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J3.5 Impact of immediate AI enabled patient triage to chest CT on the lung cancer pathway (LungIMPACT) - a study protocol

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Background: Chest X-rays (CXRs) are a high-volume test, performed for many reasons including the investigation of lung cancer. The National Optimal Lung Cancer Pathway (NOLCP) emphasises the importance of rapid diagnostics(1). Best case implementation of NOLCP has all imaging investigations performed as a single diagnostic episode, with immediate CXR reporting and same day CT chest where appropriate. Previous work found shorter time to diagnosis of lung cancer with immediate reporting but a low lung cancer prevalence(2). qXR is a class II CE approved medical device that detects and localises the presence of lung nodules on a CXR. qXR is intended to support consultant radiologists and reporting radiographers for clinical decision making. The aim of the study is to determine if artificial intelligence triage of CXRs can shorten the time to diagnosis of lung cancer.

Methods: The study will be a multi-centre, prospective, randomised controlled trial, with block randomisation of radiology sessions to those with and without AI triage. Seven centres will participate with 150,000 CXRs. Primary outcomes are difference in time (in days) to lung cancer diagnosis and agreement between reporting practitioner (radiologist or reporting radiographer) and qXR with independent expert arbitration between discordant decisions. Secondary outcomes include proportion of urgent 2WW lung cancer referrals with a non-cancer diagnosis and a health economic evaluation. The study is powered ($p=0.05$, power=0.90) to detect a small difference (1 day) in median time to diagnosis of lung cancer and a difference in reporter/qXR agreement of 0.01 with a prevalence of diagnosis of 0.006.

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Proffered papers: Research

K7.1 A five-year impact evaluation of an established medical radiation sciences Twitter journal club

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Introduction: Twitter journal clubs are a relatively new adaptation of an established continuing professional development (CPD) activity within healthcare (Stoneman and Hiremath, 2020). The medical radiation science (MRS) journal club (MRJC) was founded in March 2015 by a group of academics, researchers, and clinicians as an international forum for the discussion of peer-reviewed papers. To investigate the reach and impact of MRJC, a five-year analysis was conducted.

Methods: Tweetchat data (number of participants, tweets and impressions) for the first five years of MRJC were extracted and chat topics organized into themes. Fifth birthday MRJC chat tweets were analysed and examples of academic and professional outputs were collated.

Results: A total of 59 chats have been held over five years with a mean of 41 participants and 483,000 impressions per hour-long synchronous chat. Ten different tweetchat themes were identified, with student engagement/preceptorship the most popular. Eight posters or oral presentations at conferences, one social media

workshop and four papers have been produced. Qualitative analysis revealed five core themes relating to the perceived benefits of participation in MRJC; (1) CPD and research impact, (2) professional growth and influencing practice, (3) interdisciplinary learning and inclusion, (4) networking and social support and (5) globalisation.

Conclusion: MRJC is a unique, multi-professional, global community with consistent engagement. It is beneficial for both CPD, research engagement, dissemination and socialisation within the MRS community.

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K7.2 Bridging the theory-practice gap - a multi-case study from the perspective of clinical teachers in diagnostic radiography

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Background: Clinical teachers have evolved to support the integration of clinical and academic practice across organisational boundaries. This paper explores the lived experience of clinical teachers in diagnostic radiography supporting an undergraduate diagnostic radiography programme at a UK Higher Education Institution.

Method: A multi-case study approach was used to evaluate the impact of the clinical teacher role on student experience and education satisfaction. Coupled with a self-reflective narrative of the clinical teachers' experience, we describe the influence of personal experience and individual professional interests on role development.

Results: Students reported greater confidence in clinical skills development and personal support from clinical teachers. They perceived the clinical teachers as 'peers' and thus more accessible compared to university academics. Students valued the role of clinical teachers as advocates within the clinical setting and appreciated the constructive feedback provided. Clinical department leads acknowledged the importance of a consistent and accessible point of contact with whom concerns, issues and student praise could be conveyed within an informal but safe environment. The diversity of personal and professional backgrounds and interests within the clinical teacher team ensures an inclusive approach to learning that allows students to explore differing perceptions and break down educational stereotypes.

Conclusions: Clinical teacher roles transcend the theory-practice gap and have supported a paradigm shift in the delivery of undergraduate radiography education. Accessibility, learning applicability and student advocacy are the fundamental attributes on which the role will continue to develop.

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K7.3 Educator perspectives of simulation in sonographer education: a constructivist grounded theory study

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Background: Simulation encompasses a wide variety of teaching methods, and it is increasingly used in healthcare education. The development of high-fidelity ultrasound simulators has increased the potential of this educational approach, but there is limited evidence on how simulation can effectively support sonographer education.

Method: Ethical approval was obtained from Sheffield Hallam University. A constructivist grounded theory approach using qualitative interviews explored the views and experiences of twelve ultrasound educators using simulation for sonographer education. Individual interviews were conducted using online video conferencing. Interviews were recorded, transcribed and analysed using an inductive, constant comparative approach.

Results: Simulation is regularly used in sonographer education, mainly using high fidelity task-trainers for self-directed student learning. The use of simulation learning is currently limited by availability of space and equipment, costs, time, and limited educator training in simulation as a pedagogical tool. Sonography educators showed enthusiasm for simulation learning, but simulation was not always embedded throughout the curriculum, and there is potential to use a wider variety of simulated learning more consistently in sonographer education

Conclusion: There is huge potential to include a wide variety of well-designed simulations in sonographer education to enhance student learning, and to relieve some pressures on clinical trainers in busy and understaffed ultrasound departments. To facilitate this, time for design and planning, educator training and capital investment are required to allow simulation to be used to its' full potential for sonographer education.

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K7.4 Findings of two parallel projects looking at experiences of radiotherapy for gynaecological cancers

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Background: Radical radiotherapy for gynaecological cancers is extremely challenging for patients. Experienced long-term effects of treatment are inadequately researched and discussed.

Method: People receiving radiotherapy for gynaecological cancers were recruited from one cancer centre in northwest England. Participants were invited to submit narratives (handwritten, voice recorded, typed) from day one of radiotherapy to 6 months following completion. Patients over 18 years undergoing radiotherapy for any gynaecological cancer were recruited between September 2020 and August 2021. 77 patients were approached, 35 consented and 16 submitted at least one narrative. A parallel project recruited participants online, gathering narratives from any participant who had treatment for gynaecological cancer in the UK. In this project, 17 participants submitted 31 narratives representing 1 month to 25 years post treatment. Narratives were analysed collectively by the research team including social scientists; therapeutic radiographers, including on-treatment review radiographer; and a cancer research nurse. The team read narratives independently and identified areas of interest for discussion from which themes were generated.

Results: Participants discussed accepting and enduring effects of radiotherapy treatment, 'getting on with it' and 'it'll get worse before it gets better,' despite the disruption effects caused. Information leaflets offered practical ways of delivering key information but were criticised for offering simplified messages.

Conclusion: Discussions of effects of radiotherapy for gynaecological cancers served to normalise wide ranging impacts, leaving gaps in care. Consent procedures and information provided through information leaflets minimised the severity of potential effects of radiotherapy at the expense of personalised care.

K7.5 Retroperitoneal lymphoceles in cases of multi-fibroid uteri observed on MRI

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Background: To establish the rate of retroperitoneal lymphoceles in women with multi-fibroid uterus.

Method: Prospective observational study of incidental extra-uterine findings on MRI scans performed for multi-fibroid mapping and/or consideration of fibroid embolization. Data collected at our tertiary centre between September 2020-2021. Clinical information and imaging reviewed independently by two FRCR-qualified radiologists and findings recorded.

Results: 61 MRI studies performed. Age range 27-71 years (mean 46 years). 22 (36%) patients had extra-uterine incidental findings. 6 patients (27% of incidental findings and 10% of all patients imaged) were shown to have a retroperitoneal lymphocele. 4 of the 6 cases were bilateral and 2 ipsilateral, both left sided. 4 of the 6 had anteverted uteri with the other 2 cases demonstrating an axial lie. Patients with a pedunculated subserosal fibroid were more likely to have a unilateral retroperitoneal lymphocele. 5 of the 6 demonstrated concurrent venous compression. No coexisting hydronephrosis. 11 of the 22 incidental findings (50%) were within the retroperitoneum and 12 of the 22 (55%) had incidental findings secondary to mass effect.

Conclusion: Our rate of incidental retroperitoneal lymphoceles on fibroid MRI (10% of all patients scanned) is greater than the rate reflected in the current literature. 83% of these patients also demonstrate coexisting venous compression. These findings reflect significant mass effect within the pelvis and should not be overlooked. This study highlights the need for retroperitoneal review when reporting these cases.

K7.6 See, Radiographers Can Do Research Too!

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Background: Clinical research is the study of health and illness, enabling innovation and improvement in clinical practice to improve healthcare and experiences for patients and their families. Clinical academics are clinically active professionals that simultaneously research ways to improve current patient care [1]. New clinical-academic career pathways as recognised by the Society of Radiographers in 2021 [2] seek to formalise the roles/experience expected for these professionals at differing career levels and provide guidance to managers to implement these roles within clinical departments. Research by radiographers as principal investigators provides multiple benefits to patient care and the radiography profession. Heightening awareness of clinical-academic roles and the wider benefits will ensure that more radiographers engage with research and influence positive changes in clinical practice.

Purpose: This poster aims to share the authors' personal experiences of their clinical-academic career to date, highlighting the widespread advantages for clinical, academic, and professional practice and career development.

Summary: There are numerous advantages and challenges to clinical academic careers which we detail within the poster. Advantages of this career pathway include development of innovative practice, the ability to use, imbed and implement research into practice in a scientific manner, and academic, clinical and leadership skills. Despite the advantages, there remain some challenges to clinical academic careers including, funding, time, role security and imposter syndrome. Evidence shared through the authors' personal experiences seek to encourage more radiographers and radiology service managers to consider and support clinical academic careers.

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