should be given to the right patient at the right time". If patients have had an appropriate anatomical examination effort should be made to establish if these are appropriate and fusible prior to authorisation of an additional CT scan. Staff training in the field of CT could aid with authorisation and image processing.

RADIATION PROTECTION AND QUALITY ASSURANCE

P106 New threshold detection references for DR systems

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Aim: The aim of this research is to present new TCDD curves for Konica, Fuji, Samsung, Philips, and Trixell DR systems. The TCDD data can also be used to provide an image quality factor (IQF) using the threshold detection index from the reference curves.

Detail diameter (mm)	Samsung	GE	Konica	Philips	Fuji	Trixell
11.1	32.2	32.2	29.2	23.4	29.5	27.5
8	41.5	39.5	31.8	32.5	36.4	29.1
5.6	54.9	48.9	39.9	37.9	49.4	39.7
4	48.7	49.1	43.1	41.9	53.3	43.8
2.8	61.6	63.8	49.6	52.6	68.2	57.7
2	77.4	74.4	53.3	58.3	84.0	63.5
1.4	50.6	48.2	46.3	53.1	57.0	51.1
1	59.4	52.6	46.9	61.5	69.3	61.9
0.7	64.4	53.2	51.6	67.1	69.2	65.0
0.5	27.9	29.3	26.4	34.7	32.0	32.1
0.35	29.1	33.4	25.9	30.0	31.1	27.2
0.25	28.0	33.5	21.6	30.2	33.1	21.1
Reference detector dose (µGy)	3.8	3.3	4.1	4.2	4.2	4.1
No. of detectors	10	6	17	8	17	12

Method: Dose to the detector was measured using a calibrated RTI Piranha dose meter. The grid was removed and the TO20 or TCD9 test object was placed on the detector and the detector was exposed to a known dose of ~ 4 µGy at 75 kV with 1.5 mm Copper filtration positioned as close to the X-ray tube as possible. The test objects were scored on a radiology reporting workstation according to the original test object manual, using a fixed viewing distance and with low ambient light conditions. The results were used to calculate reference data for each system.
Results: Table below shows the TCDD data for different DR systems. The data can be used to plot the best fit curves.
Conclusion: In DR systems, as expected, the same detector dose resulted in an improvement in TCDD performance comparing to CR systems. Although caution should always be taken when comparing TCDD data due to potential set up differences, scoring criteria and experience of the scorers, these data will prove useful for accepting new equipment, to give an indication of the expected image quality for new DR system.

P107 Utilising integrated dose monitoring software in radiology and its advantages for business management

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Background: The optimisation and regular monitoring of patient radiation doses is a requirement for radiology departments within the UK as stated by IR(ME)R 2017. This may prove challenging, especially within large Trusts, as significant amounts of data are needed to be sorted and evaluated for many different protocols. Dose Monitoring Software can be used to automatically collect relevant data from devices within departments. However it is up to the department to utilise this data in a meaningful way.
Purpose: This poster will outline the processes and tools which has enabled the efficient and regular monitoring of dose data within Nottingham University Hospitals (NUH) NHS Trust. Steps such as gathering raw data, standardisation, benchmarking, creation of dashboards and progress trackers are explored, as well as the business impacts these tools can make available to radiology departments. The role of multidisciplinary working between radiographers, clinical scientists and medical physicists is also highlighted.
Summary: Dose monitoring software provide a great amount of information to radiology departments. However if this information is not harnessed properly, the benefits of this information is lost. This poster highlights the processes which led to an efficient way of evaluating and monitoring doses within NUH, ultimately changing practice within the department in order to adhere to the optimisation regulations of IR(ME)R 2017.

P108 Audit of eye lens irradiation during CT Head scanning

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Background: The lens of the eye is highly sensitive to irradiation. Exposure to too much radiation will result in the formation of cataracts. Consequently in the Ionising Radiation Regulations 17, dose limit for exposure to the lens of the eye has reduced from 150mSv to 20mSv per year. To help achieve this, the Royal Collage of Radiologist state that the lens of the eye should be excluded from the scan field 100% of the time.
Method: Retrospective study looking at a sample of 100 routine CT Head scans performed within the trust found that only 3% of scans avoided the lens of the eye. The study was then repeated 6 weeks later after a poster and email campaign to increase radiographer awareness of issue and techniques to avoid lens irradiation. An emphasis on patient positioning ('chin

down')/gantry tilt (where available) to scan from supraorbitomeatal baseline 50 (suitable) consecutive patients were gathered from each site. The data collection was performed in real time by the radiographers to help maintain a focus on the issues.
Results: 68% of the scans avoided both lenses. Scanners with offered a gantry tilt performed better.
Conclusion: Campaign to raise awareness and importance of continued Lens avoidance in CT scanning was a success. Potential bias introduced into the study with radiographers collecting data. A further retrospective image review in 6 months' time is required to ensure good practice is maintained.

P109 **Errors in radiology requests sent by A & E doctors (wrong site, side or procedure requested) – A retrospective survey**

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Background: Junior doctors are prone to make wrong radiological requests due to off hours and long busy varying shift work patterns which lead to poor concentration, chronic fatigue and bad communication between health carers. Wrong radiology requests can put patients at risk of getting unnecessary radiological studies resulting in exposure to radiations. Clinicians are required to provide accurate information when requesting radiological investigations, as required legally by UK government legislation.
Methods: We queried the database for radiology events from Aug 1, 2019, through Nov 30, 2019. On various occasions' radiographers found wrong radiology requests sent by A&E team. 227 events were identified.
Results: Out of 227 incident, 86 (37.9%) were reported in August, 39 (17%) in September, 50 (22%) in October and 52 (23%) in November. 149 (65%) requests comprised of wrong X ray side, 4 (1.8%) were found to have wrong X ray site and 74 (32.6%) to have wrong procedure being requested.
Conclusion: To our best knowledge, no individual did get the wrong radiations and it was caught by the radiographer and the wrong requests were cancelled. To ensure patient's safety, the referrer (clinician) has a responsibility to provide accurate and necessary information to the radiological practitioner. A two-person verification of patient identifiers is recommended. Educating juniors is important, so they have the knowledge of implications of a radiological investigation, medical errors and the adverse affects of unnecessary radiation exposure.

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P110 **Out with the old, in with the new? Are radiographers still applying radiopaque markers – A clinical audit**

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Aim: The aim of this project was to audit the application of anatomical side markers in an accident and emergency department in a local NHS Trust. The 'good practice' audit standard was 100% compliance.
Background: Anatomical side markers (ASM's) are annotations used to mark the "Left" and "Right" side of a medical image (Barry et al, 2016). Since the rise in digital imaging, there has been a substantial decrease in pre-exposure markers (Attard et al,2017), as well as an increase in incorrect or missing ASM's placed on images (Platt & Strudwick, 2009).
Method: 720 examinations were retrospectively audited from a 6-month time frame. 2 focus groups were conducted with band 5 & 7 radiographers. Content and thematic analysis were performed on transcripts to identify key themes.
Results: A chi square test demonstrated statistical significance between the type of marker applied and the time the image was acquired (p= 0.02). 647 examinations displayed a digital marker (90%), leaving 73 with a radiopaque marker (10%). No images were identified without a marker. 3 key themes from the thematic analysis were: training and the environment, factors affecting ASM application and reasons why radiographers use ASM's.
Conclusion: Digital markers are being used more than radiopaque markers and good practice is not being followed. Radiographers believe that availability and cost are the main barriers to applying a radiopaque marker.

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

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

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

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

WORKFORCE DEVELOPMENT

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

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