P111 **Radiology non-medical referral education development: A Scottish health board perspective**

Jason Stanley; Andrew Brennan; Julie Willis; Jonathan McConnell
NHS Greater Glasgow and Clyde

The 2020 Vision envisages NHS Scotland achieving an integrated health and social care service, a focus on prevention, anticipation and supported self-management. Hospital treatment outside in a community setting using day case treatment approaches as the norm. Care provided to the highest standards of quality and safety whatever the setting. Returning people into their home or community environment as soon as appropriate, with minimal risk of re-admission. This will require large numbers of non-medical staff to refer for radiological examinations to meet demand. Through a NHS Education for Scotland (NES) Fellowship working with the Diagnostics Directorate Health Physics Team the below objectives were addressed. 1. Establish the current referral pathway range amongst non-medical referrers; 2. Identify imaging requesting needs of staff referring for ionising radiation based imaging; 3. Establish factors for a common educational package for image referral preparation; 4. Propose a foundation course of study with the health physics team. Other national initiatives and trialling of new working approaches necessitate standardised imaging referral education. Role transformation is bringing new professions forward as non-medical imaging referrers; this project provides a method of standardised ionising radiation-based image requesting education. Referral pathways are varied for service delivery. Significant variation in educational preparation exists between differing non-medical staff. Surveys, IR(ME)R17 and IRR17 document analysis and evaluation of current educational delivery has defined common educational content. A course has been proposed. Advanced Practice areas have been defined and a baseline education system developed.

P112 **Practical training of Speech-Language Therapists undertaking videofluoroscopic swallowing studies: The role of the radiographer**

Helen Warren-Forward[1]; Hetal Parsotam[1]; Melissa Shields[1]; Jonathan McNulty[2]; Bernice Mathisen[3]; Rachael Unicomb[1]; Heather Shaw Bonilha[4]; Ciara O'Toole[5]; Anna Hearne[6]; Sue Pownall[7]
[1]The University of Newcastle; [2]University College Dublin; [3]Southern Cross University; [4]Medical University of South Carolina; [5]University College Cork; [6]Massey University; [7]Sheffield Teaching Hospital NHS Foundation Trust

Background: A video-fluoroscopic swallowing study (VFSS) is a fluoroscopic examination conducted to assess dysphagia and involves the specialisation of radiographers and speech language therapists (SLTs). The radiographer is responsible for all technical aspects of the study and should consider radiation safety of all staff. As the SLT is directly involved in the study, they should have some knowledge of radiation safety. However, previous studies have shown that SLT knowledge is limited. The main study aims were to assess radiation protection practices utilised by SLTs and whether radiographers have a role in providing practical training.
Methods: An online questionnaire was distributed to SLTs from six different countries (Australia, Canada, Ireland, New Zealand, UK and USA). Responses were analysed quantitatively and supported through written responses.
Results: Other SLTs (64%) have the largest contribution in influencing SLTs radiation protection practices, the radiographer (57%) closely followed. Written comments revealed the significance of the radiographer in providing training as "radiographers are excellent at ensuring we [use] right equipment, stand in the right places and use exposure monitoring". The thyroid shield (93%) and full lead gowns (72%) were commonly used, with 61% of SLTs reported that they always wore a radiation badge. These were mainly worn outside (64%) of shielding near the thyroid (73%), although there were significant differences between countries.
Conclusion: This research identified inconsistencies in radiation protection practices amongst SLTs in different countries and has highlighted the important role that radiographers have in providing practical advice to ensure that SLTs are consistently practicing safely.

WORKFORCE DEVELOPMENT

P113 **Research and clinical trial radiographers (RaCTR) network: Establishment of a specialist interest group (SIG)**

Amy Taylor[1]; Pam Shuttleworth[2]; Kirstie Johnson[3]; Dawn Ennis[4]
[1]Weston Park Cancer Centre; [2]Leeds Cancer Centre; [3]Queens Centre, Hull University Hospitals; [4]University Hospital of Derby and Burton NHS Foundation Trust

Introduction: The Society and College of Radiographers' (SCoR) overarching vision for research is to improve patient care and outcomes by continuing to develop, grow and implement a high-quality evidence-base that addresses patient-focussed research priorities [1]. The strategic aims outlined by the SCoR's are integral to achieving this vision. Embedding research at all levels of radiography practice and education. Raising the impact and profile of radiography through high quality research focussed on improving patient care and/or service delivery. Expanding UK radiography research capacity through development of skilled and motivated research-active professionals [1]. Trusts and radiotherapy department managers have responded positively to the strategic outline, establishing a number of research leads and clinical trials posts over the last four years, complementing the

already established workforce. Many therapeutic radiographers in theses posts however work independently from a team and are often trailblazers in their departments.
Method: In December 2016 the Research and Clinical Trial Radiographers Network (RaCTRN) was established by clinically based research and clinical trials radiographers from across Yorkshire and the Midlands.
Results: Registered as a Society of Radiographer Special Interest Group (SIG), membership now stands at over 70 and continues to grow.
Conclusion: The increase of RaCTR's necessitates the continued growth of a specialised network and SIG to provide support and facilitate the sharing best practice. Bringing individuals together will not only reduce work being undertaken in silos it will unite individuals, providing opportunity for collaboration and knowledge dissemination across the UK.
1. Society and College of Radiographers (2016). Research and the Radiography Profession: A Strategy for Research (2016-2021). https://www.sor.org/system/files/article/201511/research_strategy_final_4.pdf.

P114 Simulation training for managing medical emergencies in the Radiology Department

Jacob Whitworth; Chris Arrowsmith; Mark Callaway
University Hospitals Bristol

Medical emergencies are not uncommon in the Radiology Department, but many department staff are not confident in managing them[1]. Medical emergencies can occur at any time and if Radiology Department staff are the first on the scene it is vital they are familiar with the correct initial management. Simulation training is widely used in other specialities, and has been found to be an effective tool in improving management of common and serious medical emergencies[2]. Our aim was to evaluate the use of simulation in enhancing staff confidence and skills within the Radiology Department. We devised three scenarios: anaphylaxis secondary to intravenous contrast, hypotension/collapse following liver biopsy, and VF cardiac arrest. These scenarios were delivered in the Radiology department by simulation-trained clinicians. Each scenario was attended by doctors, nurses, radiographers and other departmental staff. A debrief was conducted immediately afterwards with all participants using a formal feedback structure. Anonymous feedback forms were also collected. Feedback from all participants suggested that the scenarios were useful, relevant and they would feel more confident managing similar clinical scenarios in the future. Many also wanted further regular simulation training as a part of departmental teaching. This pilot showed that simulation can be an effective training method in Radiology, and we plan to make this a regular part of our departmental teaching program.
1. Bartlet, M. and Bynevelt, M. (2003); Acute contrast reaction management by radiologists: A local audit study; Australasian Radiology; Vol 47 (4); 363-367.
2. Pfeifer, K. et al (2016); High-Fidelity Contrast Reaction Simulation Training: Performance Comparison of Faculty, Fellows, and Residents; Journal of the American College of Radiology; Vol 13 (1); 81-87.

P115 A scalable interactive mixed reality escape room virtual escape room – Anatomy (VERA)

David Rees; Xi Guo
Birmingham City University

An escape room is an adventure game usually used for team building and communication, but can also be used to enhance group learning experiences, as teams need to solve problems to escape a locked room, in a given time. Immersive technology such as Mixed Reality (a combination of physical reality, virtual reality and augmented reality) makes it possible to enhance users' experience of physical escape rooms with rich digital context. However, most Mixed Reality designs require special equipment or applications to be installed and it is problematic to make the system scalable. Whilst, most commercial products are used for entertainment purposes; in this paper, a scalable interactive Mixed Reality escape room simulation, for radiographic anatomy problem-based learning is introduced. This paper outlines the background, design concepts, implementation and test result. It demonstrates how to make good use of MR technology in a standard room setting, whilst combining the learning resources within an escape room, to provide a better learning experience in radiographic human anatomy.
1. López-Pernas, S. Gordillo, A. Barra, E. and Quemada, J. (2019). Examining the Use of an Educational Escape Room for Teaching Programming in a Higher Education Setting. IEEE Access, 7, pp.31723-31737.
2. Kinio, A. Dufresne, L. Brandys, T. and Jetty, P. (2017). Break out of the classroom: The use of escape rooms as an alternative learning strategy for surgical education. Journal of Vascular Surgery, 66(3), p.e76.
3. Pan, Z. Cheok, A.D. Yang, H. Zhu, J. and Shi, J (2006). Virtual reality and mixed reality for virtual learning environments. Computers & graphics, 30(1), pp.20-28.
3. Warmelink, H. Mayer, I. Weber, J. Heijligers, B. Haggis, M. Peters, E. and Louwerse, M (2017) "AMELIO: Evaluating the team-building potential of a mixed reality escape room game." Extended abstracts publication of the Annual Symposium on Computer-Human Interaction in Play, pp. 111-123. ACM, 2017.

P116 A study to evaluate CPD opportunities through everyday work-based practice for radiographers in a multi-centred NHS Trust

Amy Kan
Mid Yorkshire Hospitals NHS Trust

Background: A varied CPD profile is a requirement of maintaining registration with Health and Care Professions Council. Research in relation to radiographers and CPD is primarily concerned with attitudes and perceptions. Frequently cited barriers are lack of staffing, lack of time and lack of consideration for the wider range of work-based learning opportunities available.

This study investigates perceptions of CPD activities of radiographers working within a multi-centre NHS Trust and evaluates CPD opportunities through every-day work-based practices.
Method: 149 radiographers and assistant practitioners were invited to take part in this study with two phases. Phase 1: quantitative cross-sectional survey to explore perceptions, attitudes and understanding of CPD via an online questionnaire. Phase 2: participants are provided a list of primarily work-based activities along with the optional use of recording diary sheets to assess and provide insight into CPD activity in the Trust and allow comparison with phase 1.
Results: Response rate was 27.5% (n=41/149). Time at work is perceived as both the biggest barrier and key facilitator of radiographers CPD engagement. In phase 1, formal/traditional activities gained the biggest response for what constituted CPD and work-based learning options had lower responses. Phase 2 demonstrated wide engagement with work based CPD activities.
Conclusion: Findings show radiographers perceive time at work to be the greatest issue relating to CPD participation. However, work-based activities that constitute CPD are frequently engaged with and awareness of this improves CPD participation. In addition, the availability of a paper-based reflective diary facilitates recording of CPD.

P117 Learning at lunchtime: Drivers and barriers to lunchtime CPD session attendance

Andrew Creeden; Christine Santostefano
University Hospital Coventry & Warwickshire NHS Trust

Background: Continuing Professional Development (CPD) is essential for the delivery of high-quality services but previous studies suggest that many radiographers are failing to undertake sufficient CPD[1-4]. A programme of lunchtime presentations was introduced to increase CPD participation. This study sought to evaluate participant perceptions of the sessions and to identify interventions with the potential to increase future attendance.
Method: Between October 2018 and February 2019 general radiographic staff at a UK university teaching hospital were invited to complete a printed survey. Likert scales, multiple choice (multiple responses permitted) and free-text response questions assessed the participants' opinions of the presentations, and explored the drivers and barriers to their attendance.
Results: 65 responses were received. 78%(n=51) had attended at least one presentation, all of whom rated the delivery, content and relevance as either 'good' or 'excellent.' Barriers to attendance included the inability to be released from their clinical area 75%(n=49) and forgetting that presentations were scheduled 43%(n=28). A small minority of respondents 12%(n=8) objected to undertaking CPD during lunch breaks. Popular interventions to improve future attendance include holding the presentations at different times 51%(n=33), repeating the presentations on more occasions 45%(n=29), extra reminders when the presentations are happening 37%(n=24) and making recordings of the presentations available online 25%(n=16).
Conclusion: The presentations were well received but clinical workload limits attendance. Repeating sessions over a range of days/times and providing regular reminders may improve attendance. The results of this study may also be of interest to other departments planning a lunchtime CPD programme.

1. Castillo, J. and Caruana, C.J., (2014) Maltese radiographers' attitudes towards continuing professional development: an initial study using concept maps. Journal of Med Imaging and Rad Sci, 45(1), pp. 37-46.
2. Grehan, J., Butler, M., Last, J. and Rainford, L., (2018) The introduction of mandatory CPD for newly state registered diagnostic radiographers: An Irish perspective. Radiography, 24(2), pp. 115-121.
3. Henwood, S.M. and Flinton, D.M. (2012) 5 years on: have attitudes towards continuing professional development in radiography changed? Radiography, 18(3), pp. 179-183.
4. Stevens, B.J. and Wade, D., (2017) Improving continuing professional development opportunities for radiographers: A single centre evaluation. Radiography, 23(2), pp. 112-116.

P118 The future of ultrasound Advanced Clinical Practitioner education: Mapping the views of clinical leads in the public and private sector

Paul K. Miller; Meaghan Grabrovaz; Gareth C. Bolton; Lorelei Waring
University of Cumbria

Background: There can be little doubt that current models and mechanisms involved in ultrasound Advanced Clinical Practitioner education, at UK University Level 7, are in need of change to adapt to the challenges of a rapidly changing public healthcare environment, while functioning alongside newer 'direct entry' educational routes into ultrasound (Miller, Waring, Bolton and Sloane, 2018; Waring, Miller, Bolton and Sloane, 2018). This research, funded by Health Education England, explores the views of clinical leads in UK ultrasound departments regarding the facility of current education, the changes needed now and the changes that are likely necessary to future-proof the curricula.
Methods: With institutional ethical approval, semi-structured interviews were conducted with N=10 clinical leads in public and private ultrasound units. Data were transcribed verbatim, and transcripts analysed using the thematic approach outlined by Braun and Clarke (2008).
Results: Four interlinked global themes emerged. Soft Skills: The present and increasing need for better and more flexible verbal/written communication skills, plus team working and management/leadership training. Non-Genericism: The need to prepare sonographers for progressively more varied and/or difficult patients and working environments. Specialisation in

Diversification: The need to prepare sonographers for a greater range of diagnostic and interventional tasks in more specific domains of ultrasound. Evolving CPD: Developing new CPD models to facilitate greater ongoing involvement.
Conclusion: While the participants were broadly very content with current models/standards of Ultrasound ACP education, the findings underscore a range of concerns they held regarding its adaptation in the short-to-medium terms.
1. Braun, V. and Clarke, V. (2008) 'Using thematic analysis in psychology', Qualitative Research in Psychology, 3(2), pp.77-101. doi: 10.1191/1478088706qp063oa
2. Miller, P.K., Waring, L., Bolton, G.C. and Sloane, C. (2018) 'Personnel flux and workplace anxiety: personal and interpersonal consequences of understaffing in UK ultrasound departments', Radiography, 25(1), pp.45-50. doi: 10.1016/j.radi.2018.07.005.
3. Waring, L., Miller, P.K., Sloane, C. and Bolton, G. (2018) 'Charting the practical dimensions of understaffing from a managerial perspective: The everyday shape of the UK's sonographer shortage', Ultrasound, 26(4). pp.206-213. doi: 10.1177/1742271X18772606.

P119 The future of ultrasound Advanced Clinical Practitioner education: Mapping the views of programme leads in the UK

Meaghan Grabrovaz; Paul K. Miller; Lorelei Waring; Gareth C. Bolton
University of Cumbria

Background: The apparatus presently involved in ultrasound Advanced Clinical Practitioner (ACP) education, at UK University Level 7, is in need of radical change to adapt to the challenges of a healthcare environment in extraordinary flux (Sloane and Miller, 2017). These challenges are, furthermore, exacerbated by an overall shortage of sonographers that is increasingly proving to be damaging to both patient service and practitioner wellbeing, albeit in a highly uneven manner across the country (Miller et al., 2019; Waring et al., 2018). The research reported herein, funded by Health Education England, explores the views of UK ultrasound programme leads regarding the facility of current educational strategies for addressing contemporary troubles in clinical ultrasound, and the adaptations that are likely necessary to render ultrasound education in higher education fit-for-purpose in coming years.
Methods: With institutional ethical approval, semi-structured interviews were conducted with N=10 ultrasound leads in UK universities. All data were transcribed verbatim, and corollary transcripts analysed using the thematic approach described by Braun and Clarke (2008).
Results: Four Global Themes emerged from the analysis. Managing students' current ability to flexibly interpret clinical guidelines for everyday practice. Highlighting students' own accountability in ongoing professional development. Foregrounding the importance of "soft skills" in learning. Foregrounding the importance of teamwork across clinical disciplines.
Conclusion: While the participants were generally content with current standards of Ultrasound ACP education, they also voiced a range of extant issues, born of recent experience, that might inform future curriculum adaptations to changing healthcare contexts.
1. Miller PK, Waring L, Bolton GC and Sloane C (2019) Personnel flux and workplace anxiety: Personal and interpersonal consequences of understaffing in UK ultrasound departments. *Radiography* 25(1), 45-50.
2. Sloane C and Miller PK (2017) Informing radiography curriculum development: The views of UK radiology service managers concerning the fitness for purpose of recent diagnostic radiography graduates. *Radiography* 23(1s), S16-S22.
3. Waring L, Miller PK, Sloane C and Bolton GC (2018) Charting the practical dimensions of understaffing from a managerial perspective: the everyday shape of the UK sonographer shortage. *Ultrasound* 26(4), 206-213.

P120 Managing the initial transition from student to professional radiographer: Making induction and preceptorship count

Julie De Witt[1]; Charles Sloane[2]; Amanda Marland[2]; Paul K. Miller[2]; Mark Hoelterhoff[3]
[1]University of Derby; [2]University of Cumbria; [3]University of Edinburgh

Background: Today, increased marketisation of the higher education (HE) and heath sectors requires that students in allied healthcare disciplines make an almost instantaneous shift upon qualification from a consumer identity to that of service provider, with a range of sharp corollary impacts upon their senses of self and accountability (Sloane and Miller, 2017). In these terms, how the earliest days of post-qualification employment are managed can have profound and long-lasting consequences. In this paper, emergent of a broader study funded by the College of Radiographers Industrial Partnership Scheme, findings around this initial transition period in diagnostic radiography are investigated.
Methods: With institutional ethical approval, N=20 (f=13, m=7) junior diagnostic radiographers working across the UK were recruited for extended, semi-structured telephone interviews. Verbatim transcripts were analysed using Straussian Grounded Theory (Waring et al., 2018).
Results: Participants reported a range of nuanced positive experiences of individually-tailored induction and preceptorship, which had smoothed the pathway into practice in both the short and longer terms; they helped rapidly align personal identities/expectations with that of a "real radiographer." While actively negative (often generic) experiences were reported to have stymied this process, an overall absence of induction/preceptorship was received more variably. While some participants felt undermined, others claimed that it had boosted their resilience and made them more ready for the challenges ahead.
Conclusion: Findings echo the concerns of Yale (2019), regarding personal tutoring in HE; it may be the case that no transition-management is better for new radiographers' adjustment than something too generic and/or inflexible.
1. Sloane C and Miller PK (2017) Informing radiography curriculum development: The views of UK radiology service managers concerning the 'fitness for purpose' of recent diagnostic radiography graduates. Radiography 23(1s): 16-22.

2. Waring L, Miller PK, Sloane C and Bolton GC (2018) Charting the practical dimensions of understaffing from a managerial perspective: the everyday shape of the UK's sonographer shortage. Ultrasound 26(4): 206-213.
3. Yale AT (2019) The personal tutor-student relationship: student expectations and experiences of personal tutoring in higher education. Journal of further and Higher Education 43(3): 533-544.

P121 Generation Z hits higher education

Sarah Naylor; Sarah Booth; Richard Tucker
University of Derby

Background: Generation Z are hitting universities. This generation, born 1995-2012 are said to be the only generation to be raised with technology and accustomed to interacting in a digital world (Chicca and Shellenbarger, 2018). It is also suggested they have underdeveloped social and relationship skills, at increased risk of isolation, anxiety and mental health issues (Chicca and Shellenbarger, 2018). Research undertaken in America has shown Generation Z want practical, relevant information; learning that is individualised (Seemiller and Grace, 2016). They want fast delivery of content, kinesthetic, experiential learning (Rothman, 2014). This will impact on Universities who will need to reflect on their current delivery methods. Are they meeting the requirements of generation Z students within this consumerist environment?
Purpose: The aim of this poster is to share the experiences at one university delivering a course to Generation Z and the outcomes of an evaluation of the learning styles of Generation Z Diagnostic Radiography students.
Summary: The poster highlights the findings from one university's evaluation of their Generation Z Diagnostic Radiography students. It suggests strategies for providing an effective learning environment for today's students who are technologically savvy, have information at their figure tips and are accustomed to instant feedback.

1. Chicca, J. and Shellenbarger, T., 2018. Connecting with Generation Z: approaches in nursing education. Teaching and Learning in Nursing, 13(3), pp.180-184.
2. Rothman, D.A., Tsunami of learners called generation Z. 2014. URL: http://www. mdle. net/Journal/A_Tsunami_of_Learners_Called_Generation_Z. pdf.
3. Seemiller, C. and Grace, M., 2016. Generation Z goes to college. John Wiley & Sons.

P122 Radiographer career development: Are we pushing the right buttons?

Ian Simcock; Emma Rose; Jessica Cooper; Clare Simcock
Great Ormond Street Hospital

Background: Radiography as a career has expanded in a wide range of directions over recent years, and now offers an extended range of possibilities for a varied career. However, these possibilities may seem "out of reach" and "not for me" to the majority of radiographers currently working in full time clinical posts. This poster aims to dispel this myth, encourage Radiographers to investigate Advanced Practice opportunities and to share our department's experience of radiographer role extension.
Purpose: To increase awareness of the four main directions of career development for radiographers, encompassing clinical practice, research, education and leadership. This includes: 1. Reporting Radiographer - Specialising in MRI paediatric neuro-oncology image interpretation/clinical reporting. 2. Clinical Specialist Radiographer - independently undertaking procedures in Interventional Radiology 3. Research opportunities, at Masters, Doctoral and post-doctoral level 4. Management roles - from a modality, service level or departmental perspective We outline career pathways and the way in which these have been integrated into a specialised London teaching hospital. The poster will act as career inspiration and give real-world examples of specialists who have successfully extended their careers in a wide variety of directions.
Summary: The poster will be a visual representation of the different career opportunities, acting as a focus point for discussion with UKIO participants. We will encourage current radiographers to consider these pathways, maximise their potential and develop their own individual career pathway. These opportunities allow for increased staff morale, career fulfilment and staff retention for the whole radiographer.

P123 The degree apprenticeship route into diagnostic radiography: Implications for the workplace

Christine Heales; Demelza Green
University of Exeter

Background: The diagnostic radiographer degree apprenticeship standard was approved for delivery in April 2019 [1]. This apprenticeship route into diagnostic radiography offers an employment-based way into the profession. A key difference between this and undergraduate routes are that the learners are now employees of a department, and the department procures the services of an education provider rather than the education provider identifying clinical placement sites for its students. The qualification and level are the same as for conventional undergraduate programmes; the outcome measure is still a degree level qualification, although an independently assessed 'End Point Assessment' is integrated into the degree. Education providers are still required to obtain HCPC approval for their apprenticeship programmes, and meet their own internal requirements for degree level education. However, the key difference is that the degree apprenticeship is delivered principally through workplace-based learning.

Purpose: The aim of this poster is to describe the implications for clinical departments who may be looking to support apprentice diagnostic radiographers. Key differences between conventional undergraduate programmes and the workplace learning that is at the core of apprenticeship education will be outlined.
Summary: An approach to the design and delivery of an apprenticeship programme in diagnostic radiography will be outlined. Examples will be given of workplace-based learning activities that would, in an undergraduate programme, be delivered in the academic setting. The implications for the clinical workforce who will be supporting the apprentice learners will then be considered.

1. https://www.instituteforapprenticeships.org/apprenticeship-standards/diagnostic-radiographer-integrated-degree/.

P124 Stress and the undergraduate radiographer: An interpretative phenomenological analysis of the experiences of final year mature radiography students

Julie A. Mawson; Paul K. Miller
University of Cumbria

Background: Alongside the now well-documented stresses of undertaking an undergraduate university degree (Regehr et al., 2013), contemporary healthcare students must also adapt to the pressures of a progressively greater clinical workload. To date, however, relatively little research has explored how the challenges and responsibilities of clinical placement specifically interact with the often-complex life circumstances of mature healthcare students, and none has addressed how the associated stresses affect the undergraduate experience of mature student radiographers.
Methods: With institutional ethical approval, extended semi-structured interviews were conducted with N=6 (four female, two male) final year Diagnostic Radiography students aged 25 and over. At the time of interview, participants were placed in six different hospitals in the north west of England. Recorded data were transcribed verbatim, and investigated using the established techniques of Interpretative Phenomenological Analysis (Smith et al., 2009).
Results: Analysis of data gave rise to N=3 pertinent superordinate themes; everyday sources/impacts of stress, stress manifestations in the clinical environment, and constructive management of stress. Participants variably asserted that their status as mature students could engender both greater and lesser stress than was apparent among their younger counterparts, and sometimes both concurrently. All, however, reported that placement-related stress had at some point impacted upon their physical, psychological and social well-being, with most reporting that such stress had negatively affected perceived competence - and thus confidence - in the clinical environment.
Conclusion: It is contended that the nuanced, experiential findings can inform prospective discussions regarding curriculum development and placement management in diagnostic radiography.

1. Regehr C, Glancy D and Pitts A (2013) Interventions to reduce stress in university students: A review and meta-analysis. Journal of Affective Disorders 148(1): 1-11.
2. Smith JA, Flowers P and Larkin M (2009) Interpretative Phenomenological Analysis: Theory, Method and Research. London: Sage.

P125 An investigation of undergraduate diagnostic radiographer expectations of clinical role development

Anthony Manning-Stanley; Mike Kirby
University of Liverpool

Background: Radiographer reporting is an advanced practice set to grow as workforce pressures continue and reporting service needs increases, through e.g. early diagnosis initiatives. The aim of this study was to explore modality preferences of undergraduate students with a specific focus on the reporting role.
Method: University ethical approval was granted for a survey-based questionnaire, using paper and social-media formats. Informed consent was obtained prior to collection from respondents (final year diagnostic radiography undergraduates at UK HEIs). Responses were collated and summarised in Excel for descriptive statistical analysis, and transferred into SPSS for inferential statistical analysis.
Results: Response rates were 100% (n=34) and (estimated) 2.4% (n=18) for the university-based and Twitter surveys. The overall combined preferences were for reporting (22.8%); CT (21.5%); MRI (13.4%), with 73.5% anticipating specialising in less than 2 years. No respondents anticipated specialising in over 4 years. The correlation between modality preference and clinical/university experience of the modality was higher for the Twitter cohort (clinical: $r_s = 0.589$; university: $r_s = 0.592$) compared to the university cohort (clinical: $r_s = 0.327$; university: $r_s = 0.371$ respectively).
Conclusion: Identification of reporting as the most preferred modality is a novel finding in the context of UK HEIs; differing from previous literature where CT and MRI have been identified as more popular modalities. The anticipated time to specialise is slightly more ambitious than seen previously, with weak to moderate correlations of preference to clinical/university experience, thereby counter to published qualitative findings that experience and preference are strongly correlated.

P126 **"Looking back at my student years now...": Recently-qualified radiographers' retroactive understandings of key resilience sources**

Mark Hoelterhoff[1]; Charles Sloane[2]; Paul K. Miller[2]; Amanda Marland[2]; Mabel Barclay[2]; Julie De Witt[3]
[1]University of Edinburgh; [2]University of Cumbria; [3]University of Derby

Background: The rapid evolution of healthcare provision models in the UK has left many Higher Education curricula in the medical imaging sciences struggling to fully equip their graduates for engagement with the vagaries of full clinical practice upon qualification (Sloane and Miller, 2017). Emerging from a national study of the practical experiences of recently qualified diagnostic radiographers, however, this paper addresses key aspects of the participants' undergraduate experience that had directly informed their subsequent resilience in the workplace.
Methods: With institutional ethical approval, N=20 diagnostic radiographers of one to two years post-graduation experience, working across the UK, sat for extended, semi-structured telephone interviews. Verbatim transcripts were analysed using Straussian Grounded Theory (Miller et al., 2019).
Results: Participants accounted that they had sourced resilience from many aspects of their undergraduate experience. Four issues, however, were recurrent in nearly all interviews. 1. Positive clinical experiences during placement routinely reassured participants they were ultimately "up to the job." 2. "Errors without insults" during placement were taken to be highly constructive development experiences. 3. Strong link-tutoring provided intellectual reinforcement of practical and social skills during placement. 4. Academic content that unambiguously elucidated its functional value was essential in providing confidence in procedural knowledge.
Conclusion: Observably, the strongest sources of resilience for participants with respect to their subsequent clinical practice were themselves practical in nature. While some found no difficulty in extracting confidence from more theoretical aspects of curricula, those aspects were still most successful when actively framed in the most practical terms possible.

1. Miller PK, Waring L, Bolton GC and Sloane C (2019) Personnel flux and workplace anxiety: Personal and interpersonal consequences of understaffing in UK ultrasound departments. Radiography 25(1): 45-50.
2. Sloane C and Miller PK (2017) Informing radiography curriculum development: The views of UK radiology service managers concerning the "fitness for purpose" of recent diagnostic radiography graduates. Radiography 23(1s): 16-22.

P127 **MRI radiographer training – The good, the bad and the ugly**

Elizabeth Ashburner
Northern Care Alliance NHS Trust

Background: MRI is a complex and rapidly expanding modality which the Radiography workforce is striving to keep up with demand for. BAMRR state "The science of MRI and technological developments in equipment and device implants evolves rapidly and radiographers must ensure that their knowledge, skills and competencies keep pace with these advances in order to ensure a quality and safe service." (British Association of MR Radiographers, 2016) MRI is mostly taught 'on the job' with very little formal education available outside of short courses or MSc. Most departments have their own training programme that includes locally set competencies which must be completed. Although there is now a 'standard' set by Skills for Health (Skills for Health, 2019) which describes the skills set required by Radiographers working in MRI, there is no standardised format for the assessment of these standards and structuring training.
Purpose: The poster aims to highlight the importance of a well-constructed, relevant and user-friendly training package for MRI Radiographers, which results in evidence of proficiency. It is hoped that this poster will encourage evaluation and review of on the job MRI training and how this is evidenced to improve clinical practice.
Summary: The poster will discuss the existing standards for MRI Radiographer training. It will include a critical evaluation of an existing in-house training package, and the changes which have been made to make it efficient, engaging and effective at guiding training and demonstrating proficiency.

1. British Association of MR Radiographers (2016) BAMRR MR Safety Publication, 8. http://www.bamrr.org/media/uploads/scor.bamrr_2016_mr_safety_publication_update_final.pdf.
2. Skills for Health, 2019. CI.E.(2019) Produce Magnetic Resonance images (MRI) for diagnostic purposes. https://tools.skillsforhealth.org.uk/competence/show/html/id/4304/.

P128 **A picture of extended and advanced radiographic practice in the UK (with a focus on independent clinical reporting)**

Beverly Snaith[1]; Nicholas Woznitza[2]
[1]University of Bradford; [2]Homerton University NHS Trust

Background: Despite an established history of role development in the UK previous research has demonstrated variation in the adoption and utilisation of in practice.[1-3] This objective of this research was a contemporary scoping of radiographic roles.
Method: A cross sectional electronic survey of NHS diagnostic imaging departments across the UK was undertaken in autumn 2019. The survey sought to identify advance practice across modalities, role titles, pay banding, expectations of involvement in leadership, education and research and accreditation with the professional body.

Results: There was a response rate of 42.9%, including all 4 home countries. Only 4 sites (5.1%) do not employ radiographers in advanced roles. The most common approach to recruitment to adv posts is to train staff locally (n=64/75; 85.3%), with 23 also recruiting qualified external staff into such roles. The pay bands were broad (6-8B), with high pay being related to individuals also holding leadership/management roles. The majority require postgraduate education but do not expect staff to have accreditation at an advanced level.
Conclusion: Despite advanced practice being common, the remains inconsistency in role implementation both across modalities and NHS Trusts.

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2. Society of Radiographers. Diagnostic radiography: A survey of the scope of radiographic practice 2015. 2017.
3. Henderson I, Mathers SA, McConnell J. Advanced and extended scope practice of diagnostic radiographers in Scotland: Exploring strategic imaging service imperatives. Radiography 2017; 23: 181-6.

P129 Don't fear the theatre? Newly-qualified qualified diagnostic radiographers' tales of conflict and camaraderie

Charles Sloane[1]; Paul K. Miller[1]; Julie De Witt[2]; Mark Hoelterhoff[3]; Amanda Marland[1]
[1]University of Cumbria; [2]University of Derby; [3]University of Edinburgh

Background: The rapidly changing landscape of healthcare provision in the UK has left many medical imaging curricula struggling to fully equip their graduates for immersion in clinical practice upon qualification (Sloane and Miller, 2017). The national study from which the findings reported below are drawn aimed to explore the practical experiences of recently qualified diagnostic radiographers, with a view to highlighting how well-prepared they had found themselves to be in professional contexts. A key emergent concern related to working in operating theatres.
Methods: Extended semi-structured telephone interviews were conducted with N=20 radiographers (f=13, m=7) working at sites across the UK. All had graduated a maximum of two years previously. Transcribed data were investigated using the techniques of Straussian Grounded Theory (Waring et al., 2018).
Results: Theatre-related experience addressed four core key participant concerns. (1) A lack of academic and placement-based preparation regarding "what to expect" in theatre, both of which brought into sharper relief: (2) A sense of unpreparedness for the technical expectations of a radiographer in theatre, and (3) the often highly pressurised - and sometimes inferably hostile - interpersonal environment therein. The latter, however, was to some extent offset by (4) a reported strong sense of camaraderie and support among radiographers themselves, and particularly immediate peers, around theatre work.
Conclusion: These findings confirm and develop upon a number of concerns raised by Naylor and Foulkes (2018) regarding student radiographers' readiness for the technical and social demands of theatre, and underscore a possible shortfall in current curricula and placement structures.

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2. Sloane C and Miller PK (2017) Informing radiography curriculum development: The views of UK radiology service managers concerning the 'fitness for purpose' of recent diagnostic radiography graduates. Radiography 23(1s): 16-22.
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P130 Actionable reporting audit: Are radiologists appropriately answering the clinical question?

Ahmet Baysal; Akanksha Garg; Sharif Abdullah
West Middlesex University Hospital

Introduction: As per the Royal College of Radiologists (RCR), all radiology reports must meet certain criteria to ensure they are informative, concise and can be appropriately acted upon by the requesting clinicians[1]. Actionable reporting has been shown to improve patient management and clinical outcomes[1]. Radiologists should be achieving 100% in the following standards: 1) Did the report answer the clinical question,
2) Was a tentative/differential diagnosis provided, 3) Was advice provided regarding the next step, 4) Was the advice provided appropriate.
Methods: Retrospective data was collected regarding 100 CT abdomen-pelvis reports at a London-based DGH between February-March 2019. This included elective and emergency scans, and excluded scans reported as 'normal'. Interventions were carried out as below and re-audited in November 2019. Qualitative analysis was independently carried out by two junior doctors supervised by a consultant radiologist.
Results: Initial data showed standards 1 and 2 were relatively well met at 98% and 95% respectively. Standards 3 and 4 were considerably lower at 55% for both. The results were presented locally to radiologists and posters were disseminated throughout the department to increase awareness and remind staff of the expected RCR standards. Results of the re-audit after the interventions were implemented showed an improvement of all standards, particularly 3 and 4, which both improved to 90%.
Conclusion: Actionable reporting can be achieved through regular audit and improving awareness. This has a significant impact on patient care as reports not meeting the desired criteria can result in avoidable delays and impact patient outcomes.

1. The Royal College of Radiologists. (2018) *Standards for interpretation and reporting of imaging investigations, Second Edition*. London: The Royal College of Radiologists.

P131 Image interpretation – Celebrating 10 years of improving patient care

Dorothy Keane
The Society and College of Radiographers

Background: 38% of health professionals in England use e-learning for healthcare for their own learning (HEE Towards Maturity Index). The purpose of this poster is to reach out to the 62% who don't use the e-LfH resources. To share details on how they can access the materials, why it is relevant and what is available to them. This poster highlights the 10th Image Interpretation programme which celebrates 10 years of providing e-learning for radiographers.
Purpose: This poster will enable learners to: register for free CPD materials, find content relevant to their practice and reflect on how they can use these learning materials in their practice.
Summary: The poster will show a 10-year development timeline that highlights content on different modalities and specialities. Information on how to access the content will be provided as well as statistics on the usage of the programme, and ideas for embedding the learning in practice. User feedback will be invited. We envisage this submission as a poster and/or oral poster in the education strand.

HEE Towards Maturity Index (In print).

P132 Emotional effects impacting diagnostic radiographers in oncology: Are current support structures fit for purpose?

Scott Robertson; Delara Khodabakhshi
The Royal Marsden Hospital NHS Trust

Introduction: Radiographers have regular and repeated contact with oncology patients and compassion fatigue can be caused by repeated exposure to stressful situations[1]. Few studies have looked at the risk of emotional exhaustion radiographers[1-3], but the limited evidence suggests an issue exists[3]. This study aimed to identify the extent of emotional exhaustion in diagnostic radiographers, and whether current support services offered by the Trust meet the needs of staff.
Method: A questionnaire was sent electronically to all diagnostic radiographers in an oncology centre. The questionnaire was non-validated, but pilot tested and scrutinised by an internal audit committee. Anonymous data was gathered, and results discussed with internal staff support service leads.
Results: The response rate was 57.8%. Direct questions found that staff felt working in oncology was different from other sites. There was evidence of a high impact on mental and physical wellbeing of staff. Most staff requested services offered by the Trust but there were issues in accessing them. There was support to develop a new radiographer focussed discussion group. Themes identified centred around staff mental health concerns, maintaining work-life balance, maintaining the clinical service and perceived views of other staff. The privacy of such sessions was also raised.
Conclusion: Diagnostic radiographers experience emotional stresses similar to other oncology staff. This was a single centre study, showing that oncology radiographers work in a specific environment, and have different emotional needs. Current support structures need to be enhanced and there is a need to develop more radiographer specific support.

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2. Jones, M., Wells, M., Gao, C., Cassidy, B. and Davie, J. (2011). Work stress and well-being in oncology settings: a multidisciplinary study of health care professionals. *PsychoOncology*, 22(1), pp.46-53.
3. Murray, N. and Stanton, M. (1998). Communication and counselling oncology patients—are diagnostic radiographers adequately supported in this role?. *Radiography*, 4(3), pp.173-182.

P133 Prison life and cancer care; A case study

Anne Jessop
Weston Park Cancer Centre

There are 83,014 prisoners detained within the UK penal system the majority of these being of male population (79,205) (gov.uk 2019). Gov.UK state: Prisoners get the same healthcare and treatment as anyone outside of prison. Treatment is free but has to be approved by a prison doctor or member of the healthcare team. Most problems are dealt with by the healthcare team. If they can't, the prison may: get an expert to visit the prison, arrange for treatment in an outside hospital. The UK in 2015 documented 359,960 new cases of cancer, 183,000 of those being males (Cancer Research UK 2019). Cancer Research also states that the lifetime risk of developing cancer is 1 in 2. It is likely that there are males within the prison system with a cancer diagnosis. Visits outside prison require prisoners to be escorted by prison officers; their job is to maintain a secure environment. There could potentially be conflict between care and custody as there needs to be some degree of flexibility in order to cater for the individual needs of patient /prisoner. Attending for radiotherapy can be daily visits over several weeks, prison staff need to be available to accompany the prisoner to all appointments. Attending for radiotherapy can be a stressful and anxious time for

many patients; the same can be said for a person attending from prison. Daily travel to the radiotherapy department may be seen as a positive an opportunity to view the outside world.

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2. www.gov.uk/government/statistics/prison-population-figures-2018 [Nov] [2019].

P134 Investigation of cranial nerve V (trigeminal) neuralgia with MR imaging: The way to go

Stavroula Theodorou[1]; Daphne Theodorou[2]; Vasiliki Tsaggou[2]; Soultana Papadopoulou[1]; Anna Gotsi[2]
[1]University Hospital of Ioannina, Greece; [2]General Hospital of Ioannina, Greece

Background: Multiple pathologic conditions can cause trigeminal neuralgia including microstructural abnormalities of the trigeminal nerve (TN) (cranial V) itself, or the perineural anatomic structures.

Purpose: We present the conventional MR imaging/MR-angiographic findings of neurovascular compression of the TN. Trigeminal neuropathy is a facial pain syndrome characterized by the sudden onset of intense pain that can last from a few hours to several days. The TN is divided into four intracranial (brainstem, cistern, the Meckel cave and cavernous sinus), and the extracranial segment. Consideration of the pathologic conditions affecting the TN by these anatomic locations is helpful in differential diagnosis. Among the intra- and extracranial causes associated with trigeminal neuralgia are multiple sclerosis, infarct, aneurysm, neurovascular compression, acoustic or trigeminal schwannomas, meningioma, and malignant tumors. MR imaging may allow identification of the site of nerve dysfunction, because it affords scrutiny of the entire course of the TN and surrounding structures. A 63-year-old man presented with trigeminal neuralgia, numbness of the muscles of mastication on his left cheek, and headache. The patient reported paroxysmal neuralgia for years. On the axial T2-weighted and FLAIR images of the brain and the skull base there was abnormal configuration of cranial nerve V in the region of the brainstem, on the left side. MR angiographic images revealed neurovascular compression of TN by the anomalous, curved and deviated left vertebral artery, comprising vertebrobasilar dolichoectasia.

Summary: MR imaging can prove helpful in the investigation of trigeminal neuralgia caused by various causes including neurovascular compression.

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P135 Intracranial metastases – Putting the pieces together

Amina Odeh[1]; Mohammed Babsail[1]; Mufudzi Maviki[2]; Anthony George[1]; Martin Tapp[1]
[1]Torbay Hospital; [2]University Hospitals Plymouth NHS Trust

Background: Intracranial metastases represent the majority of central nervous system (CNS) tumours and are considered to be one of the leading causes of cancer mortality. It's also worth noting that intracranial metastases can be the first presentation of an extra-cranial primary malignancy.

Purpose: Illustrate common imaging characteristics of intracranial metastases. Outline different mechanisms of disease dissemination. Discuss relevant differential diagnoses.

Summary: Common primary tumours which metastasise to the CNS include lung cancer, breast cancer, renal cell carcinoma, melanoma and colorectal carcinoma. Intracranial metastases have different distribution patterns depending on the aetiology of the primary malignancy. Parenchymal brain metastases usually manifest at the grey white matter interface of the cerebral hemispheres. The majority of such metastases are intraaxial and commonly spread in a haematogenous manner. Metastatic disease may disseminate via the cerebrospinal fluid (CSF), infiltrate adjacent structures or spread in a perineural/perivascular distribution. The second most common site of intracranial metastases are the cranial vault and dura. These predominantly originate from primary breast and prostate cancer. Calvarial and dural metastases tend to present as solitary deposits, as opposed to parenchymal metastases. Leptomeningeal metastases represent approximately <5% of metastatic brain disease. In contrast to other intracranial metastases, these deposits most commonly stem from primary brain tumours, namely lymphoma and glioblastoma. Intracranial metastases have several distribution patterns. Radiologists can deduce potential sources of a primary malignancy based on deposit location and imaging characteristics. Correctly identifying these lesions ensures patients are managed appropriately.

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4. El-Feky M and Orton T et al Brain metastases, Radiopaedia, 17/12/18.

P136 **How frail is the patient population in the outpatient radiotherapy department?**

Jakov Tiefenbach; Harriet Dulson; Adam Wild; Emma Megarry; Angus Boyd; Denisa Stronceková; Luke Thompson
University of Edinburgh

Patients requiring outpatient radiotherapy treatment are often elderly with a large number of associated co-morbidities. Many of these patients will live far away from the hospital and find daily commutes burdensome. The aim of our study was to evaluate the extent of frailty amongst the radiotherapy outpatient population over 65 and discuss the potential implications of these findings. A data collection form was compiled using modified Balducci criteria. The information for this study was gathered retrospectively from patient notes who attended radiotherapy at the local general hospital. The data was input into an excel sheet and analysed accordingly. The average frailty levels by cancer type, age and underlying frailty factors were calculated. 217 patients attended radiotherapy, of whom 84 patients (38%) met the inclusion criteria. 41 patients (49%) of the study cohort were categorised as frail. The median age was 73.4, whilst taking 5+ medications was the primary reason for frailty classification, present in 70.7% of the frail population. The most common co-morbidity was hypertension (75.6%), while atrial fibrillation was found to be most strongly associated with frailty. The prevalence of frailty varied widely by cancer type. 49% of outpatients from this snapshot sample were deemed to be frail by modified Balducci criteria. This figure is much higher compared to the general population and highlights the need for better care of this patient group. A new standard patient clerking proforma form may be beneficial to identify frail patients and tailor their radiotherapy.

P137 **Discovering the lyre sign: A case presentation and overview of carotid body tumour**

Maria Asad[1]; Muhammad Asad Rahi[2]
[1]University of Manchester; [2]Royal Preston Hospital

Background: We report the case of a 72-year-old lady presenting to A&E with a neck lump and dysphonia. Initial US Neck revealed a hypervascular mass at the Carotid Body. Subsequent CT demonstrated the "Lyre sign"[1] and in conjunction with MRI, a diagnosis of Carotid body tumour was made. Carotid Body Tumours are uncommon neoplasms, arising from paraganglionic cells in the adventitia layer of the carotid artery, usually at the common carotid artery bifurcation. Despite their rarity in the population, these tumours account for 65%[2] of all head and neck paragangliomas, and thus commonly present as neck mass, dysphonia and cranial nerve palsies. They can be categorised anatomically by the Shamblin classification and the gold standard treatment is surgical resection.

Purpose: Using a case presentation we aim to highlight: i) The appearance of Carotid body tumours in various imaging techniques, ii) the appearance of the radiological "Lyre sign", iii) and to raise awareness that a differential diagnosis of carotid body tumour should be considered in a patient with a neck mass.

Summary: Educational poster, presenting a case of a carotid body tumour to highlight the aetiology, radiological appearances, brief classification and management of these tumours.

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P138 **Pre-operative embolization of the uterine artery prior to vaginal mass excision**

Zainab Sharaf; Peter Kember
Torbay and South Devon NHS Trust

Background: Vaginal wall masses are considered rare neoplasms with broad differentials including malignant pathologies. There are no standardised recommendations due to the low incidence, but the general consensus recommends excision and histology examination to determine further clinical management. <1> Lesions of the lower female genital tract is considered a diagnostic challenge to the radiologist pertaining to the presence of broad range of tissue in a limited anatomical region.

Purpose: To discuss the diagnostic approach to vaginal masses from a radiological perspective. To highlight suggestive imaging features of myofibroblastoma. To illustrate the contribution of the radiologist in the patient's diagnostic and therapeutic experience.

Summary: A case review of the clinical presentation, radiological imaging, interventional and surgical management is presented with a focus on the role of the radiologist in this patient's hospital experience.

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