272 Bringing professions together: Driving multi-professional preceptorship forward and sustaining high quality translational support

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Background

Over the last decade, investment in high-quality preceptorship across nursing, midwifery and allied health professions has demonstrated positive effects on workforce attrition and retention¹. As the National Health Service seeks sustainable models, the introduction of the National Multi-Professional Preceptorship Mark has further encouraged collaborative approaches to provide high-quality transitional support across health and care systems².

Regional funding enabled a digital clinical placement team to design, implement and evaluate a two-day multi-professional preceptorship training programme³. This initiative supports colleagues to align with principles set by the Nursing and Midwifery Council and the Health and Care Professions Council to champion preceptorship^{4,5}.

Additionally, a one-day preceptor training offer was developed, based on the e-Learning for Health preceptorship resources, to enhance understanding of effective transitional support for a diverse and increasingly under-resourced workforce⁶.

Method/Result

Between November 2025 and February 2026, 99 participants attended the two-day programme. Represented professions included nursing (47), radiography (19), midwifery (9), occupational therapy (8), physiotherapy (6) and others (10). Emerging themes included revision of local preceptorship policy, broaden preceptorship beyond newly qualified staff, improve multi-professional inclusion within departments and strengthen the capability and confidence of preceptors.

Conclusion

Bringing together a multi-professional workforce enabled participants to compare and refine varied approaches to preceptorship. Attendees reconceptualised the core purpose of preceptorship, supporting a shared, system-wide understanding of effective transitional support. Further one-day multi-professional preceptor training sessions will run in March 2026, with more than 100 staff already registered; evaluation data will continue to demonstrate the value of collaborative preceptorship training.

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P273 Impact of advanced and consultant practitioner radiographer roles on radiotherapy services

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Background

Advanced and consultant practitioner therapeutic radiographers (A/CPRs) are increasingly recognised as critical to workforce sustainability, service resilience and quality improvement within radiotherapy services. Despite national frameworks outlining expectations for advanced and consultant practice, there remains limited published evidence describing the real world impact of these roles across clinical, leadership, education and research domains. This project aimed to address this gap by evaluating the contribution and impact of A/CPRs within a regional radiotherapy workforce.

Methods

Methods were undertaken across multiple radiotherapy centres. Structured professional conversations were conducted using a standardised proforma aligned to the ACCEND and the College of Radiographers Education and Career Framework. A patient experience survey was conducted for patients under the care of A/CPRs, using the 2024 national cancer patient experience survey as a baseline. A radiotherapy staff survey was conducted about A/CPRs role within leadership and education. Data were collected anonymously and analysed using descriptive statistics, alongside thematic analysis of qualitative commentary.

Results

High levels of engagement were achieved, with the majority of A/CPRs in the region participating. 31 patients and 31 members of radiotherapy staff undertook the survey. A/CPRs demonstrated impact across all four pillars of practice, including clinical capacity and cost effectiveness, improved patient pathways, leadership in service development, and contribution to education, training and supervision.

Conclusion

A/CPR roles deliver measurable service and workforce benefits across radiotherapy services. These findings support the continued development and strategic deployment of A/CPRs within radiotherapy services, aligned to national workforce frameworks

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P274 A new eLearning program for identifying medical implants on X-rays: Does it improve radiographer confidence and patient safety?

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Background

Identifying internal implants prior to MRI is essential to prevent patient harm. Pre-MRI safety screening consists of a written questionnaire and verbal review¹. However, accidental exposure of unknown/unexpected implants to MRI is still documented internationally^{2,3}. Inaccuracies in questionnaire responses may lead radiographers to make safety-critical decisions based on potentially incomplete information. The routine review of pre-existing imaging could prevent this issue, but there was no training to teach radiographers to find and name implants on x-rays. The authors developed an online program, hosted on the eLearning for Healthcare (eLH) platform⁴, for this purpose and solicited participant feedback.

Method

Pre- and post-learning anonymous surveys, designed to assess participants' confidence in identifying implants, were included with the first module (chest implants).

Results

The tables present the percentage distribution of respondents across self-reported confidence levels in finding and naming implants, before and after the training. For both active and passive implants, the proportion of respondents reporting being very or fairly confident in finding and naming implants increased post-training, whereas the proportion reporting little or no confidence decreased. Additionally, 87% of respondents found the module extremely helpful/very helpful, and 85% reported being extremely/very satisfied with the range of implants included. 87% rated the content quality as excellent or very good.

Conclusion

Group-level comparisons indicate a shift toward greater confidence in both the finding and naming of implants following training. This programme may improve radiographers' confidence in using X-rays for MRI safety screening and could contribute to improved patient safety.

Table 1: Shows the confidence ratings of respondents in finding and naming a range of active implants before and after completing the eLearning module.

Active implants		Pre-training	Post-training
Finding the implant	Very confident	11%	25%
	Fairly confident	36%	46%
	Somewhat confident	19%	14%
	A little confident	9%	8%
	Not confident	3%	2%
Naming the implant	Very confident	8%	18%
	Fairly confident	22%	39%
	Somewhat confident	27%	24%
	A little confident	17%	8%
	Not confident	19%	3%

Table 2: Shows the confidence ratings of respondents in finding and naming a range of passive implants before and after completing the eLearning module.

Passive implants		Pre-training	Post-training
Finding the implant	Very confident	8%	21%
	Fairly confident	27%	40%
	Somewhat confident	24%	19%
	A little confident	16%	8%
	Not confident	17%	2%
Naming the implant	Very confident	5%	13%
	Fairly confident	21%	47%
	Somewhat confident	24%	25%
	A little confident	21%	9%
	Not confident	22%	3%

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P275 Diagnostic radiography skills mix in England: an integrative review

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Background

Since its inception, the radiography skills mix initiative was expected to be implemented as a whole, to improve patient care, tackle growing demand and deliver a cost-effective solution for service delivery [1,2,4]. More than two decades later the focus remains unchanged, with further expansion of the diagnostics workforce expected to increase acquisition and reporting capacity in support of national workforce and cancer strategies [3,5].

Method

As part of a wider PhD, an integrative review was undertaken to explore evidence from 2003 to 2026 relating to the implementation and impact of the skills mix initiative across England. This review type was chosen to ensure inclusion of all relevant evidence to create a comprehensive understanding, and the five-step process by Whittemore and Knafl [6] was utilised.

Results

95 relevant papers were found. Many of these concentrated on the enhanced/advanced/consultant levels (n=75), with fewer examining support worker (SW) and assistant practitioner (AP) roles (n=15). Interestingly, 25 studies focussed on evidencing the ability of radiographers to upskill and undertake specific tasks which traditionally were the domain of radiologists. Only five publications considered skill mix as a whole. Key themes included inconsistent deployment strategies, variations in scope, under-utilisation of SWs and APs, confusion around enhanced and advanced practice, and poor understanding of consultant practice.

Conclusion

There remains a research gap examining the implementation and impact of skills mix, at all levels. This review precedes a regionally focussed mixed methods study of this topic to support evidence-based workforce planning.

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P276 A multi-level assessment of Band 6 radiographer performance and development needs in diagnostic imaging

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Background

Band 6 radiographers must combine clinical expertise with leadership, supervision, and quality improvement responsibilities. Therapeutic radiography research identifies workload pressures, unclear pathways, and inadequate feedback as progression barriers (Hutton & Eddy, 2013), yet limited evidence examines these factors in diagnostic imaging using multi-level perspectives.

Purpose

To explore Band 6 performance, confidence, and development needs within a multi-modality department, identifying systematic barriers to senior practice readiness and providing a replicable assessment framework with actionable leadership development strategies.

Summary of Content

Departmental surveys generated 44 responses (n=5 Band 4, n=10 Band 5, n=22 Band 6, n=8 Band 7). Multi-level design enabled triangulation, comparing Band 6 self-assessments with supervisee and manager perspectives. Only 59% performed at expected Band 6 standard (range 40-75%), with modality variation (IR 70% versus MRI 40%) demonstrating departmental culture influences effectiveness. Technical competence rated strongly, yet systematic deficits emerged in supervision, feedback provision, difficult conversations, and quality assurance. Structural barriers proved more significant than capability gaps: 60% of Bands 4-5 cited workload pressures and lack of protected time. Findings demonstrated that: 100% Band 4s surveyed received no useful Band 5 feedback; Band 6s identified giving feedback as lowest confidence area; progressive role clarity deterioration highlighted absent competency frameworks. Recommendations include structured preceptorship, feedback training, protected development time, competency frameworks, and modality-specific interventions. This framework suggests that workforce challenges are predominantly structural and organisational, requiring strategic intervention rather than isolated training.

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P277 Academic radiography role competencies and recruitment practices in the United Kingdom: A document analysis study

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Background

Radiography education in the United Kingdom is evolving as increasing numbers of clinically trained radiographers transition into academic roles. Despite this shift, inconsistencies between recruitment expectations and the realities of academic practice may present challenges for professionals entering higher education. This study explored required role competencies and recruitment practices associated with academic radiography positions within universities in the United Kingdom.

Methods

A document analysis was undertaken (28 April 2025 and 4 July 2025). Nineteen academic radiography job advertisements from universities in the United Kingdom were included. Job descriptions and person specifications were systematically reviewed to identify stated recruitment requirements. Data were analysed thematically using NVivo software to identify recurring competency domains across academic roles.

Results

Role requirements varied across institutions and grades; however, Health and Care Professions Council registration was mandatory in all advertisements (100%). Teaching competence was identified in seventeen advertisements (89%), with ten (53%) requiring or encouraging Advance HE recognition. Clinical credibility appeared in sixteen advertisements (84%). Research engagement featured in eleven (58%) but was essential in six (32%). Leadership and management responsibilities were reported in ten advertisements (53%), mainly in senior roles.

Conclusion

The findings highlight the importance of harmonised role competencies in academic radiography recruitment within higher education. Although existing frameworks outline broad expectations for teaching, research, and knowledge exchange, recruitment practices appear to rely largely on generic academic criteria. The absence of clearly articulated, discipline-specific competency expectations may contribute to variations in recruitment approaches and influence how well candidates are prepared for academic roles.

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P278 Beyond capacity: how rotations, ratios and timetables shape practice experience learning in North West England (RENEW Phase 1b)

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Background

National reports have highlighted the need to expand the diagnostic radiographer workforce and increase training capacity (Richards, 2020; NHS England, 2019). The RENEW project (Radiographers: Expanding the Numbers of the Essential Workforce) was established to address these pressures in North West England (NWE), where vacancy rates remain around 12% and imaging demand continues to rise. Phase 1a examined high level metrics (imaging activity, diagnostic radiography (DR) workforce numbers and current placement allocations), and identified wide variation between hospitals with similar service profiles. These findings indicated a need to understand the operational and organisational factors influencing placement decisions, forming the focus of Phase 1b.

Purpose

Phase 1b investigates how different operational conditions across NWE influence the delivery of placement learning for diagnostic radiography students. The work draws on perspectives from higher education institution (HEI) and NHS stakeholders to understand variation in supervision capacity, simulation provision, extended hours placements and the impact of HEI and departmental timetables.

Summary of Content

The poster outlines early findings from this analysis, highlighting how rotation patterns, supervision ratios, protected educator time and access to simulation resources shape the day to day organisation of placement learning. These insights contribute to a broader understanding of the factors that influence placement allocation decisions. Phase 1b will also guide the design of Phase 2 case studies, which will support regional strategies to expand and optimise diagnostic radiography training capacity.

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P279 Building a sustainable CPD culture in a private imaging service

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Background

Continuing Professional Development (CPD) is essential for high quality imaging practice, supporting regulatory compliance (HCPC registration), and workforce retention, yet many Radiographers find the process stressful, unclear, and difficult to embed into practice. Zulu et al.² (2024) state that professional development is central to strengthening radiographers' skills. Private imaging services face specific challenges, including high clinical throughput, limited protected time, and variation in staff experience across a large geographically dispersed workforce. A structured, accessible approach is required to integrate CPD into routine workflow and ensure equitable learning opportunities. Shaba and Nkosi¹ (2025) identify organisational support as a key factor in overcoming CPD barriers.

Purpose

To outline a scalable, sustainable model for the design, implementation, and evaluation of a service wide CPD promotion strategy that reduced barriers, increased engagement, improved visibility of learning opportunities, and strengthened CPD culture across the imaging workforce.

Summary of Content

A 12 month CPD strategy was developed using five workstreams: (1) leadership and cultural change, (2) accessible learning opportunities, (3) communication and visibility, (4) structured staff support, and (5) quality improvement integration. Interventions included monthly education sessions delivered by internal and external speakers, micro learning resources, a digital CPD hub, and CPD and HCPC audit workshops. The strategy prioritised flexibility, accessibility, and alignment with professional standards. Evaluation measures include staff feedback, attendance at education events, use of CPD resources, and overall engagement. Early findings show improved staff awareness of CPD processes, increased participation in learning activities, and greater confidence in portfolio maintenance and HCPC expectations.

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P280 Bullying and harassment experiences among radiographers: A Transnational Scoping Review

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Background

Workplace bullying and harassment (WB&H) are psychosocial hazards that compromise staff well-being, workforce stability, and patient safety. Radiographers are particularly vulnerable due to their frontline roles, lone working, and

exposure to high-pressure clinical environments. This scoping review systematically maps global evidence on the prevalence, types, perpetrators, and impacts of WB&H in radiography and identifies knowledge gaps.

Methods

The review protocol was published on Open Science Framework. Following Arksey & O'Malley's framework and PRISMA-ScR guidelines, a search was conducted across CINAHL, MEDLINE, AMED, APA PsycINFO, Google Scholar, and grey literature from February 2014 to January 2025. Data from included studies were charted and synthesised descriptively. No ethical approval was required.

Results

Ten studies (n = 1,389 participants) from ten countries in Africa, Europe, Asia, Australia, and North America were included. Prevalence of WB&H ranged from 45–100%, exceeding pooled estimates for nurses (36–45%) and junior doctors (24–32%). Verbal abuse was most common, followed by physical assault and sexual harassment. Patients were frequently reported as perpetrators, followed by patients' carers and family members. Long patient waiting times were often reported as an enabling factor. Reporting rates were low (<50%), mainly due to a lack of knowledge of how to report.

Conclusion

WB&H is a global and persistent issue in radiography, with significant implications for the workforce.

Implication for practice: Addressing WB&H requires organisational commitment to a high psychosocial safety climate, anonymous reporting mechanisms, inclusive and culturally aware leadership training, and targeted interventions.

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P281 Embedding AHP Enhanced Practice across SNEE ICS

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Background

Enhanced level practice (ELP) is crucial to the health and care workforce, supporting service quality, productivity and staff retention. Within Allied Health Professions (AHPs), ELP sits between preceptorship and advanced practice, yet there is a recognised national gap in appropriate postgraduate education for this level. In the Suffolk and North East Essex (SNEE) Integrated Care System (ICS), the educational profile of the ELP AHP workforce is unclear.

Purpose

This work aimed to scope and analyse current education of AHPs working at ELP in SNEE. An anonymised online survey gathered information on education, training, role profile, understanding of ELP and career pathways. The survey was shared through professional networks. Registered AHPs with over two years' experience were eligible, excluding advanced and consultant-level practitioners. All 14 registered AHP roles were included, with radiography further split into diagnostic and therapeutic.

Summary of Content

Eighty-two responses were received, representing 13 of 15 AHP professions. Overall, 78% had completed level 6 or 7 postgraduate education, while 22% held none, despite many having specialised roles. Leadership training (28%) and specialist skills training (26%) were limited. Over half had access to formal training opportunities, three quarters reported unclear development pathways, and with many unsure of the concept of ELP. Response numbers were small compared with the eligible workforce, and no ethics approval was sought. Findings highlight limited clarity around ELP and unstructured development pathways. Planned actions include: Sharing real-life ELP case studies and create an AHP ELP development navigation tool aligned to the four pillars.

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P282 Enhancing workforce opportunities through strategic collaboration in continuing professional development

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Background

Allied Health Professionals are regulated by the Health and Care Professions Council (HCPC), which mandates Continuing Professional Development (CPD) for radiographers to uphold standards of proficiency¹. CPD facilitates workforce development, sustains professional competence and improves retention; it is therefore essential that radiographers have access to high-quality CPD opportunities within the workplace². To achieve this, a collaborative CPD initiative was launched in 2025 between a UK independent healthcare charity and a leading global imaging equipment provider.

Aim

To evaluate radiographers' experiences following one year of collaborative CPD sessions with the global imaging equipment provider.

Method

Radiographers participating in the CPD sessions completed a text-based evaluation form. Responses were thematically analysed.

Results

A total of 93 responses were collected from radiographers nationwide. The analysis identified multiple themes supporting the findings. 1) High engagement and attendance, 2) Relevant content with practical application, 3) Quality and impact improvement, 4) The need for evidence, 5) Expansion to clinical topics.

Conclusion

The 2025 Radiology training programme was well-received, with strong engagement, high satisfaction, and clear perceived benefits for clinical knowledge and patient care. CPD sessions were rated highly for relevance and practicality, and most participants reported that the CPD offering in 2025 was superior to previous years. Future priorities include better scheduling and protected time, CPD evidence (attendance certificates), and expanded topics such as advanced MRI, CT/theatre, breast imaging, and non-clinical skills.

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P283 Evaluating the Impact of a structured induction programme for Proton Beam Therapy (PBT) staff

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A Proton Beam Therapy (PBT) department carries the complexity of physics, equipment, and clinical workflows which presents significant challenges for new staff. Unlike conventional radiotherapy, PBT demands an understanding of proton beam behaviour, treatment-specific hardware, and rigorous safety protocols unique to the modality. Ensuring clinical teams are equipped with knowledge and confidence is critical for maintaining patient safety, sustaining service efficiency, and supporting professional development. This study evaluates the effectiveness of a multidisciplinary, structured induction programme designed to support clinical staff transitioning into a PBT centre.

A service evaluation completed over 18 months assessed the inductions impact on staff preparedness, confidence, and support. Quantitative data was collected using a post induction questionnaire distributed to all new starters during this period (N = 12). The survey explored learning preferences, views on assessment techniques, and perceived relevance of training materials. Analysis focused on three key domains: technical proficiency, integration into clinical workflows, and adequacy of support structures within the PBT environment.

Completed surveys were returned by eight participants representing a range of radiographer pay bands and prior experience levels. Although many respondents were newly qualified, findings indicated that they no longer followed a preceptorship programme following induction. Learner led, face-to-face assessment with real-time feedback was highly valued. However, inconsistencies in support and feedback provided by mentors were noted.

Findings demonstrate that structured, modality specific induction significantly improves staff readiness for PBT practice. Future induction development should include strengthened mentorship and preceptorship as well as ongoing competency reinforcement to optimise long-term staff development.

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P284 Exploring perceptions for the future of advanced practice in radiography and radiation therapy

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Background

Advanced practice in radiography and radiation therapy is a developing phenomenon. Opportunities to develop roles outside of traditional professional boundaries has never been greater, yet there is diversity in how this applies globally and across disciplines(3). This project aimed to explore what attendees to an international advanced practice conference perceived to be main challenges and opportunities for the future of advanced practice.

Method

This project built upon a previous study which explored perceptions of the future of the radiology workforce(1). The "illustrative soundbites" method(4) was used to capture participants' thoughts through short, structured interviews. Sample demographics and dialogue were evaluated using descriptive and content analysis.

Results

10 interviews were conducted with participants from both diagnostic and therapeutic backgrounds. Participants identified lack of support, hierarchal cultures and misuse/misunderstanding of the advanced practice title to be the main threats. Many participants felt that the wider professional community perceive AI as a threat to their roles, however participants described AI as an opportunity for role development and enhanced service delivery. Other identified opportunities were international and local collaboration, role diversification and promotion of threshold definitions for advanced practice.

Conclusion

The results highlighted a need for support and recognition to define and develop advanced practice roles. The impact of "traditional" hierarchal attitudes was described as a threat to role development in response to service needs. Role diversification was seen as an opportunity to further enhance the value of advanced practice in patient pathways. AI was perceived to enhance opportunities in advanced practice.

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P285 Exploring the value and impact of a preceptorship community of practice for therapeutic radiographers

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Background

The Workforce Radiography Reform Programme (WRAP)(1) identified preceptorship as a critical priority to strengthen workforce culture and build clinical confidence in newly qualified and transitioning practitioners. National Allied Health Professional (AHP) benchmarking data previously revealed significant inconsistencies regarding the accessibility and quality of preceptorship. Consequently, a national project team was established to influence and enhance the preceptorship landscape in therapeutic radiography, developing online training aligned with NHS England AHP Preceptorship Standards (2).

Method

Following synchronous training for 103 participants (50 preceptorship champions and 53 preceptors), a Community of Practice (CoP) was established to maintain momentum. Since November 2024, bi-monthly meetings have been facilitated by experienced therapeutic radiographers to share national updates and challenges in a supportive environment. A follow-up feedback survey evaluated perceived value, professional impact, and identified barriers to attendance.

Results

Survey participants reported high perceived value in sharing best practices (4.67/5) and fostering national professional connections (4.56/5). High scores for psychological safety (4.56/5) indicated the CoP effectively facilitates a secure space for addressing clinical obstacles. Members reported increased confidence in pushing the preceptorship agenda locally. However, primary attendance barriers included meeting conflicts with clinical rotas (78%) and high clinical workloads (44%).

Conclusion

This initiative directly supports the NHS Long Term Workforce Plan (3) by enhancing retention and professional development through structured peer support. The CoP sustains momentum post-training, empowering radiographers as "change agents" to reduce workforce variation and ensure a sustainable, capable therapeutic radiography workforce.

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P286 Literature review on reducing the carbon footprint of radiology

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Radiology's environmental carbon footprint is estimated at 1% of Global GHG emissions (Picano et al., 2022), with one department estimated to generate equivalent of 4.6 kilotons of CO₂e annually, comparable to annual emissions from 1100 gas-powered cars (Thiel et al., 2024). Propose interventions and solutions improving sustainability across lifecycle, including equipment and artificial intelligence.

Key contributors to the carbon footprint

Scanners: significant energy needed to power and cool scanners. Energy wasted (HVAC) when scanners remain idle (Fig 1). High-definition workstations for reporting. Production and Disposal of energy-intensive machines and contrast pose environmental risks: annually 19-tons of gadolinium is wasted in Europe (Quattrocchi et al., 2024) and 15% syringed contrast wasted (Mariampillai et al., 2023). Intervention Supplies: one facility reports average 8kg of single-use consumables waste per case (Woolen et al., 2022). Unnecessary imaging: Increased reliance on and volume of imaging by clinicians (Fig 2).

Proposed solutions

Adopt cleaner energy: renewable integration. Turning-off devices during idle periods and implementing workflow informatic tools: cost-savings ranging from US \$9,225 to 14,328 per device (Roletto et al., 2024). Synthetic contrast replacing standard contrast. AI-optimized MRI protocols saves potentially 2.036 MWh annually (Reschke et al., 2025) through shortened protocols, reduced artefacts etc (Fig 3). Refurbish and recycle (utilising cradle-to-cradle framework), extending scanner lifespans o through "circular economy". Efficient utilisation of Ultrasound and X-ray (remain underused). Employing carbon-aware referral criteria.

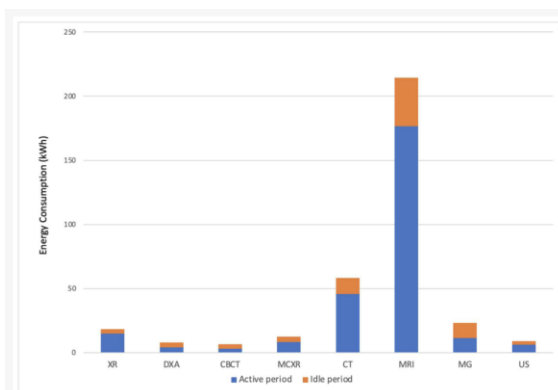


Fig 1: Mean energy consumption (kWh) for each imaging modality (active period and idle period)

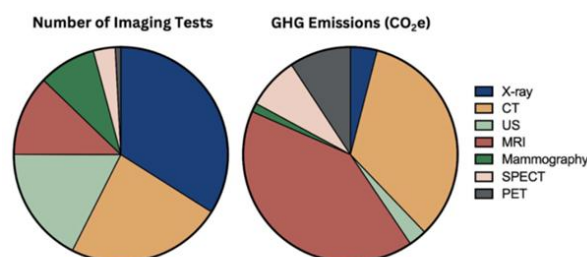


Fig 2: Number of diagnostic radiology imaging tests and associated greenhouse gas (GHG) emissions in a hospital radiology department (Hanneman et al., 2024)

	Scan time reduction	Diagnostic performance (5 point scale rated by radiologists)	Patient throughput	Sustainability calculation	CO2 savings per scan	Model energy training
Conventional	10:33 minutes	4.72/ 5	Time savings could theoretically increase scanner throughput by ~2.8 times for knee MRI	Formula: Savings [kg CO ₂ e] = Scan Time Reduction [h] × Scanner Power Consumption [kW] × Grid Emission Factor [kg CO ₂ e/kWh]	NA	NA
DL-accelerated	3:48 minutes	4.53/5			1.15 kg CO ₂ e due to the 6.75 minute reduction in scan time.	The paper does not quantify the carbon cost of training the DL model, acknowledging it as a complex, one-time upfront cost
Summary	~64% reduction	96.5% agreement between the two protocols				

Fig 3: Summary of findings from prospective study evaluating the clinical and environmental impact of implementing a deep learning (DL)-accelerated knee MRI protocol compared to a conventional diagnostic MRI protocol (Reschke et al., 2025).

Conclusion

Green radiology can affordably reduce emissions without compromising care through staff education, use of efficient scanners, contrast recycling, AI workflows and circular economy.

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P287 System barriers and enablers to radiographers' engagement in research.

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Objectives

Radiographers' current research engagement is low, which negatively affects evidence-based practice. This review aimed to capitalise on the Systems Engineering Initiative for Patient Safety (SEIPS) model to identify relevant work system factors that facilitate or impede radiographers' engagement in research.

Key findings

The barriers of research engagement exceeded facilitators in radiography and have been identified thematically. Primarily barriers related to the organisational level, rather than other elements. Organisation: Subthemes included research culture, Strategy, management, and training, highlighting key barriers (lack of encouragement, unclear roles, limited awareness of research strategy, insufficient time, excessive workload, and inadequate training). Facilitators were only mentioned in the Research Culture subtheme (managerial support and mentorship). Person: Barriers and facilitators were identified and related to two sub-themes (Radiographers' attitudes and experiences), including low motivation and confidence, and insufficient research experience. Facilitators included having a personal interest and higher academic degrees. Tasks: Barriers were identified across three sub-themes (doing, using, and dissemination research), including a lack of research skills, limited use of research evidence in clinical practice, and insufficient awareness of dissemination strategies. Facilitators were identified to conduct and disseminate research, including data collection and oral presentations. External environment: Barriers and facilitators were identified in two subthemes, namely Finance and Radiography research scope, including insufficient funds and the need to collaborate with academic institutions. Tools/technologies: Only one facilitator was mentioned, access to databases. Internal environment: No data.

Conclusion

SEIPS enabled the identification of barriers and facilitators related to the radiography work system, except for the internal environment.

P288 The creation of education frameworks for staff training for radiotherapy treatment delivery

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Radiotherapy clinical education is a constantly evolving landscape, which must remain responsive to both learner and operational requirements.

Over the past two years, The Christie NHS Foundation Trust (TCNHSFT) has undergone a linac replacement programme. The introduction of the Harmony™ linear accelerator, led to new hardware and changes in workflow processes. The new technology highlighted a training gap and the need for an education framework to support staff development. It is recognised that pre and post-registration learners enter the department with different levels of knowledge and learning needs. This requires educationalists and line managers to provide standardised training, which avoids assumption of prior knowledge.

A project team made up of Therapeutic Radiographers from TCNHSFT collaborated to develop an Education Framework. Through focus groups, a comprehensive project plan was created that divided the framework into four key sections: Hardware (medical devices), Oncology Management System, Treatment Delivery, and Imaging. Each subsection included a detailed project plan with defined timelines.

Content mapping was conducted and ensured essential foundation knowledge was established. The content of training packages that build on the foundation knowledge was then devised. Each section of the framework was allocated to smaller project teams, responsible for creating the specific content relevant to their area, and competencies were derived.

A spiral curriculum of competencies, building on knowledge in a sequential and standardised format was created. All training comprises of a training resource, self-marking quiz for assessment, trainer's guide for practical session delivery, assessor's guide for assessment of competence and a learners guide.

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P289 The Society of Radiographers' (SoR) Advancing Practice in Radiography Special Interest Group (APRAD SIG): A community of practice to inform and empower

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Background

Over the past three decades, radiography education and careers have evolved in the UK; increasing emphasis on career development, patient pathways, and workforce transformation have underpinned the advancing practice agenda. In 2022, the College of Radiographers updated its Education and Career Framework, which solidified the six levels of practice with the overt inclusion of enhanced practice to precede the advanced and consultant levels(1).

Purpose

The APRAD SIG was launched at the UKIO Congress in June 2024. It offers an inclusive community of practice for all radiographers working or training as enhanced-, advanced-, and consultant practitioners, as well as radiographers with advancing practice aspirations. Also welcome are those who educate, manage, lead, or conduct research in the advancing practice space. The SIG is intended to be a supportive environment where practitioners can share and grow, reducing feelings of isolation and silo working through peer support and encouragement. Ultimately, by promoting and socialising key workforce developments, the SIG aims to improve patient care by facilitating safe professional growth.

Summary of content

The SIG provides opportunities for networking, discussion, and continuing professional development (CPD). In December 2024 and 2025, the SIG facilitators disseminated a holiday calendar with the aim of socialising relevant publications, supportive resources, and professional development opportunities. The SIG also hosts semi-regular CPD Now endorsed webinars, with topics spanning the supported e-portfolio route, advancing levels of practice, and four pillars. The SIG continues to expand, with 273 members as of January 2026, establishing itself as a valuable resource for radiographers.

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P290 Understanding menopause awareness and support needs within the diagnostic radiography workforce: A quality improvement study

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Introduction

Individuals experiencing perimenopause or menopause often encounter inadequate workplace support (Brewis et al., 2017). Understanding of menopause within the general population remains limited (Hardy et al., 2017). This quality improvement project evaluated awareness, confidence and support needs related to menopause among the diagnostic radiography workforce. The findings will inform future departmental interventions.

Method

We developed a department-wide anonymous questionnaire to assess baseline understanding of menopause. The survey collected quantitative data through multiple-choice and Likert-scale questions, as well as qualitative free-text responses. We distributed it via the monthly departmental newsletter, global email invitations, and posters. All responses were collated and analysed in Excel. A second, optional questionnaire invited staff to share more detailed qualitative accounts. We used thematic analysis to identify any support needs and workplace experiences.

Results

All respondents demonstrated baseline awareness of menopause. However, knowledge gaps were evident, particularly regarding symptoms and workplace impact. Approximately 20% of participants said they would feel uncomfortable discussing menopause-related challenges with their managers. In the second questionnaire, early themes highlighted feelings of being less confident and uncertain about what support was available. Respondents also showed a clear preference for practical adjustments and accessible educational resources.

Conclusion

The findings are comparable with the current literature (Jack et al., 2016), which also reports limited understanding and inconsistent workplace support. The results highlight the need for targeted education, improved managerial confidence and structured, reasonable adjustments within the radiology department. These insights will help to guide a staff-led menopause support hub and future quality improvement initiatives.

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P291 Workforce: our greatest challenge and biggest asset. A regional approach

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Background

Our region has its challenges: 3.1 million people and 8 acute Trusts over a large geographical landscape, stretching from West to East coast, and with significant socioeconomic deprivation. We identified workforce as our biggest challenge, but also our biggest opportunity! We wanted a system-wide and strategic approach to ensure a diverse, highly trained, and happy workforce to provide robust imaging services, for our patients today, and in the future.

For over 10 years, the region has taken a holistic approach to the development of the multiprofessional workforce, in alignment with the NHS Long Term Workforce Plan¹ and the Richards Report², and in response to shortfalls across imaging and the ever-increasing demand upon services. We built upon this in 2024 creating a regional Workforce Strategy, identifying requirements across all staff groups (clinical and non-clinical, multiple professional backgrounds), generating conversation, garnering agreement from key stakeholders, winning “hearts and minds” of staff and showing the benefits of collaboration. We created a joint CPD and Education Plan between the Imaging Network and Academy; an inclusive approach to robust education and training of imaging staff, aiming to promote recruitment and retention, aid service planning, improve job satisfaction and support skill mix.

Purpose

This best practice piece aims to share the work of the Imaging Network and Academy in one region and promote the benefits of a collaborative, strategic and holistic approach to workforce development.

Summary

The poster will demonstrate stakeholder mapping, strategic planning, collaborative working, journey and impact so far of regional workforce initiatives.

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P292 Hidden costs of diagnostic mistakes: A descriptive study of guilt, shame, and scapegoating among sonographers practising in the United Kingdom

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Introduction

Mistakes are part of ultrasound practice, yet the emotional impact of mistakes on sonographers remains poorly understood. This study explored the emotional consequences of mistakes among UK sonographers and identified strategies to mitigate their effects.

Methods

Fifty-three sonographers were recruited through professional networks from December 2024 to February 2025. The survey, hosted on the JISC platform, included quantitative items and open-ended questions. Quantitative data were analysed using descriptive statistics and nonparametric tests in SPSS v28, while qualitative data were coded thematically using Braun and Clarke's framework in NVivo v12.

Results

Thirty-nine respondents reported at least one diagnostic-type error in the past year. Mistakes occurred across all settings ($p = 0.107$) and experience levels ($p = 0.624$). Guilt (45.3%), shame (25%), and perceptions of scapegoating (33.3%) were common. Most participants (69%) reported receiving emotional support after making mistakes ($N = 52$; no response = 1). Coping strategies varied, though none were significantly associated with setting or experience ($p > 0.05$). Four themes emerged from qualitative analysis: workplace culture and interpersonal dynamics, emotional and psychological impact, reporting and learning from Mistakes, and recommended support and mitigation strategies.

Conclusion

Diagnostic mistakes are common and emotionally challenging for sonographers. Existing institutional responses are perceived as insufficient. A just culture that prioritises psychological safety supports staff wellbeing, retention, and patient safety.

Implications for Practice

Organisations must move beyond policy statements and provide confidential reporting pathways, accessible psychological support, and managers trained in empathetic communication to ensure responses to mistakes prioritise learning rather than fault.

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P293 A collaborative regional approach to standardising radiotherapy education and training to reduce variation and improve workforce confidence and capability

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Background

Fragmentation in radiotherapy clinical education leads to practice variation and duplication of effort by local Practice Educators (PEs). A regionally funded training approach was established to develop standardised Regional Learning Packages (RLPs) across a multi trust network, improving workforce confidence and consistency while supporting PE capacity. This work supports the objectives of the NHS Long Term Workforce Plan(1) by strengthening education quality, improving workforce confidence and retention, and enabling sustainable use of training resources.

Method

A multi-tiered Training Needs Analysis (TNA) utilised conversational focus groups and quantitative confidence rating surveys across four cohorts: students/apprentices, early-career, mid-level, and senior clinical staff. This data driven approach identified high risk, high leverage capability gaps. To maximise efficiency within a 4.5 month timeframe, RLPs were developed by curating and standardising “gold standard” local resources into a unified regional framework.

Results

The TNA identified two priority themes: IGRT/Imaging Verification (with emphasis on clinical reasoning) and Leadership Skills (particularly supervisory responsibilities and effective communication). Findings demonstrated a marked “confidence cliff” for early career staff transitioning into supervisory roles and notable training variation across sites. Success metrics include 100% regional adoption of RLPs, measurable increases in radiographer confidence across identified gaps, and reduced repetition of PE led training, demonstrating tangible return on investment (ROI).

Conclusion

Regional standardisation mitigates risk associated with practice variation while increasing PE capacity. This model enables rapid deployment of high-quality resources that strengthen the workforce pipeline and provides a scalable framework to justify dedicated regional educational roles supporting long term workforce sustainability.

1. NHS England (2023) NHS Long Term Workforce Plan. London: NHS England. Available at: <https://www.england.nhs.uk/publication/nhs-long-term-workforce-plan/> (Accessed: 5 February 2026).

P295 Education and career frameworks for therapeutic radiographers – a mapped analysis

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Background

Therapeutic Radiographers (TRs) have access to education and career frameworks designed to guide development and support lifelong learning. The extent to which frameworks align, complement one another, or support development within the TR workforce is unclear. This mapped analysis compares the Aspirant Cancer Career and Education

Development Framework (ACCEND Framework, 2023)(ACCEND) and the Education and Career Framework (College of Radiographers, 2023)(COR) to explore alignment and future implications.

Method

TRs independently conducted a thematic analysis of both frameworks across six levels of professional practice, applying a structured mapping process to compare content. Mapped statements were reviewed iteratively assessing thematic accuracy and areas of alignment. Unmapped statements were recorded for further review, while those lacking equivalence or appropriate placement were reviewed jointly to minimise individual bias and ensure consistency.

Results

The analysis identified clear strengths, areas of misalignment and omissions within both frameworks. These discrepancies require TRs to navigate between the two according to their goals, experience, and current practice level. Although both frameworks are informative when used independently, terminology inconsistencies and practice-level mismatches present barriers to alignment. The ACCEND framework more effectively captures cancer-specific aspects of therapeutic radiography, whereas the COR framework provides better coverage of the radiography aspects.

Conclusion

Study limitations include reliance on interpretive mapping, that can be influenced by professional judgement despite efforts to minimise bias, and the exclusion of some framework sections due to size, structure and content. Further investment has been directed toward supporting meaningful engagement with both frameworks across the TR workforce.

1. Health Education England (2023) Workforce, training and education, ACCEND Framework. Available at: <https://www.hee.nhs.uk/our-work/cancer-diagnostics/aspirant-cancer-career-education-development-programme/accend-framework> (Accessed 16 October 2025).
2. College of Radiographers (2023) Education and Career Framework (ECF)(Fourth Edition). Available at: <https://www.collegeofradiographers.ac.uk/education-and-career-framework-ecf> (Accessed 16 October 2025).

P296 Sub-speciality Radiographer role development; A reflection on an innovative multi-modality training approach to advanced/consultant Radiographer practice

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Introduction

Radiographer advanced practice (AP) within the UK is well established with 95% of NHS trust reporting AP Diagnostic Radiography roles as part of their workforce (Woznitza et al, 2021). Radiologists practice over the previous decades has increasingly become sub-speciality focused (Ruprecht et al, 2023). Currently this approach is not widely adopted in the Radiographer workforce with the majority of AP roles typically being within one imaging modality. There is a lack of literature exploring the topic.

Methods

A Business case and job planning was undertaken to propose the role development of speciality specific Radiographer practice in MSK imaging aligned to the multi professional framework (HEE, 2017). The aim was to undertake MSK ultrasound, plain film reporting and image guided procedures (fluoroscopy and ultrasound). To support this MSK ultrasound, appendicular and axial x-ray reporting and advanced practice qualifications were undertaken concurrently along with in house interventional training. Support and advocacy from managers along with Radiologists and mentors were essential for this development.

Results

Reflecting on this training strategy; This provided a more rounded approach to clinical education and development, with improved clinical examination skills training, multidisciplinary working and allowed a greater depth of system-based knowledge.

Conclusion

Taking a multimodality approach allowed the opportunity to gain a greater depth of knowledge and mastery in a single sub speciality. The increased knowledge, understanding and transferable skills has improved patient care. Challenges exist but Radiographer advanced and consultant development by sub speciality rather than limited by modality should be explored further.

Health Education England. Multi-professional Framework for Advanced Clinical Practice in England [Internet]. Health Education England. 2017 p. 1–23. Available from: <https://www.hee.nhs.uk/sites/default/files/documents/multi-professionalframeworkforadvancedclinicalpracticeinengland.pdf>

Mitja Ruprecht, Ricci P, Prosch H, Miraude Adriaensen. Subspecialisation in radiology in Europe, a survey of the accreditation council of imaging. *Insights into Imaging*. 2023 Sep 25;14(1)

Woznitza N, Pittock L, Elliott J, Snaith B. Diagnostic radiographer advanced clinical practice in the United Kingdom – A national cross-sectional survey. *BJR | Open*. 2021 Jan;3(1):20210003

P297 Putting patients before protocols: Optimizing emergency CT utilization in a resource-limited on-call radiology service

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Background

Emergency CT imaging during overnight on-call hours is often guided by rigid protocol pathways. In resource-limited services with reduced overnight staffing, strict adherence may fail to capture clinical complexity, potentially increasing radiation exposure and impacting patient management.

Aim

To audit emergency on-call CT utilization, assess alignment with local imaging protocols, and evaluate early outcomes following patient-centered optimization strategies.

Methods

Over 40 days, 30 consecutive emergency CT requests were reviewed against local imaging protocols. Collected data included protocol alignment, diagnostic outcomes, incidental findings, estimated radiation exposure (CT brain ~2 mSv; HRCT chest ~3–4 mSv; CT KUB ~7–8 mSv), scan time, and reporting turnaround time. We assessed the impact of imaging on patient management, subsequent patient disposition, and whether enhanced clinician–radiologist communication could optimized imaging decisions. Patient-centered interventions were introduced, and early trends analyzed.

Results

Of 30 CTs, 13 (43%) fully aligned with protocol criteria, while 17 (57%) did not. Ten (33%) revealed incidental findings unrelated to the original indication, several influencing subsequent managements. All scans were completed in <10 seconds, and all reports delivered within one hour of acquisition.

Conclusion

Initial results suggest that patient-centered optimization of emergency CT utilization may improve diagnostic relevance, support timely patient disposition, and reduce unnecessary radiation in resource-limited settings. This audit provides the basis for a simple checklist focusing on clinician–radiologist communication, thorough clinical history, and protocol-adherent scan acquisition, which may optimize imaging resources and minimize radiation exposure, particularly in low-resource healthcare settings. Completion of the audit cycle will assess sustainability and protocol refinement.

1. Bouëtté, A., Karoussou-Schreiner, A., Ducou Le Pointe, H., Grieten, M., de Kerviler, E., Rausin, L., Bouëtté, J.C. and Majerus, P. (2019) National audit on the appropriateness of CT and MRI examinations in Luxembourg. *Insights into Imaging*, 10, article 54. doi:10.1186/s13244-019-0731-9 — a multicentre audit assessing CT appropriateness against referral guidelines.
2. Umer, U.S., Khattak, A.N., Khan, A.N. et al. (2020) Audit of CT head request appropriateness for patients referred from emergency department. *Journal of Rehman Medical Institute*, 6(2), pp. ??–??. DOI:10.52442/jrmi.v6i2.178 — an audit evaluating whether emergency CT head referrals met clinical NICE criteria.
3. Ahmed, S.S., Onyambu, C.K., Omamo, E. and Odhiambo, A. (2022) Appropriateness of imaging modality choice by doctors at Kenyatta National Hospital Accident & Emergency Department. *South African Journal of Radiology*, 26(1), a2367 — a study showing inappropriate CT imaging requests and highlighting radiation exposure risks from imaging misuse.
4. Mettler, F.A., Huda, W., Yoshizumi, T.T. and Mahesh, M. (2008) Effective doses in radiology and diagnostic nuclear medicine: a catalog. *Radiology*, 248(1), pp. 254-263 — provides typical effective dose values for CT brain, chest and abdomen useful for radiation estimates. Data reproduced in MSD Manual Professional Edition.

P298 Confidence of Therapeutic Radiographers in providing mental health support: A single Centre study

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The mental health (MH) impact of a cancer diagnosis significant, with anxiety, depression and suicidal thoughts reported before, during and post treatment (Brunckhorst et al.). Therapeutic Radiographers (TRs) deliver radiotherapy to approximately 50% of people diagnosed with cancer and are therefore well placed to identify and support patients experiencing MH concerns. However, TR confidence providing MH support not well understood. Following ethical approval, a single-centre mixed-methods study was conducted to explore TR confidence levels, support provided and perceived barriers to providing MH care to patients undergoing radiotherapy. Twelve TRs completed the questionnaire. Participants reported confidence in supporting patients expressing anxiety (67%) and depression (58%). However, 67% did not feel confident supporting patients expressing suicidal thoughts. Spearman's rank correlation showed no statistically significant relationship between years qualified and confidence levels. Participants commonly offered reassurance and signposted patients to support services for anxiety and depression. Suicidal ideation was primarily viewed as a safeguarding concern requiring escalation. Three themes relating to barriers to MH support emerged: workplace pressures, education and confidence. TRs demonstrated confidence in supporting patient with anxiety and depressive concerns, but were less confidence when patients expressed suicidal thoughts, preferring to involve other professionals. Limited education, time constraints and staffing pressures reduce the level of MH support provided. This is the first study to explore TR confidence and barriers in providing MH care, although findings are limited by a small sample size. Specific MH training for TRs may improve confidence and reduce barriers when supporting patients with MH concerns.

Brunckhorst, O., Hashemi, S., Martin, A., George, G., Van Hemelrijck, M., Dasgupta, P., Stewart, R. and Ahmed, K., 2021. Depression, anxiety, and suicidality in patients with prostate cancer: a systematic review and meta-analysis of observational studies. *Prostate cancer and prostatic diseases*, 24(2), pp.281-289.

P299 A technically challenging case of renal SABR

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Background

A patient with primary renal cell carcinoma (RCC) of the left kidney was referred for stereotactic ablative body radiotherapy (SABR). Patient was classified as medically inoperable. The plan for SABR was ratified at our SABR MDT. The patient was positioned and planned, but treatment could not be delivered due to collision between the left arm and gantry. This was due to positioning compromises required because of left arm weakness. An alternative positioning and immobilisation technique was developed to facilitate safe and accurate treatment and to address the collision risk.

Methods

The patient was re-discussed at SABR MDT and rescanned with arms high on the chest in a custom thermoplastic shell and a plan generated at 26Gy/1# which met standard planning constraints.

Outcomes

Patient's position was successfully reproduced and verified with 3DCBCTs as per local protocol and patient received their single fraction of SABR safely and accurately. Patient had no immediate toxicities, and the lesion was stable at 4 months post treatment. Long term follow-up data is awaited.

Discussion

The patient's comorbidities rendered him inoperable and had the potential to limit our ability to deliver SABR. Therefore, finding an innovative way to position his arms to allow the safe delivery of SABR without gantry collision was crucial as this was the patient's only radical treatment option. This case demonstrates the value of an MDT approach when considering challenging cases so that co-morbid patients or those with a disability are not unnecessarily excluded from accessing SABR treatment.

P300 Categories of translation services and their impact on the delivery of healthcare

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Background

Language barriers occur when radiographers and patients do not share a native vocabulary. It has been established that these barriers can inhibit effective communication and comprehension of healthcare information, sometimes resulting in a lower overall standard of care and/or more limited access to healthcare compared to native speakers of a clinician's language (Slade & Sargent, 2018).

Purpose

This poster critically examines interpreting services commonly used in health care e.g., bilingual staff, face to face professional interpreters, telephone interpreters, online interpreters and ad hoc interpreters, with focus on service delivery and their impact on patient satisfaction (Squires, Sadarangani & Jones, 2020).

Summary of Content

Current evidence indicates that each translation modality has its own strengths and limitations, dependent on clinical situation and patient preference. There is, therefore, no definitive mode that might be deemed as inherently superior. Clinicians must consider issues of urgency, professionalism and sensitivity when selecting a service whilst not losing sight of their professional, legal and ethical obligation for translational accuracy. For example, while the use of family member to translate, may result in more compassionate communication, it does not necessarily guarantee accuracy. [PM1.1] Although accuracy can be improved via professional interpreters, with errors much less likely (Karliner, 2007), this can be impractical in an emergency. Telephone-based services offer cost-effectiveness and faster access to more languages, while online translation tools should be avoided in healthcare settings. Key practical improvements might include better understanding of available services, their advantages and limitations, and when their use is appropriate.

Karliner, L.S., Jacobs, E.A., Chen, A.H. and Mutha, S. (2007) Do professional interpreters improve clinical care for patients with limited English proficiency? A systematic review of the literature. *Health Services Research*, 42(2), pp.727-754.

Slade, S. and Sergeant, S.R. (2018) Overcoming barriers with patients with limited English proficiency. *Annals of Emergency Medicine*, 72(4), pp.372-374.

Squires, A., Sadarangani, T. and Jones, S. (2020) Strategies for overcoming language barriers in research. *Journal of Advanced Nursing*, 76(2), pp. 706–714.

P301 Communication interventions in medical imaging departments for autistic patients. A systematic review exploring person-centred care practices

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Background

Autistic people often face significant barriers when accessing healthcare, with communication challenges being a major contributor (Doherty et al., 2023). Literature highlights limited confidence among radiographers when communicating with autistic patients (Stogiannos et al., 2023), which may reduce accessibility of imaging services. This review aimed to identify communication interventions used in radiography departments and evaluate their role in supporting autistic patients' access to medical imaging.

Method

The protocol was registered on PROSPERO and followed PRISMA guidelines. Eight databases were searched between July-August 2025, using keywords such as "Radiog*", "communication strateg*", and "Autis*". In total, 5,531 articles were screened by title and abstract, with 26 full-text articles reviewed against pre-determined inclusion/exclusion criteria. Six studies were included in the review. Risk of bias was assessed using relevant CASP tools. Findings were synthesised using the Pillar Integration Process (Johnson et al., 2019).

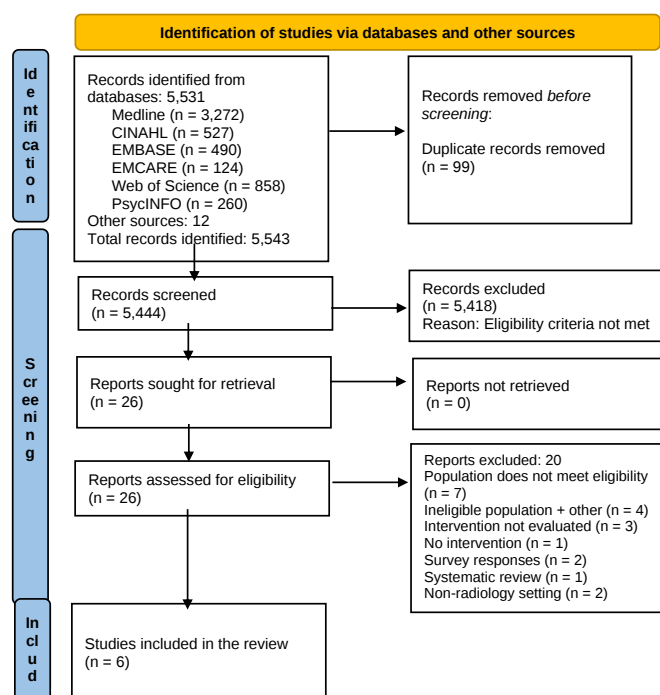
Results

Most interventions were explored in an MRI setting (n=3) with a paediatric focus (n=5). Common interventions included picture schedules, procedural videos, and iPad app social scripts. Three central themes were developed from the PIP: 1) flexibility of communication approaches; 2) patients/caregivers' imaging experience, and 3) multifactorial determinants of a successful intervention.

Conclusion

The findings suggest that flexible and multi-modal approaches to communication adjustments can meaningfully improve imaging experiences and scan completion rates for autistic individuals. However, there is a need for larger sample-size studies to improve generalisability across a wide range of imaging modalities, and further exploration of communication interventions for adults to improve imaging access for this group.

A PRISMA flow diagram of the review process



1. Doherty, M., McCowan, S., and Shaw, S.C.K. (2023) Autistic SPACE: a novel framework for meeting the needs of autistic people in healthcare settings. *Br J Hosp Med*. <https://doi.org/10.12968/hmed.2023.0006>
2. Johnson, R.E., Grove, A.L., and Clarke, A. (2019) Pillar Integration Process: A Joint Display Technique to Integrate Data in Mixed Methods Research. *J Mix Methods Res*. 1;13(3):301–20.
3. Stogiannos, N., Pavlopoulou, G., Papadopoulos, C., and Walsh, G. (2023) Strategies to improve the magnetic resonance imaging experience for autistic individuals: a cross-sectional study exploring parents and carers' experiences. *BMC Health Serv Res* 23, 1375.

P302 Decisions Decisions: what to do when the decider cannot decide 'RAD-CHECK' - a practical guide for imaging decisions when capacity might be impaired

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Background

NHS England (2024) reports that, at any one time, 1 in 4 hospital beds are occupied by a person with dementia, a diagnosis that has implications when considering whether a person can, or cannot, consent to their imaging examination. Should a practitioner continue with a procedure without first gaining valid consent, that practitioner could find themselves exposed to allegations of trespass; however, for consent to be valid, the person giving their consent must have the capacity to do so.

Method

Semi-structured interviews were conducted with N = 18 diagnostic radiographers, all working in the UK. Interviews explored participants' experiences and understanding of assessing capacity in persons with dementia, as well as decision-making when capacity was determined to be lacking. Data were analysed using thematic analysis to identify patterns and themes within the dataset.

Results

The findings demonstrate that establishing capacity was a source of difficulty for the radiographers interviewed. Determining when it was appropriate to proceed with an examination was an area of particular concern, given the legal ramifications associated with proceeding without valid consent. Participants highlighted the need for clear guidance and checklists to support their decision-making in these situations.

Conclusions

Based on these findings, a checklist titled RAD-CHECK (Spacey et al 2026) was developed to guide the diagnostic imaging workforce in their decision-making when a person's capacity may be lacking.

NHS England (2024) RightCare dementia scenario. Available at: <https://www.england.nhs.uk/long-read/rightcare-dementia-scenario/>
Spacey A, Booth L, Bowden S, Miller PK. (2026) Exploring diagnostic radiographers' experiences and understandings of informed consent and capacity assessment during general radiography imaging examinations of persons living with dementia: A qualitative interview study of UK practice. *Radiography*. 2;32(2), doi: 10.1016/j.radi.2025.103309.

P303 Enhancing accessibility: supporting patients with dyslexia in understanding hospital appointment letters

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Background

Dyslexia affects approximately 10% of the UK population (British Dyslexia Association, 2025). Individuals with dyslexia encounter significant barriers in healthcare due to complex and unsuitably formatted medical documentation (Bradley, 2023). These barriers can induce visual stress and confusion, undermining the principles of patient-centred care that promote patient engagement (Pilnick, 2022). Without adapting medical communication to specific accessibility needs, healthcare providers cannot fulfil the ethical mandate of an inclusive approach (Dowell et al, 2016).

Method

A scoping review was conducted to identify best practices for accessible medical communication for dyslexic patients. Data were synthesised from peer-reviewed articles and grey literature from reputable healthcare and dyslexia organisations, focusing on formatting and linguistic interventions aligned with patient-centred models.

Results

The review highlighted that adopting dyslexia-friendly communication is crucial for equitable patient care. Key recommendations include use of sans-serif fonts, increased line spacing, left-aligned text, simplified language, and avoidance of complex medical jargon. These adaptations reduce anxiety and improve engagement for dyslexic patients. However, financial constraints, lack of standardised templates, and administrative resistance present barriers to implementation. Healthcare organisations must address these systemic challenges to ensure accessibility becomes embedded practice.

Conclusions

Adopting dyslexia-friendly communication is fundamental to delivering equitable patient-centred care. Healthcare providers must balance the initial costs of redesign against the long-term clinical benefits of improved health literacy and patient engagement. Future initiatives should focus on standardised, co-designed templates developed in partnership with dyslexic patients to ensure that accessibility becomes a sustainable baseline for all medical correspondence.

Bradley, J. (2023) Healthcare language: how to avoid words that hurt: person-centred nursing care requires an understanding of how certain terms may belittle, frighten or disempower. *Mental Health Practice*, 26(5), pp.16–17.
British Dyslexia Association (2025) What is dyslexia? Available at: <https://www.bdadyslexia.org.uk/dyslexia/about-dyslexia/what-is-dyslexia>

Dowell, J., Snadden, D. and Williams, B. (2016) *Patient-centred prescribing: seeking concordance in practice*. 1st edn. Boca Raton, FL: CRC Press.

Pilnick, A. (2022) *Reconsidering patient centred care: between autonomy and abandonment*. Bingley: Emerald Publishing Limited.

P304 Health promotion in ultrasound: Are sonographers "Making every contact count"

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Background

The NHS plan published by the Department of Health and Social Care emphasises the urgent need to transform service delivery, with a focus on prevention and public health. Allied Health Professionals (AHPs) are well-positioned to support this agenda through initiatives such as Making Every Contact Count (MECC). Sonographers, who typically have longer appointments than general practitioners, are well placed to hold health-promoting conversations across a diverse range of clinical settings, but their engagement with this is not well understood.

Objectives

To investigate knowledge and understanding of health promotion (HP) amongst sonographers. To identify current HP activities undertaken by sonographers, and examine perceived enablers and barriers. To explore sonographers' perceptions of their ability to incorporate HP into their practice.

Aim

To investigate current sonographer engagement with HP to inform development of resources to enable sonographers to feel confident and competent in delivering brief, patient-centred health interventions

Method

Online convenience sample survey of opened and closed questions distributed through professional networks.

Results

Responses from 261 UK sonographers revealed that 41% already engage in HP, while 39% felt that HP is not part of their role. There was a willingness to increase HP activities, but time, education, role ambiguity and systemic constraints were reported as barriers.

Conclusion

There is a potential untapped HP resource across the profession. Departmental culture shifts, training and clear guidance from professional bodies is required to enable sonographers to feel confident and competent in delivering brief, patient-centred health interventions during routine care.

P305 Healthcare for the Transgender Community: Do current gender-specific screening programmes neglect the needs of the transgender patient

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Background

Although statistics indicate that approximately 500,000 transgender people live in the UK, true numbers are unknown, as many people conceal their status due to fears of stigma, victimisation and discrimination. Such fears are relevant to healthcare, as transgender patients report instances of direct and indirect discrimination within healthcare provision (Connolly et al, 2025). This can impact a person's willingness and ability to access care, especially services that are not deemed as a priority i.e. screening programmes.

Purpose

This poster examines the experience of transgender patients when accessing gender-specific screening services.

Summary of content

Amongst the transgender community, screening needs are anatomy driven and patient specific, which leads to complexity in individual screening needs. A key element in NHS screening programmes is the automation of appointment invitations based on binary gender markers. Consequently, transgender patients may be excluded from necessary screening or receive unnecessary invites, which risks exacerbating gender dysphoria and trauma for the patient. The proposed solution of self-referral may reduce engagement with screening services, as it does not account for the barriers transgender people face when proactively engaging with health services beyond gender clinics (NHS, 2025; Ferroni et al, 2012). Studies show that invitation-based screening yields better patient engagement, and subsequently earlier detection and better prognosis, whilst safeguarding patients' dignity. Such 'anatomy-based' care is seen in dedicated transgender clinics which is shown to promote patient engagement (Higgins Trust, 2026). Without effective patient administration processes, current screening guidelines risk further discrimination of an already marginalised group.

Connolly, D.J., Meads, C., Wurm, A., Brown, C., Bayliss, J., Oakes-Monger, T.C. and Berner, A.M. (2025). Transphobia in the United Kingdom: a public health crisis. *International Journal for Equity in Health*, 24(1).

Ferroni, E., Camilloni, L., Jimenez, B., Furnari, G., Borgia, P., Guasticchi, G. and Rossi, P.G. (2012). How to increase uptake in oncologic screening: A systematic review of studies comparing population-based screening programs and spontaneous access. *Preventive Medicine*, 55(6), pp.587–596.

NHS (2025). NHS England» Operational and delivery review of NHS adult gender dysphoria clinics in England. [online] England.nhs.uk. Available at: <https://www.england.nhs.uk/long-read/operational-and-delivery-review-of-nhs-adult-genderdysphoria-clinics-in-england/#key-findings>. (Accessed 27/12/2025)

The Higgins Trust (2026). Clinics and resources for trans and non-binary people. [online] Available at: <https://tht.org.uk/sexual-health/trans-people/resources>. (Accessed 27/12/2025).

P306 Is a social prescription under prescribed within radiography departments?

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¹Institute of Health, University of Cumbria, United Kingdom, ²Tameside and Glossop Integrated Care NHS Foundation Trust, United Kingdom

Background

Social prescribing complements clinical care by signposting individuals to services that promote health and wellbeing, such as smoking cessation and recreational activities, without employing medical prescriptions. UK health and wellbeing indicators suggest increasing need for preventative approaches. Radiographers can support this through 'making every contact count,' enhancing brief interactions with patients to promote healthy lifestyles (PHE, 2020). However, it has been demonstrated that that 50% of Allied Health Professionals do not know how to signpost patients, with radiographers significantly implicated in this figure (PHE, 2019). Despite available frameworks (SoR, 2020; Lowe & Hindle, 2025), uptake within radiography departments remains limited.

Purpose

This poster explores social prescribing as a practice tool in radiography, reviewing the evidence base supporting its effectiveness, outlining existing frameworks available to radiographers, and examining barriers to implementation within diagnostic imaging departments.

Summary of Content

Evidence synthesized from 18 sources demonstrates substantial benefits of social prescribing initiatives. Financial analysis shows returns between £2.14-£8.56 for every £1 invested, while clinical data indicates 15.4%-23.6% reduction in hospital attendance following social prescription access (NASP, 2024). Practical frameworks are presented including the Society of Radiographers' AHP Social Prescribing Framework (2020), HCPC Standards of Proficiency (HCPC, 2023), and the new AHP Public Health Strategic Framework 2025-30 (Lowe & Hindle, 2025). Barriers to implementation are examined alongside practical guidance on incorporating 'making every contact count' ideals into routine radiographic practice. It is demonstrated how social prescribing aligns with professional standards and supports radiographers in expanding their contribution to preventative healthcare.

Health and Care Professions Council (2023) Standards of proficiency for radiographers. Available at: <https://www.hcpc-uk.org/globalassets/standards/standards-of-proficiency/reviewing/radiographers---sop-changes.pdf>

Lowe, J. and Hindle, L. (2025) New AHP public health strategic framework released for 2025-30. Allied Health Professions UK Public Health Strategic Framework. Available at:

https://www.ahpf.org.uk/files/AHP%20UK%20Public%20Health%20Strategic%20Framework%202025-2030_final+links.pdf

National Academy for Social Prescribing (2024) New report shows impact of social prescribing on health service use and costs. Available at: <https://socialprescribingacademy.org.uk/resources/new-report-shows-impact-of-social-prescribing-on-health-service-use-and-costs>

Public Health England (2020) Making every contact count: evaluation guide for MECC programmes. Available at:

<https://www.gov.uk/government/publications/making-every-contact-count-mecc-practical-resources/mecc-evaluation-guide-2020>

Royal Society of Public Health (2019) Driving forward social prescribing: a framework for allied health professionals. Available at:

<https://www.rsph.org.uk/our-work/resources/ahp-social-prescribing-frameworks.html>

The Society of Radiographers (2020) A new framework for AHP social prescribing. Available at: <https://www.sor.org/News/Ezine/A-new-framework-for-AHP-social-prescribing>.

P308 Using an experience-based design approach to improve patient experience in community diagnostic imaging services

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Background

Community Diagnostic Centres (CDC) have been developed to increase access to diagnostic imaging and reduce pressure on acute services². While operational performance is routinely measured, there is limited large scale evidence describing patient experience across the diagnostic pathway. Experience Based Design (EBD) offers a structured approach to capturing emotional responses at key touchpoints in the patient journey, informing service improvement within imaging settings¹. Applying EBD at scale provides an opportunity to better understand how patients experience referral, arrival and diagnostic testing within CDC pathways and identify areas for improvement.

Purpose

This work demonstrates the application of EBD methodology to understand patient experience within CDCs, identify touchpoints influencing emotional responses during diagnostic imaging pathways, and share patient informed improvement opportunities.

Summary of Content

This poster presents findings from a national EBD programme, capturing feedback from 13,000+ patients attending over 100 CDCs across two study cycles. An emotional-mapping survey, co-designed with patients, explored experiences across six touchpoints: referral, arrival, waiting, communication with staff, undergoing tests, and leaving the service. The digital approach streamlined data collection, and self-serve reporting enabled CDC teams to access insights quickly. Overall, results showed positive experiences, particularly regarding staff communication and departure from the service. Negative emotions were reported in small numbers and were often linked to referral and arrival, highlighting challenges with information provision and navigation. Comparative analysis showed improvements across touchpoints. Supplementary responses indicated satisfaction with facilities, while clarity of directions and pre-appointment information required development. The poster presents emotional maps, key themes, and patient-generated improvement suggestions.

Cycle 1
2023
N=5,502

Cycle 3
2025
N=7,114



Figure 1: Comparison of Cycle 1 (2023) and Cycle 2 (2024) Emotional Maps for CDC's participating in both cycles of EBD.

1. Bate, P. and Robert, G. (2006) 'Experience-based design: from redesigning the system around the patient to co-designing services with the patient', *Quality and Safety in Health Care*, 15(5), pp. 307–310.
2. Richards, M. (2020) *Diagnostics: Recovery and Renewal – Report of the Independent Review of Diagnostic Services for NHS England*. Available at: <https://www.england.nhs.uk/publication/diagnostics-recovery-and-renewal-report-of-the-independent-review-of-diagnostic-services-for-nhs-england/> (Accessed: 29 January 2026).

P307 Sign-to-Scan: Co-Designing Visual & Signed Ultrasound Pathways for Deaf Maternity Care

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Objective

To improve antenatal ultrasound consultations for Deaf pregnant women by co-developing a visual and sign-supported communication protocol that enhances understanding, reduces anxiety, and supports equity in care delivery.

Introduction

Deaf patients often face significant communication barriers in healthcare, particularly during time-sensitive and emotionally charged appointments such as antenatal ultrasound scans. Traditional reliance on verbal explanation or written English—often a second language for many Deaf individuals—can undermine comprehension and patient agency. This study addresses that gap by embedding Deaf voices in the design of inclusive, multimodal communication tools.

Methods

We conducted a participatory co-design study involving 12 Deaf pregnant women fluent in British Sign Language (BSL), 6 NHS midwives, and 4 obstetric sonographers from two large UK hospital trusts. A mixed-methods approach included:

- Three iterative co-design workshops using journey mapping and prototyping
- One-to-one interviews focused on communication breakdowns
- Simulated ultrasound appointments using prototypes and think-aloud feedback

Prototypes included visual signage, touchscreen-activated BSL video explanations, and a “Deaf-friendly scan checklist” for clinicians. System Usability Scale (SUS), pre/post confidence ratings, and thematic analysis of feedback were used for evaluation.

Results

Post-intervention SUS scores rose from a baseline average of 56 to 88, indicating excellent usability. 92% of Deaf participants reported improved understanding of the scan process. Reported anxiety dropped by 40%, and clinician confidence in delivering care to Deaf patients increased by 63%. Qualitative themes included “feeling seen,” “clearer expectations,” and “shared control.”

Conclusion

Embedding Deaf-led design into ultrasound communication pathways significantly enhances care quality and patient experience.

P309 Barriers and facilitators to infection control adherence among radiation therapists

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Introduction

Infection prevention and control (IPC) is crucial in radiotherapy departments to prevent the spread of pathogens and ensure the safety of both patients and staff. Radiotherapy presents unique challenges, as patients are often immunocompromised, invasive procedures are frequently performed, and some equipment is shared across multiple patients. This study aimed to assess workplace barriers and facilitators to IPC adherence among radiation therapists (RTs).

Methods

A cross-sectional IPC survey was tailored to RT settings and distributed across Australia. The survey contained a series of closed-ended questions on workplace IPC culture and open-ended questions on adherence to standard and transmission-based precautions.

Results

Overall, 58 radiotherapy staff completed the survey, eight of whom were nurses or radiographers. Seventy-six percent of respondents had a dedicated IPC team, and policies and guidelines were the most sought source of IPC information. There was strong agreement that hand hygiene products were easily accessible and that their department emphasised the importance of IPC. Respondents reported greater time pressure on IPC adherence when managing invasive devices (e.g. cannulas) compared to routine adherence to standard precautions. Communication was a major barrier to IPC adherence, and respondents reported occasional lack of awareness of a patient's infectious status, due to inadequate handovers, lack of notification from the wards, or no documentation in the patient notes.

Conclusion

Common barriers to correct IPC adherence included time pressures and high patient throughput. While workplaces did focus on IPC practices, communication between departments negatively impacted staff's ability to apply additional IPC precautions for infectious patients.

P310 The older person and the digitisation of the NHS (ehealth)

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Introduction

People who are 66+ are 9x more likely to report internet non-use as those younger than 66, often citing the internet being 'too complicated' as a reason for internet non-use (Ueno, Dennis & Dafoulas, 2023). Meanwhile people over 60 reported 'very bad health' at 3x the rate of those under 60 (Office for National Statistics, 2021). In consideration of the rapid digitisation of the NHS in reaction to COVID-19 (Hutchings, 2020) the older person (OP) must be accounted for.

Purpose

To explore barriers and facilitators to the OP when accessing ehealth.

Summary of content

OP in a lower socioeconomic position are more likely to be affected by things such as a lack of device access according to data from OFCOM (2024). They are also more likely to experience digital anxiety (Chadwick et al, 2024). Family support can be empowering to OP's digital abilities though they can be ineffective teachers (Kottl et al, 2021). This could also contribute to unequal power dynamics and ageist stereotypes (Carlo & Bonifacio, 2020). Educational training for specific healthcare tools have been helpful for other demographics and research from multiple studies indicate interest from OP in education in digital tools. Competent user interface is more likely to positively affect OP as they correlate the 'usefulness' of a digital tool to its 'ease of use' more than other age groups (Alkire et al, 2020).

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P311 Exploring patient communication support tools available in radiology departments

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Background

Patient-centered care emphasises the need for diverse communication methods to interact with patients who have varying health literacy, cultural backgrounds, and individual needs. It is vital for optimal health outcomes, yet significant portions of the population experience communication or sensory impairments. Identifying gaps in knowledge and awareness of these communication methods is crucial to help highlight areas for improvement, contributing to a more inclusive and equitable healthcare environment. This is of particular importance in fast-paced radiology departments, where time is limited & effective communication plays a key role in delivering safe, high-quality healthcare.

Methods

A qualitative approach was employed, involving virtual interviews with participants across all Health regions allowing for geographical spread. Data regarding experiences with sensory, developmental, and language impairment supports were analyzed using thematic analysis.

Results

Findings revealed significant gaps in staff awareness and the availability of essential tools, including Sign Language interpreters, braille, and communication boards. Inconsistent practices across sites and the use of unreliable methods, such as Google Translate, raised critical concerns regarding patient safety and informed consent. Challenges in supporting patients with developmental conditions were also prominent.

Conclusion

Significant gaps exist in the availability and staff awareness of communication support tools in radiology departments. There is a pressing need for improved access to professional interpreters, assistive technologies, and targeted staff training. Addressing these issues will enhance patient care, promote inclusivity, and ensure all patients receive equitable care.

P312 Evaluating patient care in an automated world: Adapting the 15 Steps Toolkit

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Background

Have you ever wondered what your department or ward feels like for patients & visitors? The Older Persons Medicine Care Group (OPMCG) at Queen Alexandra Hospital, Portsmouth did and used the NHSE 15 Steps Challenge toolkit (NHSE, 2017) to tell them.

Purpose

Wishing to make a difference for in-patients who could not engage with standard online feedback platforms, the OPMCG used independent volunteers to make observations and comment under the toolkit categories of “welcoming, safe, caring and involving, and well organised and calm” during a series of scheduled ward visits over 49 days between June and August 2025.

Summary of Content

Using a thematic analysis approach, a total of 195 qualitative feedback phrases were identified and ranked as positive (n = 135, 69%), neutral (n = 13, 7%) and areas to consider (n = 47, 24%). These findings supported ward teams in answering the question “what would good, very good or excellent care” look like and to make appropriate improvements where possible. Following this experience the toolkit checklist was reviewed in January 2026 to develop a bespoke checklist for in-patient cancer services. This will be deployed in early Spring and other in and outpatient areas have expressed an interest in taking up the challenge during the year.

National Health Service England (2017, November 15). The 15 Steps Challenge: Quality from a patient’s perspective; An inpatient toolkit. <https://www.england.nhs.uk/wp-content/uploads/2017/11/15-steps-inpatient.pdf>.

P313 “Not all autistic people require the same support, but there are some common things that would help a lot of us”: Autistic individuals’ experiences of care in Radiology (AutRad)

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Background

Environmental stimuli in Radiology departments can overwhelm autistic individuals, potentially leading to sensory overload (Mason et al., 2019). Autistic responses can be misinterpreted by healthcare professionals as non-compliance (Corden et al., 2022), contributing to poorer health outcomes (Doherty et al., 2023; Shaw et al., 2024). There is a paucity of published literature which explores autistic adults' lived experiences of radiology services; this study aimed to address this knowledge gap, and identify ways to support inclusive, person-centred care.

Methods

A CoRIPS-funded, UK-wide, anonymous, online survey was developed with autistic co-researchers (ETH2425-2255). The Qualtrics survey included open and closed questions to capture autistic adults' experiences of Radiology departments. Descriptive statistics identified trends and group differences, while free-text responses underwent qualitative content analysis.

Results

Thirty-eight autistic adults responded. Although 53% were satisfied with their care overall, 55% were not asked about reasonable adjustments, and 43% felt their care needs were unmet. Only 10% disclosed their autistic identity. Three coding clusters were developed from the qualitative content analysis: 1) Personal experiences of the Radiology environment and appointment; 2) Individuals' feelings when attending appointments, and 3) How individualised care in Radiology can be enhanced, reflecting feelings of judgement, ineffective person-centred approaches, and suggesting Radiographers' awareness of autistic individuals' needs was lacking.

Conclusion

Despite some positive interactions, respondents identified several areas for improved care practice in Radiology. Reluctance to disclose autistic identity highlights the need for cultural change to ensure safe, supportive environments which prioritise open communication. Without this, truly individualised care cannot be achieved.

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