

**Method:** A narrative review methodology was used to conduct this study. A variety of search terms were used to gather papers; literature was obtained from various databases. Inclusion and exclusion criteria helped to focus the review e.g; literature from the last 10 years. A relevant CASP tool was used to review the literature quality and a PRISMA flowchart shows the article filtration details. Articles passing the rigorous selection procedure were of high quality and relevance to this study's aims.

**Method:** Only five papers were eligible for the review. The ranges of CT sensitivity were 25.00%-87.00%, specificity 85.70%-100.00%. rMRI with GRE sequence sensitivity was 83.20%-92.80%, specificity 90.40%-96.20%. CT with rMRI with GRE sequence showed a sensitivity of 86.00%-90.00%.

**Conclusion:** The review concluded that rMRI scans with a GRE sequence increased sensitivity. However due to the lack of papers available further research is required before these findings can influence future practice.

1. Joyce, T. Gossman, W. and Huecker, M. (2020) 'Pediatric Abusive Head Trauma', National Center for Biotechnology Information (NCBI). Available from: <https://www.ncbi.nlm.nih.gov/books/NBK499836/> [cited 18 November 2021]. 2. Kleinman, P. (2009) 'Diagnostic Imaging of Child Abuse', American Academy of Pediatrics, 123(5), pp.1430-1435. doi: 10.1542/peds.2009-0558

## **G5.6 Building a paediatric strategy for mobile fluoroscopy - three trusts, 80 units and one MPE**

[Andrea Williamson](#)

*Queen's Medical Centre*

Children are more radiosensitive than adults because they are growing at a faster rate [1]. For this reason, IRMER 2017 regulation 12 "Optimisation" requires that particular attention must be paid in relation to medical exposures involving children [2]. Although mobile fluoroscopic procedures are lower effective dose than many imaging investigations [3], there are a lot of them carried out. Paediatric use of mobile fluoroscopy commonly includes surgical and orthopaedic procedures related to physical injuries - orthopaedic pinning, manipulation under anaesthetic, open reduction and internal fixations, for example [4]. Historically many mobile fluoroscopy units were used with adult exposure curves, relying on the automatic brightness control to scale the exposure to the size of the much smaller patient, but this doesn't fulfill the obligation of paying particular attention. Across three large trusts and 80 mobile fluoroscopy units, various strategies were developed to improve paediatric protocols quickly. Although there is room for further in-depth optimisation work for specific procedures, the broad strategies outlined in this poster are a first step in the right direction.

1. Radiation risks from medical x-ray examinations as a function of the age and sex of the patient. HPA CRCE 028. Wall BF, Haylock R, Jansen JTM, Hillier MC, Hart D and Shrimpton PC, 2011. <https://www.gov.uk/government/publications/medical-x-rays-radiation-risks-by-age-and-sex-of-patient>  
2. The Ionising Radiation (Medical Exposure) Regulations 2017. Statutory Instrument 1322. Crown Publishing. <https://www.legislation.gov.uk/uksi/2017/1322/contents/made>  
3. Frequency and collective dose for medical and dental x-ray examinations in the UK. HPA CRCE 012. Hart D, Wall BF, Hillier MC and Shrimpton PC, 2008. <https://www.gov.uk/government/publications/medical-and-dental-x-rays-frequency-and-collective-doses-in-the-uk>  
4. Local paediatric dose survey for mobile fluoroscopy, author's own.



## **Proffered papers: Education 1**

### **H5.1 Qualitative content analysis of image interpretation education in UK pre-registration diagnostic radiography programmes**

[James Marcus<sup>1</sup>](#); [Voyin Pantic<sup>1</sup>](#); [Johnathan Hewis<sup>2</sup>](#)

<sup>1</sup>School of Medicine, University of Leeds; <sup>2</sup>School of Dentistry and Medical Sciences

**Introduction:** Image interpretation is a required capability for all UK pre-registration programmes in diagnostic radiography to meet the needs of graduate practice.(1,2) It also provides a potential educational foundation for future advanced clinical practice. The aim of this study was to explore how image interpretation education is designed, delivered, and assessed within contemporary UK pre-registration diagnostic radiography programmes.

**Methods:** Qualitative content analysis of open-source image interpretation curriculum data extracted from UK Higher Education Institute (HEI) websites for all HCPC-approved diagnostic radiography programmes. Extracted search data was initially coded and then identified into themes and sub-themes using thematic analysis.

**Method:** 34 pre-registration programmes across 27 UK HEIs were included in the study. There was marked variability in the open-source information available for analysis. Three overarching themes emerged; image interpretation education vision, operationalisation, and delivery and assessment.

**Conclusion:** This study identified significant heterogeneity in all aspects of UK pre-registration image interpretation education which may suggest an equal heterogeneity can be expected in the image interpretation knowledge, skill, confidence between newly registered practitioners. There may be a need for clearer expectations on HEIs by professional and regulatory bodies to ensure consistency in pre-registration image interpretation education.

1. Health & Care Professions Council. (2013). Standards of proficiency - radiographers. HCPC: London 2. Society and College of Radiographers. (2013). Preliminary clinical evaluation and clinical reporting by radiographers: policy and practice guidance. SCoR; London.

### **H5.2 Cultural competence education at Keele University for first year student radiographers preparing for placement - a qualitative study**

*Rebecca Scott; Emma Edwards; Eleanor Monaghan*

*Keele University*

**Background:** Cultural competence is a crucial component in providing effective and culturally responsive healthcare services, ethical patient centered care and improved patient health outcomes (Campinha-Bacote, 2002). Cultural competence is a process, not an event (Campinha-Bacote, 2002) and it is not feasible to educate allied health professionals in all aspects of different cultures (Jhutti-Johal, 2013).

Health professionals have repeatedly expressed a desire to learn more about cultural competency (Coleman and Angosta, 2017) and cultural awareness activities have shown to evaluate well with student radiographers (Ebba Maldonado and Huda, 2018). There is a gap in the literature surrounding level appropriate cultural care core competencies, and the optimal model for teaching and assessing such content (Paal et al., 2014) which shape behaviour changes and development over time (Ebba Maldonado and Huda, 2018).

**Purpose:** To highlight our positively evaluated educational presentation and facilitated discussion session in cultural awareness delivered in the Practice Experience component of training over three successive cohorts. These sessions unpacked some of the themes identified in the literature surrounding cultural competence and spiritually sensitive healthcare (Lalani et al., 2021) (Bowland et al., 2013) and were designed and delivered by the chaplaincy team at the students' HEI.

**Summary:** Positive feedback was received from students related to their experience within the sessions and has highlighted concerns felt by student radiographers related to their perceived deficiencies in cultural competence at this level of their training. These themes could be further evaluated to identify level appropriate cultural care core competencies across the programme.

1. Campinha-Bacote J (2002) The process of cultural competence in the delivery of healthcare services: a model of care. *Journal of Transcultural Nursing* 13, 181- 184
2. Coleman, J.- S. and Angosta, A.D. (2017) The lived experiences of acute-care bedside registered nurses caring for patients and their families with limited English proficiency: A silent shift, *Journal of Clinical Nursing* (John Wiley & Sons, Inc.), 26(5-6), pp. 678-689.
3. Ebba Maldonado, L. and Huda, K. (2018) Increasing the Cultural Competence of Student Radiographers, *Radiologic Technology*, 89(6), pp. 616-620.
4. Jhutti-Johal, J. (2013) Understanding and coping with diversity in healthcare, *Health Care Analysis*, 21(3), pp. 259-270.
5. Lalani, N.S., Duggleby, W. and Olson, J. (2021) "I Need Presence and a Listening Ear": Perspectives of Spirituality and Spiritual Care Among Healthcare Providers in a Hospice Setting in Pakistan, *Journal of Religion & Health*, 60(4), pp. 2862-2877.
6. Noble, A. and Shaham, D. (2020) Why do Thoracic Radiologists Need to Know About Cultural Competence (and What Is it Anyway)?, *Journal of thoracic imaging*, 35(2), pp. 73-78.
7. Paal, P., Roser, T. and Frick, E. (2014) Developments in spiritual care education in German--speaking countries *BMC medical education*, 14, p. 112.

### **H5.3 Impostor phenomenon traits in radiography students**

*Christopher Gibson*

*Canterbury Christ Church University*

**Background:** Imposter Phenomenon (IP) includes feelings of being a fraud, which can be associated with high levels of anxiety<sup>3</sup>. Research suggests students on placement report high levels of anxiety<sup>6</sup>. Up to 82% of the population experience IP<sup>1</sup>, however little research has been carried out on IP and radiography. Parkman<sup>4</sup> showed that educating students on IP can have a positive impact on wellbeing and attainment.

**Method:** An online survey of UK student radiographers used the Clance Impostor Phenomenon Scale (CIPS)<sup>2</sup> with permission and ethical approval. The survey was open for 6 weeks in 2023. Demographic questions included gender, field of radiographic study, age categories and year of study, to enable comparisons to be made.

**Method:** Of 92 responders, 77% were found to have frequent or intense IP traits. No significant differences were seen with the age of responder ( $p=0.46$ ), or field of radiography ( $p=1$ ). Year of study demonstrated a significant difference ( $p=0.0057$ ), with second years scoring higher (mean IP score of 78.56) than first and third years (72.41 and 66.17 respectively).

**Conclusion:** Every year group sampled returned a mean IP score of >70 which is above the scores from other studies including medical (mean IP score of 63.1)<sup>5</sup>, dental (65)<sup>7</sup> and nursing students (60.13)<sup>8</sup>. Further studies are needed to explore strategies and educational requirements for radiography students to deal with IP feelings during their studies as a way to help reduce anxiety.

[1] Bravata, D.M., Madhusudhan, M.B., Cokley, K.O. (2020) 'Commentary: Prevalence, Predictors, and Treatment of Imposter Syndrome: A Systematic Review', *Journal of Mental Health & Clinical Psychology*, Available at: <https://doi.org/10.29245/2578-2959/2020/3.1207> (Accessed: 8 January 2023).

[2] Clance, P.R. (1985) *The imposter phenomenon: Overcoming the fear that haunts your success*, Atlanta, GA: Peachtree.

[3] Deshmukh, S., Shmelev, K., Vassiliades, L., Kurumety, S., Agarwal, G., and Horowitz, J.M. (2022) 'Imposter phenomenon in radiology: incidence, intervention, and impact on wellness', *Clinical Imaging*, 82, pp. 94-99, Available at: <https://doi.org/10.1016/j.clinimag.2021.11.009> (Accessed: 8 January 2023).

[4] Holliday, A.M., Gheihman, G., Cooper, C., Sullivan, A., Ohyama, H, Leaf, D.E., and Leaf, R.K. (2020) 'High Prevalence of Imposterism Among Female Harvard Medical and Dental Students', *Journal of General Medicine*, 35, pp. 2499-2501.

[5] Levant, B., Villwock, J.A., and Manzardo, A.M. (2020) 'Impostorism in third-year medical students: an item analysis using the Clance impostor phenomenon scale', *Perspectives on Medical Education*, 9, pp. 83-91.

[6] Mawson, J.A., Miller, P.K., and Booth, L. (2022) 'Stress, a reflective self and an internal locus of control: On the everyday clinical placement experiences of older undergraduate radiographers in the UK', *Radiography*, 28(1), pp. 55-60, Available at: <https://doi.org/10.1016/j.radi.2021.07.019> (Accessed: 9 February 2023).

[7] Parkman, A. (2016) 'The Imposter Phenomenon in Higher Education: Incidence and Impact', *Journal of Higher Education Theory and Practice*, 16(1), pp. 51-60.

[8] Sasser, J.T., and Jacobs, M.D. (2021) 'Imposter Phenomenon in Undergraduate Nursing Students: A Pilot Study of Prevalence and Patterns', *Journal of Nursing Education*, 60(6), pp. 329-332. Available at: <https://doi.org/10.3928/01484834-20210520-05> (Accessed: 10 February 2023).

#### **H5.4 Black, Asian and ethnically diverse student experience in therapeutic radiography undergraduate education - student collaboration in research design**

*Louise Codd<sup>1</sup>; Aarthi Ramlaul<sup>2</sup>; Daksha Trivedi<sup>1</sup>*

*<sup>1</sup>University of Hertfordshire; <sup>2</sup>Buckinghamshire New University*

**Background:** There is a disparity in Higher education (HE) awards between students from Black, Asian and ethnically diverse backgrounds in comparison to students from white backgrounds, with a lower proportion of 'good degrees' (2.1 or above) awarded (Advance HE 2020b). This occurs when entry qualifications, social or economic factors (Broeke & Nicholls 2007) are controlled, impacting employment and progression to postgraduate study (Cramer 2021).

**Method:** A student-led workshop explored experiences, generating themes and questions for inclusion in a larger-scale future questionnaire. A 90-minute workshop was conducted with five student volunteers who self-identified as having a Black, Asian, or ethnically diverse background. Three themes i.e. academic learning, placement and perceived barriers to attainment functioned as a starting point for student-led discussion. Audio data was recorded, thematically transcribed, and analysed using NVivo software.

**Method:** Students recounted experiences of racism and microaggressions, assumptions made about them and a feeling of having to work harder than their white counterparts in the placement setting. Feelings that commitments at home were not understood by academic staff alongside difficulties in mental health because of pressures to succeed were key themes emerging around attainment.

**Conclusion:** Further collaboration with students as co-creators in research is invaluable. Not only to develop reliable and valid methods but to highlight student voices, embedding their narratives within the research which impacts them from the outset. Further research into the experiences of student therapeutic radiographers from Black, Asian, and ethnically diverse backgrounds is vital to create an equitable learning environment to reduce the awarding gap.

1. AdvanceHE. 2020b. Equality in Higher Education, Student Statistical Report 2020. AdvanceHE. <https://www.advance-he.ac.uk/knowledge-hub/equalityhigher-education-statistical-report-2020>

2. Broeke S, Nicholls T. Ethnicity and Degree Attainment. Department for Education and Skills; 2007. <https://dera.ioe.ac.uk/6846/1/RW92.pdf>

3. Cramer L. (2021). Alternative strategies for closing the award gap between white and minority ethnic students. *eLife*, 10, e58971. <https://doi.org/10.7554/eLife.58971>

#### **H5.5 The continued development, improvement and implementation of a leadership placement for undergraduate radiography students**

*Eleanor Monaghan; Emma Edwards; Rebecca Scott*

*Keele University*

**Background:** The continuing national shortage of diagnostic radiographers has applied pressure on education providers to continue developing alternative and innovative clinical placements to help meet the ever-increasing demand for clinical placement capacity. There is also a desire for higher education institutions to produce graduate radiographers who are resilient and show leadership skills right from the beginning of their careers. Having previously had successful outcomes with a piloted leadership placement we implemented this on a larger scale over more clinical

hours in partnership with a local trust. This allowed our students to gain experience of leadership from two different perspectives: a higher education institution and an NHS trust. This placement aims to provide third year student radiographers with the essential skills of resilience, leadership and critical peer review while empowering them to complete a project in an area they are passionate about.

**Purpose:** This poster aims to evaluate the feedback we received both from leadership students and local providers to further optimize and futureproof the placement opportunity. This will then aid in further expanding the opportunity for more students, further increasing clinical placement capacity. This poster also evaluates the addition of a leadership conference to the placement opportunity, allowing the students to present their projects, critique other student's work, and network with local leaders.

**Summary of Content:** This poster outlines the background to the development of an educational leadership placement, the experience of the students involved, and proposed future changes to this placement experience.

1. Health Education England (2023) Educating our future workforce through leadership placements <https://www.hee.nhs.uk/about/how-we-work/your-area/north-west/north-west-news/educating-our-future-workforce-through-leadership-placements> 2. Society for Radiographers (2021) SoR student placement inspires leaders of the future <https://www.sor.org/news/students/sor-student-placement-inspires-leaders-of-the-futu>



## Proffered papers: Education 2

### 15.1 Establishing a core integrated care curriculum

*Ruth Strudwick*

*University of Suffolk*

**Aim:** To establish a core integrated care curriculum across all pre-registration health and social work courses at The University of Suffolk (UoS). Introduction: During the 2021/22 academic year UoS reviewed its health and social work courses to introduce integrated care as common indicative content in all pre-registration programmes. We undertook a scoping project and analysis of course content.

**Methods:** five focus groups were undertaken. A mix stakeholders attended including service users, carers, managers, staff from health, social care and the private and voluntary sector, students, practice educators and university staff. Data were transcribed and synthesised to generate key 'integrated care' topics, to inform and enhance the curricula. The topics were mapped against the current curricula.

**Method:** gaps were found where topics were not covered or there were subjects that were already delivered but required augmentation, e.g. for diagnostic radiography, course additions included advocacy for service users, and social prescribing. As an addition to the curriculum two integrated care days were planned for all pre-registration health and social work students. The days included keynote seminars, interprofessional workshops, and involvement of service users and carers. This involved collaborative learning based upon mutual respect for one another's expertise, knowledge and skills (Pearson, 2000).

**Conclusions:** Integrated care and working in an interprofessional team are key curriculum areas for health and social work students (CAIPE, 2008). Students should be encouraged to work with others and gain an understanding of one another's professional roles and responsibilities in order to provide high-quality care for service users.

CAIPE (2008) [www.caipe.org.uk/about-us/defining-ipe](http://www.caipe.org.uk/about-us/defining-ipe). Pearson, L. (2000) Collaboration requires shared accountability, *The Nurse Practitioner*. 25 (12) 14-17.

### 15.2 Supporting radiographers through a clinical-academic pathway

*Jessica Eaton<sup>1</sup>; Paula Kelly<sup>2</sup>; Clare Simcock<sup>1</sup>; Owen Arthurs<sup>3</sup>; Ian Simcock<sup>1</sup>*

<sup>1</sup>Great Ormond Street Hospital; <sup>2</sup>Centre for Outcomes and Experience Research in Children's Health Illness and Disability (ORCHID); <sup>3</sup>Institute of Child Health/University College London/NIHR Biomedical Research Centre

**Background:** The clinical-academic role provides a range of advantages for the individual, department, profession and most importantly the patient by advancing clinical practice through evidence (Society of Radiographers, 2021). Funding streams including the College of Radiographers Research Grant (CoRIPS) and the HEE/NIHR fellowship programme has proven to be beneficial for radiographers wishing to develop a clinical academic career.

**Purpose:** This poster looks at the ways in which organisations can support Radiographers (and other Allied Health Professionals (AHP's)) to start and increase research activity. At Great Ormond Street Hospital (GOSH), staff with

research ambitions were supported with their MSc with departmental funding. Further BRC funding facilitated a 1-day per week secondment to The Centre for Outcomes and Experience Research in Children's Health, Illness and Disability (ORCHID) to facilitate collaborations with other research active AHP's and nursing staff. This helped to secure initial grant funding to external organisations for PhD preparation. Two radiographers were subsequently successful in applying for NIHR pre- and post-doctoral funding.

**Summary of content:** The combined support by funding and professional bodies, managers, and other academic and clinical healthcare professionals will be described. Learning outcomes from this model include the importance of support (dedicated time, funding, and supervision), academic skills development and time to develop research skills. We hope that by showcasing this support network a similar model may be adopted by other centres to assist clinical academic radiographers to form new and exciting roles and push future professional boundaries.

Society of Radiographers. (2021). Clinical Academic Radiographer: Guidance for the support of new and established roles. <https://www.sor.org/getmedia/267948a8-53ee-44d5-8608-d152588c1256/Clinical-Academic-Radiographer-Guidance-for-the-support-of-new-and-established-roles>, Accessed 30.01.2023.

### 15.3 The impact of a massive open online course on patient centred care in UK-based diagnostic radiographers

*Emma Hyde<sup>1</sup>; Maryann Hardy<sup>2</sup>; Ruth Strudwick<sup>3</sup>; Amanda Upton<sup>4</sup>*

*<sup>1</sup>University of Derby; <sup>2</sup>University of Bradford; <sup>3</sup>University of Suffolk; <sup>4</sup>University of Cumbria*

**Background:** UK health professionals' awareness of Patient Centred Care (PCC) has grown in recent years due to the impact of high-profile reports on poor care, such as Francis (2014), guidance documents such as those from Picker Institute (2014) and Health Foundation (2014), and the publication of NHS strategies such as The Long Term Plan (2019). Research by Hyde & Hardy (2021a,b,c) showed that although awareness of PCC within the UK Diagnostic Radiography community was good, there were many challenges to its introduction, particularly time and efficiency concerns, and the technical nature of diagnostic radiography roles. This research set out to investigate the impact of a new educational tool, a Massive Open Online Course (MOOC), designed to support UK-based Diagnostic Radiographers with PCC approaches.

**Method:** Following ethical approval, UK based Diagnostic Radiographers were recruited to take part in the research via social media. Participants were asked to complete an online survey about PCC, before completing the MOOC. Participants were asked to complete the survey again after finishing the MOOC to assess whether their awareness of PCC had changed. The quantitative data collected was statistically analysed. Qualitative data from free text comments were thematically analysed.

**Method:** Data collection and analysis is currently in progress. Results will be ready for presentation at UKIO 2023.

**Conclusion:** The PCC MOOC has the potential to make a significant impact on UK based Diagnostic Radiographers practice. Increased awareness of PCC approaches may help to support Diagnostic Radiographers to integrate PCC into their everyday practice.

- Francis, R (2014) Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry. MHSO: London. Available at: Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry - GOV.UK ([www.gov.uk](http://www.gov.uk))
- Hyde E & Hardy M (2021a) Delivering patient centred care (Part 1): Perceptions of service users and service deliverers. *Radiography*. 27 (2021) pp8-13 DOI: <https://doi.org/10.1016/j.radi.2020.04.015>
- Hyde E & Hardy M (2021b) Delivering patient centred care (Part 2): a qualitative study of the perceptions of service users and deliverers. *Radiography*. 27 (2), pp322-331. DOI: <https://doi.org/10.1016/j.radi.2020.09.008>
- Hyde E & Hardy M (2021c) Delivering patient centred care (Part 3): Perceptions of student radiographers and radiography educators. *Radiography*. 27 (3) pp803-810. DOI:<https://doi.org/10.1016/j.radi.2020.12.013>
- NHS England. Published on 7th January 2019. The NHS Long Term Plan. Available at: <https://www.longtermplan.nhs.uk/publication/nhs-long-term-plan/>
- Picker Institute Europe. Principles of person-centred care. Available at: <https://www.picker.org/about-us/picker-principles-of-person-centred-care/>
- The Health Foundation. Patient-centred care made simple (2014) Available at: <http://www.health.org.uk/sites/health/files/PersonCentredCareMadeSimple.pdf>.

### 15.4 Evaluation of a sonography high intensity foundation training programme

*Heather Venables; Gillian Coleman; J.P. Mayes; Rebecca White; Emma Hyde; Elle Wyke; Nang-Tege Ekumah*

*University of Derby*

The UK is experiencing a significant and sustained shortage of sonographers (BMUS 2021). Despite this, approaches to practical training have been largely unchanged over several decades. While national debate continues, pressure on clinical departments is unrelenting. To support training across specialties and at scale, it is imperative that all early-stage ultrasound skills development is moved out of the clinical department and is achievable within a short timescale (Sim, J. 2016). This pilot study evaluates the effectiveness of a high intensity campus-based training programme on

early skills development for ST1 radiology trainees (n=23) prior to learning in a clinical environment. Using an active learning approach, SHIFT (Sonography High Intensity Foundation Training) combines core theory with highly structured practical sessions and computer-based simulation activities that aim to enable trainees to develop the hand-eye coordination required for ultrasound image capture, to build familiarity and understanding of equipment controls and recognition of normal ultrasound appearances. This enables specialist trainees to enter clinical placement with minimal disruption to service delivery and reduced impact on supervising staff. Qualitative feedback and reflection on learning is captured through use of a 'Listening Rooms' methodology to capture trainee peer-to-peer reflections on their experience (Heron, E 2019). The study uses a collaborative approach to building a better understanding of the impact of high intensity training on trainee experience, understanding and confidence in key foundation skills. We present initial findings, interpreted from a learner perspective.

1. British Medical Ultrasound Society (2021) NHS Sonographers Scope of Practice, (Available on line) [https://www.bmus.org/static/uploads/resources/BMUS\\_Sonographers\\_Scope\\_of\\_Practice\\_Report\\_FINAL.pdf](https://www.bmus.org/static/uploads/resources/BMUS_Sonographers_Scope_of_Practice_Report_FINAL.pdf) 2. Heron, E. (2019). Friendship as method: reflections on a new approach to understanding student experiences in higher education. *Journal Of Further And Higher Education*, 1-15. doi: 10.1080/0309877x.2018.1541977 3. Sim, J. (2016) Preparing work-ready sonography trainees: An accelerated model of ultrasound training by the University of Auckland; *Sonography* 3 134–141 © 2016 Australasian Sonographers Association

### 15.5 Postgraduate medical ultrasound student and mentor perceptions and experiences of academy model clinical ultrasound training in Scotland

*Diane Dickson<sup>1</sup>; Morgyn Sneddon<sup>1</sup>; Clair Graham<sup>2</sup>; Claire Lindsay<sup>2</sup>; Morag Stout<sup>2</sup>*

*<sup>1</sup>Glasgow Caledonian University; <sup>2</sup>NHS National Education Scotland*

**Background:** The National ultrasound training programme (NUTP) is a new initiative based within the NHS Scotland Academy to support clinical ultrasound training and boost training numbers in response to workforce decline and increased demand on service. NHS Scotland Health boards are being supported for funding of trainees from Scottish Government directed by the NHS Recovery Plan 2021-2026 1 Clinical training is a key component in the development of ultrasound competency and is heavily supported by NHS board clinical staff in their role as mentor/practice educator. This study will explore the perceptions and experiences of the first cohort of students who undertake clinical training within the NUTP, and their mentors. Identifying potential opportunities and challenges will provide evidence-based recommendation for future enhancements.

**Method:** Up to 12, 60-minute, semi-structured, one-to-one Microsoft Teams interviews with NUTP trainees, NUTP mentors and NHS Scotland health board ultrasound mentors will be performed between April and July 2023. Open-ended questions to explore perspectives, barriers and facilitators will be audio-recorded and transcribed verbatim with participants invited to verify the transcript to establish rigour. Framework analysis for iterative and in-depth analysis of key themes will be employed to explore data within and across participants.

**Method:** The NUTP is supporting nine students from six Scottish NHS boards. Four sonographers provide a minimum five weeks of dedicated training lists and mentorship out with the trainees' employed health board, with 150 examinations completed each week. Demographic service data and preliminary key outcome findings/recommendations will be available for conference presentation.

1. Scottish Government. NHS Recovery Plan 2021-2026, <https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2021/08/nhs-recovery-plan/documents/nhs-recovery-plan-2021-2026/nhs-recovery-plan-2021-2026/govscot%3Adocument/nhs-recovery-plan-2021-2026.pdf> (2021).

### 15.6 Factors contributing to CT dose optimisation, does current clinical training need a rethink?

*Victoria Major<sup>1</sup>; Sean Ryan<sup>1</sup>; Desiree O'Leary<sup>2</sup>*

*<sup>1</sup>University of Hertfordshire; <sup>2</sup>Keele University*

**Background:** In CT scanning, patients should receive the optimal level of radiation to achieve a clinically diagnostic image. Vulnerable groups are particularly sensitive to the ionising radiation dose from CT scanning, potentially causing cancers in the future. The amount of radiation from CT scanning is disproportionately high compared to projectional X-ray imaging technology<sup>1</sup>. Radiographers are required to adjust exposure parameters and scanning technique to achieve clinically diagnostic images with an optimal level of radiation<sup>2</sup>. Collaborative working with radiographers, radiologists, clinical scientists, and application specialists is required to effectively optimise CT parameters giving maximum image quality for minimum radiation exposure. This study examines radiographers' views, experiences and perspectives on the factors contributing to holistic dose optimisation within the clinical environment.

**Method:** Mixed methods study. First phase, longitudinal study of pre- and post-registration radiographers. Second phase, qualitative study seeking expert opinion from advanced radiographers, clinical scientist, radiologist.

**Method:** Longitudinal study qualitative data identified three themes which were: Education, Culture, and Dose optimisation. Post-registration, knowledge of exposure parameters increased significantly. Pre- and post-registration

radiographers felt poorly supported because trained professionals were too busy to pass on knowledge. Advanced CT radiographers felt they required more knowledge and applications training before they could manipulate exposure parameters, a feeling being cascaded through the workforce to pre-registration radiographers.

**Conclusion:** This study has shown that learning in the clinical environment is complex, there is an urgent requirement for professional education to keep pace with technological advances in CT scanning. Current training is not producing newly qualified radiographers competent in cross-sectional imaging.

1. Elliott, A. (2014) Committee on Medical Aspects of Radiation in the Environment (COMARE) 16th Report Patient radiation dose issues resulting from the use of CT in the UK. Department of Health (UK). 2. Joyce, S., O'Connor, O. J., Maher, M. M., & McEntee, M. F. (2020). Strategies for dose reduction with specific clinical indications during computed tomography. *Radiography*, 26, S62-S68.



## Proffered papers: Digital technology

### K10.1 Digital Transformation and Artificial Intelligence In (Operational) Radiology

*Peter Strouhal<sup>1</sup>; Mariam Darwish<sup>2</sup>; Naeem Khan<sup>2</sup>; Brad Miles<sup>3</sup>; Chris Vallis<sup>3</sup>; Ann Heathcote<sup>3</sup>; James Berry<sup>3</sup>; Imran Farid<sup>2</sup>; Stefano Persichini<sup>2</sup>*

<sup>1</sup>Alliance Medical; <sup>2</sup>GE HealthCare; <sup>3</sup>AML

Alliance Medical Ltd (AML) is a trusted partner of NHS, serving over 800,000 patients in England via a mix of 50+ mobiles (MRI, CT, PETCT), 41 static sites and 10 Community Diagnostic Centres. Hospitals could utilise Artificial Intelligence to improve operational decision-making in patient flows, scheduling, staffing and supply chain management. In 2022/23, AML pilot-tested GE HealthCare's Imaging360 solution, which enables enterprise-radiology organizations to standardize performance across multiple sites and scanners, enhancing imaging efficiency and resource allocation; and increasing patient choice for scanner selection. AML achieved greater, easier oversight of operations across the whole estate from single cloud-based platform including detailed overview of imaging operations via a combined integration of HL7, DICOM image transfer and management information CSV extracts. Imaging360 provides retrospective, real time and predictive views of scheduling: Enabling schedule optimisation, including flagging duplicate exams or multiple upcoming appointments; allows protocol libraries to be standardised, optimised, and delivered to scanners; allows patient appointment choice; and shortens appointments. For example, one site reduced scan times from 30 to 20 minutes so increased potential appointments by 35/week, akin to extra day's scanning; or one could give this time back to staff. Imaging360 can predict patient no-shows/cancellations, logic used to infer new data points in real time enables users to respond to alerts, to create more seamless patient and staff experiences. This bringing together of clinical, operational and scheduling data allows healthcare operators to improve outcomes, expand access to care and deliver care more cost effectively.

### K10.2 Automating monitoring of radiology processes to aid oversight of radiology and reporting performance

*Richard Szabranski*

*Worcestershire Acute NHS Trust*

Radiology reporting backlogs are an acknowledged bottleneck in patient care currently, Worcestershire Acute Trust Radiology (WAHT), having successfully dealt with our backlog, have evolved robust process to monitor and maintain this level of service. This level of oversight necessitates a high payload of staff time which is already at a premium in today's radiology department. To this end, Worcestershire Acute Trust Radiology department have developed in-house software to monitor and feedback on several key essential aspects of radiology and its reporting. These include: 1) Reporting time to verification and reporting is keeping to departmental KPI's 2) Is report auto-reported correctly and vice-versa 3) Vetting status of all modalities 4) Radiology imaging reject rates 5) Notify of Radiology appointments for deceased patients 6) Monitoring Radiology staff compliance governance documentation Most of these functions run unattended in the background and when required alert to correct staff any actions or result requiring further investigation such as notifying a Radiologist that a report is still outstanding. The system, RADi, has been observed by the CQC and NHSe and commended as an example of "best practice" Presentation will be via PowerPoint demonstration