

**Background** Previously baseline exams for radiography students on technique within the X-ray room were conducted with a student 'X-raying' another student being marked by a lecturer with a clipboard. We felt that this wasn't authentic and did not encourage development of them into autonomous practitioners.

**Method** Simulated patients (experts by experience) were employed for the exams to add a real patient to the scenario. A lecturer was watching remotely as a safe guard measure. Once the examination was complete the student took the SD card from the video camera and joined another lecturer in a separate room- a neutral space. The video was played back to the student and the student then formulated and wrote their own feedback using an appreciative enquiry approach. The lecturer employed coaching approach to encourage the students to discover their own strengths and make an action plan for clinical placement. The GROW model was used as a framework for the subsequent development discussions arising in feedback session.

**Results** The student feedback was very positive. Before and during the exam they were very focused on the technical skills elements but watching the video back highlighted their patient care skills; this approach helped each student to focus on their patient interaction.

Using a combination of authentic simulation, reflection using video and a coaching approach to feedback, patient communication was the focus of the student's personal and professional development.

1. MsDowall, A. Freeman, K. Marshall, S. (2014) *Is FeedForward the way forward? A comparison of the effects of FeedForward coaching and Feedback.* *International coaching psychology review* 9 (2) 135-146  
2. Sharpnack, P.A. Goliat, L. Baker, J.R. Rogers, K. Shockey, P. (2013) *Thinking like a nurse: Using video simulation to rehearse for professional practice.* *Clinical Simulation in Nursing* 9 e571-e577  
3. Shelly, J. Andrews, C.M. Ravert, P.R. (2013) *Debriefing simulations: Comparison of debriefing with video and debriefing alone.* *Clinical Simulation in Nursing* 9 e585-e591

## EDUCATION & RESEARCH

### p208 Learning from Excellence

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**Background:** Since the publication of Standards for Radiology Discrepancy Meetings by the RCR in 2007, regular discrepancy meetings have been almost universally adopted by radiology department in the UK. We carry out a meeting every month as a part of clinical governance to support best practice and to contribute to improved patient safety. We have added what we call "Golden Spot" award which we award to a reporter every month who have spotted something unusual or hidden findings which had a potential to be missed. This way, it's an appreciation to the said reporter and also success story which keeps us motivated in our job.

**Purpose:** Safety in healthcare has traditionally focused on avoiding harm by learning from error. This approach may miss opportunities to learn from excellent practice. Excellence in healthcare is highly prevalent, but there is no formal system to capture it. We tend to regard excellence as something to gratefully accept, rather than something to study and understand.

**Summary:** I proudly present some of our "golden spots" from a year of Discrepancy meeting at our hospital. Being a junior trainee, it added a great deal of educational value to my reporting. All modalities have been included. 2 out of 7 Cases I chose for this presentation are as below: Incidental left lower lobe mass picked up on prelim abdominal plain film from a pyelogram serious.

1. Adrian Brady, (2012) *Discrepancy and Error in Radiology: Concepts, Causes and Consequences.* *Ulster Med J* 2012, 81(1):3-9  
2. Steven Marc Friedman, (2013) *Clinical impact of diagnostic imaging discrepancy by radiology trainees in an urban teaching hospital emergency department.* *International Journal of Emergency Medicine*

### p209 Introduction to interventional radiology: A study session for multi-disciplinary students

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Royal Liverpool University Hospital

**Background:** Practice Education Facilitators in the hospital Trust work with the Universities to facilitate multi-disciplinary student educational opportunities while on placement. They found student's knowledge of Interventional Radiology (IR) to be limited and requested a 3 hour tutorial be provided by IR staff. The aim was to develop students' awareness of IR and assist placement preparation.

**Purpose:** To demonstrate the variety of educational methods possible for students. By providing students with basic knowledge, they can maximise their learning experience on placement. This may be used by other Trusts as a way to assist in education, developing the future of the professions.

**Summary:** The aim of the study session was to give multidisciplinary students a basic understanding of Interventional Radiology including the team, procedures and legal requirements/policies in place. An informative PowerPoint presentation and interactive practical session were planned and presented to students, to engage and educate them in the services provided by IR. An overview of the Radiology department was given, including the history of Radiology and education on the imaging pathways used prior to IR procedures. Radiation regulations and common IR procedures were other topics covered. 80+ students attended from backgrounds of Radiography, Nursing, Physiotherapy and Student Associate Physician, developing an insight into IR, the procedures performed and patient preparation required. This study experience prepared them for a placement and enabled them to cascade their learning to others, thus improving patient care and future educational experiences. After feedback, the session will be presented again.

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p210 **The student diagnostic radiographer and the obese patient: Quantifying attitudes and predictors in the UK**

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**Background:** Obesity is putting increasing pressure on radiology departments across the UK, and the staff within them (Woods, Miller & Sloane, 2016). Despite this, very little is known about the attitudes of student radiographers toward obese patients, and the factors that influence these attitudes.

**Method:** An online self-report questionnaire, based upon the abbreviated Fat Phobia Scale (Bacon, Scheltema & Robinson, 2001), was administered. Alongside attitudes towards obesity, a range of potential sociodemographic predictors of weight-bias were measured: year of study, total amount of workplace training/experience to date, additional/previous healthcare experience, and weight-oriented self-perception. N=180 undergraduate radiography students, training and studying in the North West of England, were invited to participate. N=108 completed the instrument (F = 84, M = 24); the average age of participants was 25.58 years (SD = 8.00).

**Results:** Provisional results indicate that attitudes towards overweight people were strongly skewed towards the negative across the full sample. While participants who saw themselves as overweight or very overweight held less broadly negative views than those who did not, there was no significant "softening" of negative attitudes with greater age, education or workplace experience in radiography or other healthcare areas.

**Conclusion:** The highlighted relationship between attitudes to obesity and self-image is in line with extant psychological literature. The generally negative attitudes of the students, however, and the fact that neither undergraduate education nor NHS clinical experience seems to ameliorate them in any substantial way, indicates that both domains may need to address this issue in the future.

*Bacon JG, Scheltema KE, Robinson BE (2001) Fat phobia scale revisited: the short form. Int J Obes Relat Metab Disord 25: 252–257. Woods AL, Miller PK, Sloane C (2016) Patient obesity and the practical experience of the plain radiography professional: On everyday ethics, patient positioning and infelicitous equipment. Radiography 22(2): 118-123.*

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p211 **Degree classification: Does the calculation model affect the award?**

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Universities have the freedom to define their own calculation model to define the degree classification awarded. The output profile features as a key metric in ranking tables, yet this conceptually could be affected by the calculation method and provide a source of inequality.

The scores from Level 5 & 6 modules from a group of final year students (n=50) was selected. Four different (A,B,C,D) models were applied to the same data to calculate the final degree score and subsequent award classification and analysed based on raw scores and rounded values. All four models appear to deliver similar calculated scores (Mean: A=62.9%: B=65.7%: C=64.8%: D=62.7%) however there is a distinct impact on the degree classification profiles. The proportion of students achieving First or Upper Second class awards for models A to D are 72%, 80%, 74%, 70% respectively. If rounding is applied this changes to 72%, 82%, 78%, 70%. Additional application of discretion at classification boundaries may further positively impact the results. Calculation models have minimal impact on lower class awards.

The results demonstrate that the calculation model has an effect on the degree classification awarded. In particular, models B and C produce more favourable outcomes. Universities using these models may benefit from an improved contribution to ranking performance.

*1. Burgess, R. (2007) Beyond the honours degree classification: Burgess Group Final Report, Universities UK*

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p212 **The role of the consultant radiographer in diagnostic imaging services in the United Kingdom and barriers to their practice**

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**Purpose and Aim:** Consultant radiographers were introduced into practice after the Department of Health released the 'Advance Letter PAM(PTA) 2/2001' in 2001. After 15 years of development the role is still in its relative infancy with 102 consultants currently registered with the Society of Radiographers. This review aims to assess the role of consultant radiographers in clinical practice, the barriers to their practice and improvements to the role that could ensure its future at the forefront of radiography.

**Method:** The study consisted of a literature review that was designed to examine the role of the consultant radiographer with respect to the four core functions of consultant level practice. Searches of the literature were conducted to gather evidence related to the aims, the literature was appraised for quality and this was considered where possible when extracting evidence and forming conclusions.

**Results:** The consultant radiographer has been a beneficial addition to the radiography workforce. Waiting times for services and delays in image reporting have been reduced, service delivery has improved and radiologists' workloads have been eased. Consultant radiographers have faced many barriers during their development however a few persist, these continue to be challenged as the consultant radiographer role grows in numbers and strength.

**Conclusions:** The guidelines produced in 2001 by the Department of Health are rarely adhered to in practice and may need to be revised. There is no formal education or training pathway which would provide potential consultant radiographers with clear targets of educational attainment and knowledge to aim for. 1. Department of Health (2001) Advance Letter PAM(PTA) 2/2001. Available at: [http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/en/documents/digitalasset/dh\\_4011004.pdf](http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/en/documents/digitalasset/dh_4011004.pdf) (Accessed: 11 September 2016). 2. Harris, R. and Patterson, A. (2015a) 'Exploring the research domain of consultant practice: Perceptions and opinions of consultant radiographers', *Radiography*, 22(1), pp. 12-20. doi: 10.1016/j.radi.2015.03.002. 3. Kelly, J., Hogg, P. and Henwood, S. (2008a) 'The role of a consultant breast radiographer: A description and a reflection', *Radiography*, 14(1), pp. e2-e10. doi: 10.1016/j.radi.2008.10.003. 4. Lawson, S. (2008) 'Case study: Solitary intra-cystic papilloma - Advances in consultant radiographic practitioner led ultrasound guided mammotome excisional biopsy', *Radiography*, 14(1), pp. e79-e81. doi: 10.1016/j.radi.2008.09.005. 5. Price, R.C. and Edwards, H.M. (2008) 'Harnessing competence and confidence: Dimensions in education and development for advanced and consultant practice', *Radiography*, 14(1), pp. e65-e70. doi: 10.1016/j.radi.2008.11.005. 6. Rees, Z. (2014) 'Consultant breast radiographers: Where are we now? An evaluation of the current role of the consultant breast radiographer', *Radiography*, 20(1), pp. 121-125. doi: 10.1016/j.radi.2013.12.005.

p213 **Building capacity: An evaluation of the use of non-traditional placements in diagnostic radiography education**

Emma Hyde; Susan Errett

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**Background:** Students studying to become a diagnostic radiographer are required to undertake clinical placements in order to gain the practical skills necessary to become a registered health care professional. This totals approximately 50% of their programme<sup>1</sup>. Recent changes in technology (such as the move to digital radiography), changes to staffing levels and shift patterns, alongside increasing demand for placements, has made placement capacity a growing issue for Higher Education Institutions (HEIs)<sup>2,3,4</sup>. As part of a range of strategies designed to address capacity issues, a number of new placements in care settings, and with private, voluntary and independent providers (PVI), were rolled out to students at one UK HEI. The care placements were expected to have the added advantage of embedding care & compassion, a key area of concern since the Francis enquiry<sup>5</sup>.

**Purpose:** To share findings of research into student radiographer's experiences of placements in a care setting, where there is no diagnostic imaging activity, and student radiographers experience of placements in private, voluntary and independent imaging settings. The research found the care and PVI placements generally went well for most students. However, it was clear that further guidance was required to support both students and clinical staff working in the placement settings, to ensure that all available learning opportunities in both settings were maximised.

**Summary:** The display will include images of students on placement (with permission)

1. College of Radiographers . *Quality Standards for Practice Placements*. London: The College of Radiographers. 2012. Available at: <https://www.sor.org/learning/document-library/quality-standards-practice-placements> 2. St John-Matthews, J., Woodley, J., Dumall, K., Bailey, A. & Mills, K. (2015) *Longer hours and shorter weeks. Imaging & Therapy Practice*. November 2015 3. Sloane, C. (2010) *Applying theory to practice. Imaging & Therapy Practice*. August 2010 4. Nightingale, J. *Radiography education funding - crisis or opportunity?* *Radiography* 22 (2016) 105-106 5. Francis, R. *Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry* 2013. Available at: <http://www.midstaffpublicinquiry.com/report>

p214 **Returning to the register: A bespoke return to practice programme for diagnostic radiographers**

Emma Hyde; Sue Errett

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Diagnostic Radiography is currently listed as a shortage occupation by the UK government, with vacancy rates across the UK at between 15-20% 1,2. This shortage has led to renewed interest in encouraging qualified radiographers whose registration with the HCPC has lapsed, to return to the profession 3. Guidance and support to help radiographers return to practice is available from both the regulatory body (HCPC) and professional body (Society of Radiographers) 4,5. However, recent changes in technology, such as the move to digital radiography, and changes to the role of the diagnostic radiographer, such as image commenting, have anecdotally been barriers to returnees.

The CoR approved 'Return to Practice in Diagnostic Radiography' programme at one UK university provides a structured way for returnees to meet the Health and Care Professions Council (HCPC) return to practice requirements. The programme is designed to support returnees to re-establish clinical competency in a range of radiographic techniques and diagnostic imaging procedures within their scope of practice. The programme includes scheduled learning and teaching activities, simulation in the clinical skills suite and problem based scenarios. Guided independent study is utilised to support individual learning needs identified in a 'gaps analysis' exercise. Placement learning provides the opportunity for returnees to apply underpinning theory into current clinical practice, and demonstrate professional and radiographic skills.

This poster will share the experience of successfully supporting the two cohorts of return to practice learners through the programme.

1. Shortage occupation list (2015). Available at:

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/423800/shortage\\_occupation\\_list\\_april\\_2015.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/423800/shortage_occupation_list_april_2015.pdf) 2. Vacancy rates (2015) Society of Radiographers. Available at: <https://www.sor.org/learning/document-library/diagnostic-radiography-uk-workforce-report-2014/5-vacancy-rate> 3. Helping allied health professionals return to practice. Health Education England. Available at: <https://www.hee.nhs.uk/hee-your-area/east-midlands/our-work/attracting-developing-our-workforce/allied-health-professionals/helping-allied-health-professionals-return> 4. Returning to practice (Health & Care Professions Council). Available at: <http://www.hpc-uk.org/registrants/readmission/> 5. Return to practice (College of Radiographers). Available at: <https://www.sor.org/career-progression/return-practice>

p215 **A method for integrating preliminary clinical evaluation education into an undergraduate diagnostic radiography programme**

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**Background** Preliminary clinical evaluations (PCEs) remain a vision by the College of Radiographers<sup>1</sup> but have not been widely integrated into practice<sup>2</sup>. Reasons for this include reluctance from practitioners themselves due to issues cited as lack of education and confidence<sup>3,4</sup>

**Method** Within a final year undergraduate diagnostic radiography programme a new method of developing image interpretation and PCE writing skills was trialled. Over several months, each week an image bank was released to students on a topic related to a keynote lecture. Students were encouraged to undertake the 'test' in their own time by considering if the images were abnormal and required them to write a PCE. Small group tutorials were then conducted to review the images and discuss the relevant points and discussion on how a PCE could be constructed. This allowed the student to calculate their own accuracy and appraise their own PCE's. A survey was then conducted to gain feedback regarding the method.

**Results** Students found the method of teaching very useful to their own personal development and increased confidence in writing PCE's. It was seen as a potential way of assessing accuracy of image interpretation and in developing other skills such as anatomy and medical terminology and was suggested to be useful in all levels of radiography education.

**Conclusion** This approach appears an effective way of developing confidence in writing PCEs as well as assessing accuracy. It is proposed that it will be integrated throughout the programme as a way of monitoring progression towards qualification and beyond.

1. Society and College of Radiographers. (2013) Preliminary clinical evaluation and clinical reporting by radiographers: policy and practice guidance. Society and College of Radiographers, London 2. Snaith, B. and Hardy, M. (2008) Radiographer abnormality detection schemes in the trauma environment - an assessment of current practice. *Radiography*. 14(4), 277-81 3. Lancaster, A. and Hardy, M. (2012) An investigation into the opportunities and barriers to participation in a radiographer comment scheme, in a multi-centre NHS trust. *Radiography*. 18(2), 105-8 4. Wright, C. and Reeves, P. (2016) Image interpretation performance: a longitudinal study from novice to professional. *Radiography* (online).

p216 **An investigation into first year diagnostic radiography students' preparedness to deal with ill service users in two UK universities**

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Transition to university level study is known to be a difficult adjustment for some students<sup>1,2,3</sup>. Transition to a work based learning opportunity such as clinical placement can be really hard<sup>4-9</sup>. Key components that influence a successful transition to placement can be grouped into two main areas:

1. Practicalities - transport, accommodation, uniforms, work patterns, child care issues, etc.
2. Socialization into the profession. At the same time as dealing with these issues, radiography students are also starting to work with very ill service users - usually for the first time. They may work with very ill service users in areas such as intensive care, coronary care, neonatal units, and resuscitation rooms.

This poster will present research that was undertaken at two UK universities to investigate the preparedness of first year students to deal with very ill service users. The research took a qualitative approach, using focus groups at both universities to collect data. The data was audio-recorded and transcribed, and then analysed using a thematic approach. The poster will discuss the issues which were identified by participants in the study, and make recommendations for curriculum development to support future students.

1. Thomas, L. *What Works? Student retention & success*. 2012. Available online at: [www.heacademy.ac.uk](http://www.heacademy.ac.uk) 2. Quality Assurance Agency (2012) *UK Quality Code for Higher Education Part B: Assuring and enhancing academic quality. Chapter B3: Learning and Teaching*. Available from: <http://www.qaa.ac.uk/Publications> 3. College of Radiographers (2013) *Improving the retention of the radiotherapy workforce – the role of practice placements in student attrition from pre-registration programmes in England*. London: The College of Radiographers, 2013. Available from: <http://www.sor.org/learning/document-library/improving-retention-radiotherapy-workforce-role-practice-placements-student-attrition-pre> 4. Hyde E. (2013) *Managing student expectations: what do prospective student radiographers expect from their programme of study at one university?* *Imaging & Therapy Practice* April, 2013 5. Hyde E. (2015) *A critical evaluation of student radiographers' experience of the transition from the classroom to their first clinical placement*. *Radiography* 2015, 21(3), 242-247 6. Strudwick RM, Harvey-Lloyd J.M. (2012) *Ready or not? How prepared are diagnostic radiography students for their first practice placements. A small scale study in one university*. *Imaging & Therapy Practice* December, 2012 7. Andrew N, McGuinness C, Reid G, Corcoran T. (2009) *Greater than the sum of its parts: Transition into the first year of undergraduate nursing*. *Nurse Education in Practice* 2009, 9, 13-21 8. Mackintosh C. (2006) *Caring: The socialisation of pre-registration student nurses: A longitudinal qualitative descriptive study*. *International J Nurs. Stud.* 2006, 43, 953-962 9. Leducq M, Walsh P, Hinsliff-Smith K, McGarry J. (2012) *A key transition for student nurses: The first placement experience*. *Nurse Education Today* 2012, 32, 779-781

p217 **A review of culture for raising concerns in diagnostic imaging**

Alexandra Partner, University of Derby

**Background** Whistleblowing and raising concerns has been in the public eye since the release of the Francis report into the major failings at the Mid Staffordshire NHS Foundation Trust. Whilst many major reports have outlined how the failings came about and what changes need to be made, there is still little known about the state of care, confidence levels of staff to report concerns and what factors contribute to this in diagnostic imaging.

**Methods** A literature review of the culture for raising concerns in diagnostic imaging was undertaken. A review of literature written about diagnostic imaging's culture, leadership, education and what can be learnt from large scale reports was considered. Where there is a lack of reliable, published literature in radiography, sources from across health care have been used. Results Themes coming through are that a culture of blame or the fear of punishment even if this is not actually the case still exists in some cases. There is a lack of national learning from errors in diagnostic radiography and a failure to share this across the profession. Although there is a focus on improving quality of care there is a lack of an evidence base in radiography.

There is little published in UK Radiography on the culture around raising concerns, learning from mistakes and staff confidence levels in doing this. It is unknown how much goes un-reported in Radiography, what clinical radiographers feel about whistleblowing, self-reporting and raising concerns about others

Francis, Sir R (2013). *The Mid Staffordshire NHS Foundation Trust Public Inquiry Final Report*. Available online at <http://webarchive.nationalarchives.gov.uk/20150407084003/http://www.midstaffspublicinquiry.com/report> accessed 24/10/2016 at 14:20 Keogh, B (2013) *Review into the quality of care and treatment provided by 14 hospital trusts in England: overview report*. NHS. Available online at <http://www.nhs.uk/nhsengland/bruce-keogh-review/documents/outcomes/keogh-review-final-report.pdf> accessed 24/10/2016 at 13:50 Morgan, S (2015). *Radiography students in hospitals tell stories that make me want to weep*. *The Guardian*. Available online at: <https://www.theguardian.com/healthcare-network/views-from-the-nhs-frontline/2015/jul/27/radiography-students-hospitals-stories-make-me-weep> accessed 08/10/2016 Society and College of Radiographers (2013a) *The joint response of the Society of Radiographers and the College of Radiographers to the Final Report of the Independent Inquiry into care provided by Mid Staffordshire NHS Foundation Trust*. Available online at <https://www.sor.org/learning/document-library/joint-response-society-radiographers-and-college-radiographers-final-report-independent-inquiry-care> accessed 24/10/2016 at 14:50



p218 **Teaching radiology to medical students: Evaluating the methods and mindset**

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**Background** Radiology teaching for medical students can often unfortunately be perceived as relatively "dry" when compared to clinical specialties which may involve more apparent narrative variety in patient cases. The literature studying this area of medical education remains limited. This study aims to find areas of potential practical improvement from which Radiology teaching can be made more engaging and effective at medical school. It also aims to find the topics of Radiology which seniors and students perceive to be important areas of knowledge for practising junior doctors.

**Methods** Data collection was carried out using a standard questionnaire (image attached below) targeted at three demographic groups: "Students" (including medical students and Foundation Year 1 & 2 doctors); "Trainee Radiologists"; and "Consultant Radiologists". This was distributed through a district general hospital and a teaching hospital in the UK with results to be collected over a period of 4 months.

**Results** The quantitative data collection is currently still in progress; preliminary results show a variety in response patterns from all stages of training. Responses appear to be aligned with personal style as well as professional experience, yet a few themes manifest themselves as generally popular: e.g. using visual overlays for presenting key features on imaging and using cases to illustrate the core knowledge base.

**Conclusion:** Overall, it appears that utilising the visual nature of Radiology can increase its appeal to students, as well as the effectiveness of the teaching. Case-based discussions, especially of some key clinical emergencies, should also supplement the factual background.

1. Courtier J, Webb EM, Phelps AS, Naeger DM. Assessing the learning potential of an interactive digital game versus an interactive-style didactic lecture: the continued importance of didactic teaching in medical student education. *Pediatr Radiol.* 2016;46(13):1787-1796. 2. Hilmes MA, Hyatt E, Penrod CH, Fleming AE, Singh SP. Radiology in Medical Education: A Pediatric Radiology Elective as a Template for Other Radiology Courses. *J Am Coll Radiol.* 2016;13(3):320-5. 3. Marom A, Tarrasch R. On behalf of tradition: An analysis of medical student and physician beliefs on how anatomy should be taught. *Clin Anat.* 2015;28(8):980-4.

p219 **Student led/peer teaching in healthcare education: The use of innovative pedagogies and journal clubs to enhance research skills of undergraduate radiography students**

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NHS Lothian

Healthcare education is continually evolving to meet the expectations of students, patients, government demands and professional policies. Radiography Education is no different, with the aforementioned factors and the significant rate of change in technology and social advancements impacting on what is required of radiography education and the profession today (1)(4).

The requirement for a healthcare service underpinned in evidence, is a key example of how patient and government requirements impact on healthcare education. In order for the National Health Service to be underpinned in evidence based practice (EBP), so too is the need for an education system which facilitates the learning of skills required to be an evidence based practitioner (7)(8) Journal Clubs are a form of peer assisted learning when facilitated by students and have been used in medical education for years to promote critical thinking, confidence and improve research skills, key skills necessary in the delivery of EBP and research utilisation (2)(8)(5).

Whilst there is a wealth of knowledge on journal clubs perceived benefits in other health care disciplines such as nursing, pharmacy, medicine and radiation therapy (3)(6)(9) there is paucity of literature in radiography profession and education. The lack of research skills in the radiography profession has been reported in literature as an inhibitor to EBP.

The following paper will look at the potential use of journal clubs and peer assisted learning to improve research skills in radiography students and the subsequent need for this.

1. CASTILLO, J., CARUANA, C.J. and WAINWRIGHT, D., 2011. The changing concept of competence and categorisation of learning outcomes in Europe: Implications for the design of higher education radiography curricula at the European level. *Radiography*, 17(3), pp. 230-234. 2. COCHRANE, A. L., 1972. *Effectiveness and efficiency: Random reflections on health services*. London: Nuffield Provincial Hospital Trust. 3. DONOHOE, K.L. et al., 2016. Evaluation of student-led journal clubs. *Currents in Pharmacy Teaching and Learning*, 8(2), pp. 173-177. 4. MALAMATENIOU, C., 2009. *Radiography and research: A United Kingdom perspective*. *European Journal of Radiography*, 1(1), pp. 2-6. 5. MELNYK, M.M., and FINEOUT-OVERHOLT, E., 2015. *Evidence Based Practice in Nursing & Healthcare –A Guide to Best Practice*. 3rd ed. Philadelphia, PA: Wolters Kluwer Health. 6. MILINKOVIC, D., FIELD, N. and AGUSTIN, C.B., 2008. Evaluation of a journal club designed to enhance the professional development of radiation therapists. *Radiography*, 14(2), pp. 120-127. 7. NIXON, S., 1999. Undergraduate research: theory or practice? *Radiography*, 5(4), pp. 237-249. 8. PAGER, S., HOLDEN, L. and GOLENKO, X. 2012. Motivators, enablers, and barriers to building allied health research capacity. *Journal of Multidisciplinary Healthcare*, 5, pp. 53-59. 9. WILSON, M. et al., 2015. Striving for evidence-based practice innovations through a hybrid model journal club: A pilot study. *Nurse education today*, 35(5), pp. 657-662.

p220 **Use of RIPLS questionnaire to evaluate medical imaging and medical students inter professional experience**

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**Background** Interprofessional education is intended to enable healthcare students to gain a better working understanding of how other professions work in order to provide high quality patient care. The RIPLS Readiness for Interprofessional Learning Scale is designed to enable educators to evaluate how the students perceive other professions both before and after an inter professional learning experience and to evaluate if the students value the experience as a positive one going forward in their careers.

**Purpose** To disseminate information on how to use RIPLS when evaluating an interprofessional education intervention.

**Summary** An evaluation of using the RIPLS Readiness for Interprofessional Learning Scale (RIPLS) to determine the inter professional educational experience of Stage 2 medical imaging students and Stage 1 medical students in a medical school

1. Parsell G1, Bligh (1999) *The development of a questionnaire to assess the readiness of health care students for interprofessional learning (RIPLS)*. *J. Med Educ. Feb; 33(2):95-100*.

p221 **The role of interprofessionalism in optimising patient care within imaging departments**

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**Introduction** This critical review is focussed on Interprofessional practice within Imaging and its role in optimising patient care. It considers the implications of both functional and dysfunctional Interprofessional team-working between two or more health professionals from different disciplines working within imaging departments. The importance of Interprofessional working was first highlighted in 1942. Successive governments since the 1970s have published papers on the topic and in the mid 1980s Interprofessional Collaboration was seen as a means of optimising patient care.

**Aims:** To evaluate:

1. the importance of collaboration and communication and their effect on patient care
2. the barriers to Interprofessional learning (IPL) 3. the promotion and development of IPL

**Method:** Three health and medical databases were used to access information relevant to the review and historical papers from the 1980s and 1940s were included in the search. Using topical keywords and terms facilitated a rigorous exclusive/inclusive policy adding to the data credibility and review quality.

**Results** There is evidence that effective Interprofessional Collaboration within Imaging departments increases the quality of patient care by reducing diagnostic tests and maximising strengths and skills of the workforce. However, evidence also shows that whilst radiographers work well together, they can appear closed and guarded when working with other professionals creating a barrier to patient-centred care. Tribalism can hinder Interprofessional collaboration and is present when different professions each have their own occupational culture. This is evident when radiographers work well within their specific profession, but appear to be closed and guarded when liaising with doctors and nurses.

*Beveridge, W. (1942) Social Insurance and allied Services. HM Stationery Office, London. Available at: [onlinelibrary.wiley.com/doi/10.1111/j1467-8500.1943.tb02384.x/abstract](http://onlinelibrary.wiley.com/doi/10.1111/j1467-8500.1943.tb02384.x/abstract) Day, J. *Interprofessional working: an essential guide for health and social care professionals*. 2nd ed. Cengage Learning EMEA, Hampshire: 2013 Stewart, M., Brown, J.B., Donner, A., McWhinney, I.R., Oates, J., Weston, W.W., Jordan, J. (2000). *The Impact of patient-centred care on outcomes*. *The Journal of Family Practice*, 49(9), pp. 796-804 Strudwick, R.M., Day, J. (2004) *Interprofessional working in diagnostic radiography*. *Journal of Radiography* 20:235-240*

p222 **Emotional intelligence, students and curricula: The mystery of the missing EI**

Sarah Lewis<sup>1</sup>; Stuart MacKay<sup>2</sup>; Jonathon McNulty<sup>3</sup>; Peter White<sup>4</sup>

<sup>1</sup>*The University of Sydney, Australia*; <sup>2</sup>*The University of Liverpool*; <sup>3</sup>*University College Dublin*; <sup>4</sup>*Hong Kong Polytechnic University*

**Background:** EI has been promoted as a predictor of leadership, patient satisfaction and suitability for health professional roles however it is a complex concept and the acquisition of EI is challenging to document<sup>1</sup>. Within this presentation, we explore EI through the student life-cycle and explore options for improved research. **Methods:** Using the trait EI questionnaire (TEIQue-SF)<sup>2</sup>, 274 students from radiography Bachelor programs in Australia, Hong Kong, United Kingdom and Ireland completed the surveys at 6 time points throughout their 3 years of study. The data generated Global EI scores and 4 factors of well-being, emotionality, self-control and sociability. Inferential statistics were used to compare to curricula, students' ethnicity/culture and clinical experience.

**Results:** Students' Global EI is significantly below qualified radiographers ( $p \leq 0.01$ ) upon entry into the courses and comparable to that of the general population of the respective countries<sup>3</sup>. As students moved through their 3 year curricula, no significant

changes in Global EI scores were seen. There were no significant differences for age and gender but a significant difference for students' culture ( $p < 0.01$ )<sup>4</sup>.

**Discussion:** Why student EI remains significantly lower at graduation than qualified counterparts remains a mystery. Discussion about the value of embedded clinical placement and reflective learning is essential to understanding EI improvement alongside the role of interventional training to prepare students for emotionally challenging roles. The early practitioner years may also hold answers to the acquisition of EI and we discuss this notion in relation to other health professions and the methods of EI measures they measure.

1. Goleman D, Mckee A, Boyatzis RE. *Primal Leadership: Realizing the Power of Emotional Intelligence*. Harvard Business School Press, Boston, 2002. 2. Petrides KV. *Technical Manual for the Trait Emotional Intelligence Questionnaires (TEIQue) 2009; (1st Edition 4th Printing)*. London: London Psychometric Laboratory. 3. Mackay SJ, White P, McNulty JP, Lane S, Lewis SJ. *A benchmarking and comparative analysis of emotional intelligence in student and qualified radiographers: an international study*. *Journal of Medical Radiation Sciences* 2015; 62: 246–252. 4. Mackay, S, de Galvão e Brito Medeiros, A, Lewis, S, McNulty, J, White, P, Lane, S, *Emotional Intelligence development in radiography curricula: Results of an international longitudinal study*. *Journal of Medical Imaging and Radiation Sciences (In press)*, 2017

## p223 How to tackle common on call scans: An aide memoire

Mubeen Chaudhry

North Cumbria University Hospitals Trust

The radiology on-call is a prospect which fills many junior trainees with dread and indeed some more senior colleagues! The on-call has demonstrated an exponential increase in workload over the years and this does not appear to be abating any time soon. I would like to present a short aide memoire for commonly performed studies whilst on call, thereby, enabling the radiologist to have a structure in mind and feel that an overall thorough 'satisfaction of search' has been performed. The end goal of this is to enable identification of pathology in an accurate and prompt manner. CT Brain -- 3 Bs. Bleed -- intra- or extra-axial. Blockage/Blurring -- a stroke may be manifest as a dense MCA sign due to an underlying thrombus or possibly loss of the insular ribbon resulting in a degree of 'blurring' at this level. More established infarcts would take on a CSF density appearance. Break -- fracture in the skull vault. CT Cervical spine -- ABCS Alignment of the spine. Bones -- fractures or dislocation. Cartilage/ligament assessment. Soft tissue assessment. CT Abdomen/Pelvis -- 6 Fs Free air -- pneumoperitoneum. Free fluid Fat stranding Fat wall -- bowel wall thickening indicative of colitis. Filling defect -- assessment of vasculature to determine thrombus leading to ischaemic change. Fractures -- particularly vital in the case of trauma patients. CTPA -- ABC Aortic dissection -- Important life-threatening abnormality can be diagnosed on CTPA! Big heart/Big vessels -- cardiomegaly / pulmonary artery

## p224 Audit of patient consent to oncology clinical trials prior to imaging

Theresa Taylor Emberton

The Christie Hospital Nhs Foundation Trust

**Background:** The principle of informed consent taking place before embarking upon any research related procedures is a basic tenet of clinical research. There is an extensive evidence base to support this concept. The purpose of this audit was to determine compliance with this principle and to examine whether consent was annotated in an accurate and timely fashion on the electronic patient record.

**Method** All imaging performed specifically for clinical trial screening during September 2016 was reviewed and the following recorded:

- Relevant clinical trial.
- Date of imaging and time of arrival.
- There were 90 patients.

Using the electronic patient record (CWP), the date of consent was obtained for each patient and checked against the paper consent forms.

### Results

- Date of consent on CWP only present in 70% of patients.
- 16% of patients were imaged on the same day as consenting.
- Of these; 8 patients consented prior to imaging,
- 3 patients were imaged before consenting.
- 3 patients had no record of time of consent but are unlikely to have consented before imaging.

**Conclusion** Procedure to ensure consent to a clinical trial occurs prior to screening procedures is in need of improvement. Patient consent to clinical trial not recorded accurately or consistently which is essential to enable appropriate care by non-research staff.



We should not presume consent has been taken.

Patients should be asked if they have signed consent for the clinical trial before being imaged.

Implemented recommendations and result of re-audit in early 2017 will be presented.

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p225 **An audit of Naso-Gastric tubes (NGTs): Are we getting it right?**

Katherine Sharkey; Leah Fenning

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**Introduction:** Although easily preventable, incorrectly placed NGTs are a significant problem that results in thousands of deaths each year (NPSA, 2011). Are radiographers doing enough to prevent this?

**Method:** A retrospective audit was completed over six months evaluating NGT X-ray requests. Each request was evaluated to see if it stated whether an aspirate had been obtained. The corresponding images were also evaluated to look at the position of the NGT tip and the orientation of the detector as these factors are largely dependent upon technique i.e. windowing, exposure factors.

**Findings:** \* Only 43.3 % of requests stated that an aspirate could not be obtained and/ or was too high. \* 96.1% concluded that the tip of the NGT was in the stomach/past the diaphragm and 3.9% were in the lung. \* Only 60.5% of chest X-rays were performed using the detector portrait vs. 39.5% landscape.

**Conclusion and recommendations:** Many chest X-ray requests do not state whether an aspirate has been obtained. An aspirate level should be documented on the request and if not, the ward should be contacted to ensure that this has been attempted. All chest X-rays should be performed portrait as this increases the chance of including the tip, increasing the accuracy of diagnosis and preventing further repeats. Furthermore, annotating the image with the measurement of the NGT at the nose allows extra confirmation of the position and is also beneficial when comparing images. A further recommendation is that radiographers could remove NGTs in the department.

*National Patient Safety Agency (NPSA) National Health Service (NHS). (2011) Reducing the harm caused by misplaced nasogastric feeding tubes in adults, children and infants. <http://www.npsa.nhs.uk/corporate/news/reducing-the-harm-caused-by-misplaced-nasogastric-feeding-tubes-in-adults-children-and-infants/> (Accessed: 6th December 2016)*

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p226 **Development of image interpretation skills -- a follow-up study of Singapore diagnostic radiographers**

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<sup>1</sup>*Singapore General Hospital*; <sup>2</sup>*London South Bank University*

**Background:** The notion that a trained radiographer has the ability to interpret images is well demonstrated in literature and this has a positive impact on patient's management. Published evidence suggests that image interpretation performance decreases unless education is regularly consolidated. However, no study of this type has been carried out in local context. This study is a one year follow up of previous research in benchmarking radiographers' image interpretation skills in a local flagship tertiary hospital.

**Method** Unknown to the participants the study used the same randomised RadBench® image test bank, containing 30 blind double reported appendicular musculoskeletal images, with a 50% prevalence of abnormality. The same in-house RADS trained radiographers (n=7) who participated in the 2016 study were recruited again in addition to non-RADS radiographers (n=23) who had no additional image interpretation training.

**Results** The total population delivered a similar accuracy 2016v2017 however display a significant increase in sensitivity and decreased specificity. The RADS group significantly improved accuracy, mean increasing from 70 to 86% driven by a significant increase in specificity however a slight decrease in sensitivity. The non-RADS accuracy decreased slightly however demonstrated a significant increase in sensitivity and significant decrease in specificity. 57% of the RADS trained group delivered accuracy >90% and proved ready to participate in abnormality detection systems compared to 4% of the non-RADS group.

**Conclusion** This study demonstrated that continued development is required, not only in abnormality spotting but even more importantly the ability to differentiate normal variants. This will benefit the profession as a whole, as we seek to develop models of advanced radiographer practice in Singapore. RADS offers the basis of a preceptorship programme to scaffold new graduates beyond binary decision making and on towards competence in image interpretation with the ability to provide reliable preliminary clinical evaluation.

*Tay, Y. X. and Wright, C. (2016) Image interpretation performance of diagnostic radiographers. 6th June 2016, UKRC 2016*

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p227 **Benchmarking image interpretation performance: A multicentre undergraduate study**Tatsuhito Akimoto <sup>1</sup>; Chris Wright <sup>2</sup>; Pauline Reeves <sup>1</sup><sup>1</sup>Sheffield Hallam University; <sup>2</sup>London South Bank University

**Aim:** The SCoR (2013) policy expects radiographers to be able to make reliable decisions on the images they produce. Image interpretation has been integrated into all undergraduate degree programmes. Therefore this project aimed to benchmark and compare PCE competencies of undergraduate diagnostic radiography students from different universities.

**Methods:** All 21 Universities in England & Wales delivering diagnostic radiography education were invited to participate; 9 agreed. Final year students (n=87) at the point of graduation participated. The test contained 30 blind double reported MSK images with equal prevalence of normal and abnormal.

**Results:** Accuracy ranged from 56 to 87%; mean 73.4, SD 8.01. Sensitivity ranged from 47 to 100%; mean 79.6, SD 10.78. Specificity ranged from 20 to 100%; mean 67.1, SD 16.42. A weak correlation in accuracy by university was demonstrated (r<sup>2</sup>=0.266) highlighting the wide range of graduate performance. One-way ANOVA (with PostHoc Tukey) highlighted a statistically significant difference in Specificity (F (8, 78) = 3.40, p = 0.002) at University A (CI: -47.4/-4.5).

**Conclusion:** This project is the first to benchmark and compare PCE competencies of radiography students from multiple universities. Whilst image interpretation is now a routine part of undergraduate degree education, the capability of graduates varies and few appear to be able to meet a 'reliable' standard, highlighting the need for further training prior to participation in abnormality signalling systems. A follow-up study is recommended to increase reliability.

p228 **Image interpretation: Test the candidate not the test**Kirstie Wilby <sup>1</sup>; Chris Wright <sup>2</sup><sup>1</sup>Sheffield Hallam University; <sup>2</sup>London South Bank University

Image interpretation tests are core to radiography and radiology education to provide a measure of competence. Each training organisation designs its own tests. Does test bank design affect image interpretation results accuracy? Final year radiography students (n=23), took part in two RadBench<sup>®</sup> image interpretation tests to evaluate their accuracy scores. Each test was subjectively of equal difficulty and contained 30 images, with a fifty percent incidence of abnormality, chosen from a blind double reported database. Item response theory (IRT) was used to determine test difficulty, question difficulty and discrimination. Weaker students should be more likely to get the more difficult questions wrong.

Test A: range 77-97%, mean 90%. Test B: range 73-93%, mean 85.2%. Paired samples T-Test (t=3.746) was significant (0.001) at 95% significance level. Mean test difficulty via IRT was 0.90 v 0.86. Neither test was 100% discriminating; Test A had 2 non-discriminating questions, Test B had 6. Test bank design can be subjective and impact the result of image interpretation accuracy, confirmed by IRT. Assessment via multiple test banks is recommended within undergraduate modules in order to average out performance.

A discriminating National test, as utilised for the FRCR Part 1, could provide benchmark performance and equality in assessment for all radiography candidates.

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p229 **Conversations about death**

Lorraine Whyte

Beatson West of Scotland Cancer Centre

We are all going to die, yet we find it so difficult to talk about. When people we love die we never really know what to say or what to do. Would they like to be buried, cremated or sent into outer space? Can we afford to do any of these things? Do we know how much the average funeral costs? Do our patients know? How can we gently encourage them to have these conversations at home? Can we ever get over our feeling of discomfort when it comes to conversations about death? One way to tackle this issue was by hosting a Death Café, which is a straightforward and open discussion about death. It has no agenda and like life, a Death Cafe has a start, middle and an end (1). This was arranged for staff at the Beatson. Method and Materials: In order to host the Death café a facilitator, people who want to discuss death, a relaxing venue and some refreshments were required. Minimal direction was given and participants' comments were recorded and then transcribed.

Results: The subject of death may have been uncomfortable, but the provision of refreshments, a relatively healthy group of participants, and a safe, relaxing space appeared to generate vast quantities of data. We merely created a space to discuss death without expectations. Conclusion and Discussion: When people we love are terminally ill they may leave instructions, but many people don't, in which case we still don't know what to do. We don't know because we don't discuss it. Western society has tried to normalise death, and undertakers do their utmost to make corpses look alive. They embalm them and put make-up on them. We talked, we laughed, we had conversations about death and we will have them at home with our loved ones as a result of this.

1) [www.deathcafe.com](http://www.deathcafe.com)

### p230 MRI safety awareness among cardiology team members: A quality improvement project

Aisling Fagan; Firas Yassin

*Peterborough City Hospital*

**Background:** 50-75% of patients with a pacemaker will need an MRI scan at some stage in their life<sup>1</sup>. 2.4 million MRI scans took place in the UK in 2013, with a 12% yearly increase between 2003-2013<sup>2</sup>. MRI-conditional pacemakers have recently been developed in order to deal with this demand. A Portuguese study demonstrated that 15% of cardiologists were not aware that CMR does not involve ionising radiation, and only 39% correctly answered questions on MR contraindications<sup>3</sup>. Awareness of the contraindications is essential for patient selection. This will be increasingly important with the development of cardiac MRI.

**Methods:** This project was performed in a cardiology department with a catchment area of 500,000 people. The participants included consultants, junior doctors, and specialist nurses. A pre-education questionnaire and quiz was performed. A single-page infographic (image A) was created to explain the basics of MRI physics and the risks of MRI. This formed the basis of an interactive education session. The questionnaire was repeated after the session.

**Results:** Self-reported confidence with MRI scans increased from 4.3/10 to 8/10. 30% more medical devices were correctly categorised as MRI safe/unsafe after the session (54% to 84%). The average number of MRI side effects identified was 4, an increase from 2.2.

**Conclusion:** MRI safety awareness is essential for clinicians requesting scans. A simple infographic can be an accessible resource, both for reference and education. We plan to distribute the infographic throughout the cardiology wards and clinics. There is scope to create infographics on other specialist topics also.

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### p231 An analysis of bibliometric data exploring factors influencing research-capacity amongst UK radiographers

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**Background:** Radiographer-research is generally described as "emergent(1)" but registrants are expected/encouraged to contribute to the professional knowledge-base(6). Yet, reportedly radiographers trail behind analogous professions and/or participate in positions of lower-prominence(4).

Pre-existing studies argue, radiographers are "apathetic(7)". However, labelling everyone as ambivalent, "button-pushers(3)" seems a gross-simplification of a multifaceted issue; especially as current evidence tends to err towards the anecdotal, subjective or again, as compared to similar professions(2)(3)(5).

Considering this, the SCoR periodically issues a Research Strategy(6), recognising the necessity to embed/improve research-capacity across all levels of the profession.

**Aim:** To seek factors characteristically influencing research-capacity amongst UK-based, HCPC-registered radiographers.

**Method:** A purposeful sample of 5 years' bibliometric data from the journal 'Radiography.' A critical and thematic analysis followed based on current peer-reviewed journals and grey literature.

**Results:** Of 374 eligible articles and 143 research-active authors (published 2+ articles), collaborations prominently featured (74.9%) across 19 international partnerships. UK-registrants were principal investigator(s) in 49.20% of cases and registrants affiliated with the journal/publisher generally published more than non-affiliates. Preferred topic-areas included 'Education & Research' and 'Technical Practice.' Males published more than females (M=5.13/F=3.45). Average length of practice equalled 22.93 years. Outputs mostly originated from HEIs (62.07%), but contributions varied (mean=10.05/std.deviation=±17.09);

modestly correlating high-REF scoring HEIs ( $r=0.330$ ); however, regional workforce ratio(s) proved the strongest indicator ( $r=0.601$ ).

**Conclusion:** No "one-size-fits all" approach to research-capacity applies, as findings suggest multiple variables affect capacity/activeness. Many seem contingent on extrinsic factors e.g. regional locale, organisational type and culture/support. Personal/professional influences included career status, length of qualification and gender.

The SCoR may benefit from refinement; mindful of the dynamics influencing the heterogeneity of the current workforce.

Recommendations are that future strategies/studies may benefit from more specific targeting.

1. Chan, S. and Gunderman, R.B. (2005) 'Emerging strategic themes for guiding change in academic Radiology departments', *Radiology*, 236(2), pp. 430–440. doi: 10.1148/radiol.2362040587. 2. Golenko, X., Pager, S. and Holden, L. (2012) 'A thematic analysis of the role of the organisation in building allied health research capacity: A senior managers' perspective', *BMC Health Services Research*, 12(1), p. 276. doi: 10.1186/1472-6963-12-276. 3. Hafslund, B., Clare, J., Graverholt, B. and Wammen Nortvedt, M. (2008) 'Evidence-based radiography', 14(4), pp. 343–348. doi: <http://dx.doi.org/10.1016/j.radi.2008.01.003>. 4. Harris, R. and Paterson, A. (2016) 'Exploring the research domain of consultant practice: Perceptions and opinions of consultant radiographers', *Radiography*, 22(1), pp. 12–20. doi: 10.1016/j.radi.2015.03.002. 5. Segrott, J., McIvor, M. and Green, B. (2006) 'Challenges and strategies in developing nursing research capacity: A review of the literature', *International Journal of Nursing Studies*, 43(5), pp. 637–651. doi: 10.1016/j.ijnurstu.2005.07.011. 6. Society of Radiographers (2016) 2016-2021 Research Strategy. Available at: <http://www.sor.org/learning/document-library/research-strategy-2016-2021/2016-2021-research-strategy> (Accessed: 6 March 2016). 7. Yelder, J. and Davis, M. (2009) 'Where radiographers fear to tread: Resistance and apathy in radiography practice', *Radiography*, 15(4), pp. 345–350. doi: 10.1016/j.radi.2009.07.002.

### p232 A phantom study to assess the effect of lesion size and overlying tissue thickness on manual compression strain sonoelastography measurements

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**Background:** Sonoelastography can differentiate tissues based on differences in stiffness. Manual compression strain sonoelastography measures relative tissue stiffness by calculating differences in tissue deformation following an external force - stiffer tissues deform less than soft tissues. Although this technique is qualitative, strain elastography remains widespread. We tested whether the qualitative stiffness measurements were affected by the size of the lesion and the depth of overlying tissues using an ultrasound phantom.

**Methods:** A phantom comprising two layers of gelatine and agar was constructed to simulate different tissues [1]. Multiple stiffness measurements were taken by two raters by applying intermittent compression to the surface of the phantom with a GE Logiq E9 ultrasound scanner using a 9MHz linear array transducer. Multiple relative stiffness measurements were made by each rater at different points. The phantom was then inverted and measurements repeated.

One-way ANOVA with post tests was used to compare the effect of tissue type, depth and lesion thickness on relative stiffness.

**Results:** Mean relative stiffness within agar (2.4+/-0.67) was significantly lower than gelatine (4.2+/-1.2;  $p<0.001$ ). Relative stiffness was generally significantly higher within deep segments than corresponding superficial segments ( $p<0.01$ ), but there was no difference between thin and thick lesions. There was a high degree of inter-rater reliability (intraclass correlation coefficient 0.90, 95% CI 0.80-0.95,  $p<0.001$ ).

**Conclusion:** Manual compression elastography can differentiate tissues of different stiffness with high inter-rater reliability, but is affected by thickness of overlying tissues which may have implications in scanning obese/lean subjects.

1. Blechinger J, Madsen E, Frank G. Tissue-mimicking gelatin-agar gels for use in magnetic resonance imaging phantoms. *Medical physics*. 1988;15(4):629.

### p233 Research involving ionising radiation - governance and local arrangements to get the green light

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Approval for healthcare research is obtained through IRAS [1], with this portal accessing the relevant approving bodies. The application is reviewed by the HRA [2], incorporating ethics review. It's submitted to the competent authority, if relevant, and the NHS Trust sites involved, to obtain Organisation Confirmation of Capacity and Capability (previously known as NHS Permission). What are the key points on radiation to get right in your application? What are the legislative and policy requirements relating to research involving ionising radiation? Who is responsible to check what? Although many over-arching elements of radiation review are carried out by the HRA, there are still some radiation issues that need to be assessed, arranged and confirmed at a local level. This poster highlights good practice to create a smooth set-up of the radiation component of the research and continue with safe systems of research imaging management in place.

1. Integrated Research Application System <https://www.myresearchproject.org.uk/> 2. <http://www.hra.nhs.uk/about-the-hra/our-plans-and-projects/assessment-approval/>

p234 **Facilitating research amongst radiographers through information literacy workshops**

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Lancashire Teaching Hospitals NHS Foundation Trust

**Background:** The Society and College of Radiographers aims to '...Expand UK radiography research capacity through development of skilled and motivated research-active members of the profession'. Despite having a strong research profile within our trust, allied health professionals are under-represented across the organisation's research activity. Library Services and Research and Innovation, working together, secured funding to run a research project enabling radiographers to develop knowledge and skills across research and information literacy.

**Method:** Data was collected retrospectively on research activity and library usage in the 12 months prior to the study. Participants were recruited and completed the Information Literacy Self Efficacy Scale -- ILSES (Kurbanoglu et al). Participants were then asked to select workshop topics from a list of 16 provided by the research team, and the top 6 were developed and delivered over a 7-month period (ongoing). Participants will then re- complete the ILSES, and an analysis of results will be carried out in conjunction with the data collected on workshop attendance.

**Results:** Results are currently unavailable as the final workshop will be delivered on the 10th of February 2017. Results will be available for presentation at the conference. Evaluative material around the sessions will also be collated.

**Conclusion:** As well as presenting the research and results, this presentation will explain the design and delivery of workshops tailored to radiographers to increase research capability and capacity. It will also discuss the barriers and facilitators to this important work in NHS environments.

1. Society and College of Radiographers (2015) 2016-2021 society and college of radiographers research strategy 2. Kurbanoglu, S. S., Akkoyunlu B. & Umay A. (2006). Developing the information literacy self-efficacy scale. *Journal of Documentation*, 62 (6), pp.730-743.

p235 **An investigation into pain flare in patients undergoing radiotherapy for bone metastases**

Rebecca Goldfinch <sup>1</sup>; Nick White <sup>2</sup>

<sup>1</sup>Royal Wolverhampton NHS Trust; <sup>2</sup>Birmingham City University

**Aims:** External Beam Radiotherapy (EBRT) is a recognised intervention for symptomatic pain relief from bone metastases. Pain flare is a reported EBRT toxicity, reported in 16-41% of steroid-naïve patients. This study aimed to determine incidence and duration of pain flare amongst patients within one Oncology Centre, comparing findings with previous studies.

**Methods:** Patients receiving EBRT for bone metastases were recruited to a prospective cohort study. Patients recorded baseline pain scores and completed a daily pain and analgesia diary during EBRT and for 14 days thereafter. Pain flare was defined as a two-point pain scale increase or 25% increase in analgesia intake, with a return to baseline.

**Results:** Of the thirty-two participants, 21 (66%) completed the diary. Nine (43%) patients experienced pain flare, the median duration being 3.2days. Of the evaluable patients, 57% (12) were male and 43% (9) were female. The median age was 72.5 years, (range 40-83). The common primary sites of disease were Breast (29%), Prostate (33%) and Multiple Myeloma (9%) with other sites making up the remaining 29%. The most frequent EBRT site was the spine (62%), with other sites of treatment including pelvis (24%) and extremities (14%). EBRT regimes were restricted to 20Gy in 5 treatments, received by 33% (7) of patients and 8Gy in 1 treatment, received by 67% (14). Of these two regimes, pain flare was reported by 29% and 50% respectively.

**Conclusion:** Pain flare is a common toxicity of EBRT for bone metastases. Taking the small sample size into consideration, the incidence and duration of pain flare in patients within this single-centre study are comparable with those found in international studies.

1. Chow, E., Ling, A., Davis, L., Panzarella, T. and Danjoux, C. (2005). Pain flare following external beam radiotherapy and meaningful change in pain scores in the treatment of bone metastases. *Radiotherapy and Oncology* 75, pp. 64-69 2. Hird, A., Chow, E., Zhang, L., Wong, R., Jackson, W., Sinclair, E., Danjoux, C., Tsao, M., Barnes, E. and Loblaw, A. (2009a). Determining the incidence of pain flare following palliative radiotherapy for symptomatic bone metastases: results from three Canadian cancer centres. *International Journal of Oncology, Biology, Physics* 75(1), pp. 193-197. 3. Loblaw, D.A., Jackson, W., Kirkbride, P., Panzarella, T., Smith, K., Aslanidis, J. and Warde, P. (2007). Pain flare in patients with bone metastases after palliative radiotherapy – a nested randomized control trial. *Support Care Cancer* 15, pp. 451-455 4. Gomez-Iturriaga, A., Cacicedo, J., Navarro, A., Morillo, V., Willisch, P., Carvajal, C., Hortelano, E., Lopez-Guerra, J. L., Illescas, A., Casquero, F., Del Hoyo, O., Ciervide, R., Irasari, A., Pijoan, J. I. and Bilbao, P. (2015). Incidence of pain flare following palliative radiotherapy for symptomatic bone metastases: multicentre prospective observational study. *BMC Palliative Care* 14;48.

p236 **Dementia and the law in frontline radiography: The practical experiences of junior clinicians in the UK**

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**Background:** Informed consent remains the cornerstone of ethical and lawful clinical practice. However, for consent to be valid, the patient must be given sufficient information, give their consent freely and they must be competent. The Mental Capacity Act (MCA) provides guidance on how practitioners might proceed with procedures where a patient might lack competence, for example with patients who have Dementia, though it is recognised that many health practitioners do not apply the MCA in practice. Given the increase in the numbers of individuals suffering from Dementia, and the problems related to gaining consent within this group, this study aims to determine how radiographers apply the guidance of the MCA to their practice when caring for patients who have Dementia.

**Method:** In line with the orthodox methods of Interpretative Phenomenological Analysis (IPA), six junior radiographers (mean experience = 3.5 years) were interviewed. All interviews were semi-structured, conducted and recorded in a place of the participant's convenience, and transcribed verbatim. The mean interview duration was 40 minutes.

**Results:** Though an on-going study, currently three superordinate themes emerge from the data; Presumed lack of capacity; lack of explanation; and compliance versus consent. Preliminary analysis reveals that the MCA is not routinely applied in general radiographic practice and that this practice is therefore at times unethical, and perhaps even unlawful.

**Conclusions:** Though limited in scale these preliminary findings suggest a need for better education, training on how to apply the MCA during radiographic procedures and a basis for further investigation.

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### p237 **Functional connectivity in Alzheimer's disease and vascular dementia**

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**Purpose:** Alzheimer's disease (AD) and vascular dementia (VD) make up a large proportion of patients that attend memory clinics. Differentiating between AD and VD is challenging; there are mixed kinds of dementia and disease progression and treatment differs. The aim of our study is to see if resting state fMRI (RS-fMRI) can differentiate between AD and VD and can potentially serve as a biomarker. To the best of our knowledge this is the first study that compares resting state functional connectivity in AD and VD in routine clinical setting.

**Method:** This is part of a prospective, observational study. Confirmed AD and VD patients (no mixed type) undergo a neuropsychological battery of tests and a RS-fMRI as part of routine clinical care. Individual measures of the default mode network are used to evaluate differences in functional connectivity between the two groups, which are then correlated to scores of global cognition and episodic memory performance.

**Results:** Preliminary results show some characteristic differences in connectivity between AD and VD. The two groups differed specifically regarding the default mode network.

**Conclusion:** Data is still limited as there are only few patients that present with a clear diagnosis of AD or VD and not mixed type, however early results are supportive that there are characteristic differences in connectivity between AD and VD. Further research is likely to improve ability to appropriately classify new subjects and ultimately allow RS-fMRI as a biomarker.

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### p238 **Intraorbital foreign body detection and localisation by radiographers**

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**Background:** Since the report by Kelly et al (1986), there has been controversy regarding the potential harm from metallic foreign bodies in the orbital anatomy and the necessity of screening patients prior to magnetic resonance imaging (MRI) procedures. Current SoR and BAMAR, IR(ME)R 2000 and MHRA guidelines recommend investigation to exclude an intra orbital foreign body (IOFB) prior to imaging.

**Purpose:** The aim of this poster is to enable conference participants to review a preliminary multi-reader multi-case observer performance study to establish if a short course of learning would increase radiographers' performance in IOFB detection and localisation on pre-MRI orbital computed radiographs. Fifteen radiographers from five hospitals participated, each participant reviewed a pre- and post-training image bank (30 cases) to identify the presence or absence of IOFBs.

The intended learning outcomes for readers by the end of this poster should be able to:

1. Understand the clinical risk to patients in MRI from IOFBs.
2. Describe the impact of a short course of training to educate radiographers in IOFB image interpretation.
3. Begin to evaluate the level of radiographer competence in IOFB localisation and detection.

4. To start to reflect afterwards of the various role extension areas available for radiographers to support service delivery and patient safety.

1. Kelly W M, Paglen P G, Pearson J A, San Diego A G, Soloman M A. (1986). Ferromagnetism of intraocular foreign body causes unilateral blindness after MR study. *American Journal of Neuroradiology* ; Mar-Apr;7(2):243-5. 2. Society and College of Radiographers and the British Association of Magnetic Resonance Radiographers (2013). *Safety in Magnetic Resonance Imaging*. London: The Society and College of Radiographers. 3. Great Britain. *Ionising Radiation (Medical Exposure) Regulations 2000 (IRMER) (2012). Schedule 1*. London: Department of Health. 4. *Medicines and Healthcare products Regulatory Agency (MHRA) (2007). Device Bulletin Safety Guidelines for Magnetic Resonance Imaging Equipment in Clinical Use DB2007 (03)* . 5. Bailey W, Robinson L. (2007). *Screening for intra-orbital metallic foreign bodies prior to MRI: Review of the evidence. Radiography. Feb 28;13(1):72-80.*

#### p239 Reporting radiographer's performance in CT head reporting in a clinical environment

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**Background:** The number of head injured patients attending district general hospitals has been estimated by the United Kingdom (UK) Acquired Brain Injury Forum during 2011-2012 to be around 353,059 UK patients. (around 558 per 100,000 of the population each year). This represents a 33.5% increase in the last ten years (10-20,000 per year) of admissions for severe traumatic brain injuries.

**Purpose:** The aim of this poster is to enable conference participants to review a preliminary small scale study of multiple reader (reporting radiographers (RR) and consultant radiologists (CR) and multiple case (30 cases) assessing the diagnostic performance in clinical practice of computer tomography (CT) head interpretation. Eight observers from six southern National Health Service (NHS) trusts were invited to participate.

The intended learning outcomes for readers by the end of this poster should be able to:

1. Understand the clinical demand to train radiographers as part of a skills mix workforce to report CT head examinations.
2. Describe the process of assessing radiographer's ability using a range of conditions, reporting environments, and variety of statistical methods
3. Begin to evaluate the level of reporting radiographer competence in CT head reporting. To start to reflect afterwards of the various advanced practice roles available for radiographers to support service delivery

Summary: A0 portrait style, with subheadings (background, method, results, tables, conclusion), tables broken down to individual results to reflect variance of readers performance, and mean overall results for the cohort using alternative free response receiver operating characteristic (AFROC) methodology was applied.

1. *United Kingdom Acquired Brain Injury Forum. Life after Brain Injury: A Way Forward- Evidence Base; 2012. Available at: [http://www.ukabif.org.uk/uploads/UKABIF/Life\\_After\\_Brain\\_Injury.pdf](http://www.ukabif.org.uk/uploads/UKABIF/Life_After_Brain_Injury.pdf)*

#### p240 Reporting radiographer's performance in CT head reporting in an academic and clinical environment

Paul Lockwood

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**Background:** Demand for Computed Tomography (CT) examinations in English National Health Service (NHS) Trusts between March 2015 and February 2016 including the waiting list of planned tests, and unscheduled tests. The CT demand between April 2013 to March 2014 at 5.2 million. Demonstrating a 10% increase from the previous year, a 43.1% rise over five years, and 160% growth over a decade.

**Purpose :** The aim of this poster is to enable conference participants to understand the factors that are involved in testing the abilities of radiographers undertaking a postgraduate certificate in reporting CT heads. The intended learning outcomes for readers by the end of this poster should be able to:

1. Understand the evidence and clinical requirement to train radiographer's as part of a skills mix workforce to report CT head examinations.
  2. Describe the process of assessing radiographer's ability using a range of conditions, reporting environments, and variety of statistical methods
  3. Begin to gain an appreciation of the type of common errors in CT head reporting
  4. Begin to evaluate that there is a requirement for a range of disease prevalence in assessment that will reflect clinical practice
  5. To start to reflect afterwards of the various advanced practice roles available for radiographers to support service delivery
- Summary A0 portrait style, with subheadings (background, method, results, tables, conclusion), tables broken down to individual results to show progression of ability, and mean overall results for the cohort using standard statistical models.

1. *NHS England. February (2016) Statistical Report: Waiting times and activity for diagnostic tests and procedures. January 2006 to February 2016. April 2. NHS England (2016). Monthly Diagnostics Commissioner February 2016. April 3. Great Britain (2014) NHS Imaging and Radiodiagnostic activity 2013/2014. Leeds: NHS England Analytical Services (Operations) 4. Royal College of Radiologists (2014) Clinical Radiology UK Workforce Census Report 2012*

p241 **Patient dementia and clinical interaction in frontline diagnostic radiography: Mapping the practical experiences of junior clinicians in the UK**

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**Background:** A rapidly ageing UK population and a corollary increase in the numbers of individuals suffering from dementia syndromes is causing a range of structural problems for healthcare services, and practice-oriented problems for frontline clinical staff (Kasteridis et al., 2016). A number of studies in the broader field of allied healthcare has recently emerged pertaining to the nuanced problems that will increasingly emerge as an output of working with patients with dementia, and the equally nuanced solutions that a practitioner might (or might not) find, especially around interpersonal communication (Het, Verkaik, Mistiaen, van Meijel, & Francke, 2015; Nazarko, 2015; Webb & Denning, 2016). Within this corpus, it is reported that junior practitioners of all orders are in a particular position of disadvantage (Baillie, Cox, & Merritt, 2012; Tullo, Young, & Lee, 2016), working with an ever-increasing number of patients with dementia, but without having yet accrued the levels of direct professional experience conventionally thought to be key to developing "expertise" in professional performance (Yielder, 2006). No research has to date, however, directly addressed this broad matter within the radiological professions.

**Method:** Extended semi-structured interviews with six junior diagnostic radiographers in the UK (mean experience = 3.5 years) were analysed using Interpretative Phenomenological Analysis (IPA).

**Results:** Three superordinate themes were identified: 1. Confidence, experience and education. 2. Practical and technological constraints on effective practice. 3. Complexities of carer input. Participants' lack of confidence around their knowledge of dementia, and regular treatment of the condition as a 'generic' thing in practice, sometimes damaged clinical interaction, particularly when the participant was feeling institutional time pressures. Education for new professionals was seen as lacking in both quantity and context-relevance, with implications for professional confidence and legal ethical practice. Carers/family were viewed as both a positive and negative force within an examination, and technological advances in radiography were taken to be clinically advantageous, but also sometimes actively detrimental to the effective interpersonal care of patients with dementia.

**Conclusions:** Although necessarily limited in scale and classical

1. Baillie, L., Cox, J., & Merritt, J. (2012). *Caring for older people with dementia in hospital part one: Challenges*. *Nursing Older People*, 24, 33-37. doi:10.7748/nop2012.10.24.8.33.c9312
2. Het, H. I., Verkaik, R., Mistiaen, P., van Meijel, B., & Francke, A. L. (2015). *The effectiveness of interventions in supporting self-management of informal caregivers of people with dementia; a systematic meta review*. *BMC Geriatrics*, 15, 147-147. doi:10.1186/s12877-015-0145-6
3. Kasteridis, P., Mason, A., Goddard, M., Jacobs, R., Santos, R., Rodriguez-Sanchez, B., & McGonigal, G. (2016). *Risk of care home placement following acute hospital admission: Effects of a pay-for-performance scheme for dementia*. *Plos One*, 11, e0155850-e0155850. doi:10.1371/journal.pone.0155850
4. Nazarko, L. (2015). *Hearing the voice of the person with dementia*. *British Journal of Healthcare Assistants*, 9, 222. doi:10.12968/bjha.2015.9.5.222
5. Tullo, E. S., Young, T. J., & Lee, R. P. (2016). *Medical students' views about person-centred communication in dementia care*. *Dementia*, doi:10.1177/1471301216651981
6. Webb, R., & Denning, K. H. (2016). *In whose best interests? A case study of a family affected by dementia*. *British Journal of Community Nursing*, 21, 300-304. doi:10.12968/bjcn.2016.21.6.300
7. Yielder, J. (2006). *Towards an integrated model of expertise in medical imaging*. *Journal of Diagnostic Radiography and Imaging*, 6, 1-11. doi:10.1017/S1460472806000010

p242 **Team roles in MRI**

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**Background:** Team working and collaboration in healthcare is essential for ensuring patient safety, as well as supporting delivery of efficient and effective services. It is of no lesser value in the MRI setting when staff are often working in small, isolated teams, sometimes just in pairs on a remote mobile unit.

**Method:** As part of the review of the in-house MRI training programme, classroom based contact time was doubled to allow inclusion of sessions around team roles, service efficiency and patient experience. This was in order to provide more breadth in content around ancillary topics that support delivery of MRI services, team working being central to many aspects. During the introduction session on team roles, participants are asked to complete a Belbin Self-Perception Inventory, which is a behavioural test used to measure preference for the nine identified team roles. Team roles are identified as 'a tendency to behave, contribute and interrelate with others in a particular way'. The nine roles being; resource investigator, teamworker, coordinator, plant, monitor evaluator, specialist, shaper, implementer and completer finisher.

**Results:** Of the nine roles assessed, the top three preferences seen amongst many of the MRI Radiographers were; Completer Finishers, Specialists and Team Workers.

**Conclusion:** These were interesting and help support some of the key attributes needed amongst this professional group -- detailed knowledge and understanding of anatomy and physical principles, ability to interact and work with colleagues to deliver a service, and ensure an imaging examination is complete to a diagnostic standard from start to

p243 **Lymphoma: The great masquerader**

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This pictorial review will describe the pearls and pitfalls which radiologist encounters when interpreting these cases.

Demonstrate the varied locations and appearances of classic extranodal sites of lymphoma

**Background:** Lymphoma, a malignancy arising from lymphocytes or lymphoblasts, accounts for approximately 4 % of all cancers. Typically thought of as a disease of the lymph nodes however approximately 40% present as extranodal disease.

Primary extranodal lymphoma is a great mimicker often appearing like other neoplastic, infections or inflammatory conditions. This leads to a wide and varied radiological features, with lymphoma often being an under considered differential.

Through the increased availability of multimodality imaging including CT, MRI and PET/CT, the diagnosis of extranodal lymphoma has been greatly advanced. This pictorial review will describe the typical and atypical imaging characteristics, seen in cases of common sites of extranodal lymphoma, including CNS, pulmonary, testicular and osseous lymphoma. We will offer a potential diagnostic algorithm to aid diagnosis.

**Conclusion:** Lymphoma is a relatively common but often under considered diagnosis due to the wide spectrum of multimodality imaging characteristics. Although a tissue diagnosis will be required, it is important to consider extranodal lymphoma in the presence of certain radiological features to ensure a quick and timely diagnosis.

*1. Chua, S. (2009) 'Imaging features of primary extranodal lymphomas', Clinical radiology., 64(6), pp. 574–88. 2. Guermazi, A. (2003) 'Extranodal lymphoplasmacytoid lymphoma: Spectrum of disease', European radiology., 13(4), pp. 771–9.*

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