



Some pitfalls of MRCP include respiratory artefact and gas and debris mimicking pathology[3]. MRI uses a unique tool called DWI. DWI provides information about the microstructural characteristics of tissues by detecting the motion of water molecules in the body[4], this can be seen in the image below. DWI can provide valuable information which can aid and evaluate detection of pathologies and carcinomas[5]. GG&C does not routinely include DWI in a MRCP protocol; a literature review was carried out to assess if DWI could help in the detection of pancreaticobiliary cancers.

[1]THE SCOTTISH GOVERNMENT, 2019. Scottish referral guidelines for suspected cancer. Scotland: Community Health and Social Care Directorate. [viewed 15.10.2020]. [2]NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE, 2018. Pancreatic cancer in adults: Diagnosis and management. England: National Guideline Alliance. [viewed 14.10.2020]. [3]GRIFFIN, N., CHARLES-EDWARDS, G. & GRANT, L.A., 2012. Magnetic resonance cholangiopancreatography: the ABC of MRCP. *Insights Imaging*. 3(1), pp.11-21. [4]BITTENCOURT, L., MATOS, C. & COUTINHO, A.C., 2011. Diffusion-Weighted Magnetic Resonance Imaging in the Upper Abdomen: Technical Issues and Clinical Application. *Magnetic Resonance Imaging Clinics of North America*. 19(1), pp.111-131. [5]YAO, X., KUANG, T., WU, L., FENG, H., LIU, H., CHENG, W., RAO, S., WANG, H. & ZENG, M., 2014. Optimization of MR diffusion-weighted imaging acquisitions for pancreatic cancer at 3.0T. *Magnetic Resonance Imaging*. 32 (7), pp.875-879. [6]MAAROUF, R.A., ZIDAN, D.Z. & EL-SHINNAWY, M.A., 2013. The added value of diffusion-weighted MR imaging to MR cholangiopancreatography in differentiating malignant from benign extra hepatic biliary strictures. *The Egyptian Journal of Radiology and Nuclear Medicine* [online]. 44(4), pp.719-726. [7]KANG, K.M., LEE, J.M., SHIN, C.S., BAEK, J.H., KIM, S.H., YOON, J.H., HAN, J.K. & CHOI, B.I., 2013. Added Value of Diffusion-Weighted Imaging to MR Cholangiopancreatography With Unenhanced MR Imaging for Predicting Malignancy or Invasiveness of Intraductal Papillary Mucinous Neoplasm of the Pancreas. *Journal of Magnetic Resonance Imaging*. 38, pp.555-563. [8]PARK, H.J., JANG, K.M., SONG, S.H., KIM, Y.K., CHA, M.J., CHOI, S.Y. & MIN, K., 2017. Value of unenhanced MRI with diffusion-weighted imaging for detection of primary small (<20mm) solid pancreatic tumours and prediction of pancreatic ductal adenocarcinoma. *Clinical Radiology*. 72(12), pp.1076-1084.



DOSE / RADIATION PROTECTION / IMAGING TECHNOLOGIES POSTER PRESENTATIONS

P088 Erect versus supine lumbar spine radiographs: experiences in the clinical environment regarding quality, dose and pathology

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Background: Radiography of the lumbar spine is traditionally performed supine,¹ although there is inconsistency in acquisition techniques within the literature. Previous work has focused on the dose reduction opportunities of PA imaging^{1,2} but this study sought to incorporate this with the functional outcomes of weightbearing to implement a standardised PA and lateral erect technique.

Method: A retrospective audit and prospective acquisition phase compared patient demographics, image quality and pathological outcomes for supine and erect radiographs of non-trauma lumbar spine. Effective doses were calculated using PCXMC.

Results: There were demographic differences between the 144 retrospective and 50 prospective examinations (mean age: 65 vs 57yrs; $p < 0.05$. mean BMI 29.1 vs 32.3; $p < 0.05$) although gender profiles were similar (female 70% vs 73%; $p = 0.728$). Effective dose was on average 30.6% lower for the PA examination ($p < 0.05$), although a mean 14% increase was evident in the lateral dose ($p = 0.492$). Image quality and intervertebral disc space visualisation was improved in the erect position and it also provided evidence of a leg length discrepancy in 14% of patients.

Conclusion: This small-scale evaluation has demonstrated that the erect position can facilitate dose reduction, image quality improvements and pathology not appreciated on supine examinations. Further evaluation and optimisation is required prior to adoption into standard practice.

1. Davey, E. & England, A., 2015. AP versus PA positioning in lumbar spine computed radiography: Image quality and individual organ doses. *Radiography* 21, pp. 188-196.

2. Alukic, E. & Mekis, N., 2019. Lumbar spine radiography: lower organ dose with the use of the PA projection. *Radiation Protection Dosimetry*, pp. 1-6.

P089 Tip apex diameter in dynamic hip screw fixation. Audit to assess practice at an acute general hospital

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Dynamic Hip Screw(DHS) is a procedure used in orthopedics for the fixation of extra-capsular neck of femur fractures. A complication of this procedure is the screw cut out from the femoral head, the prognosis of which is observed through the tip apex distance which is the distance from the tip of screw to apex of the femoral head. A distance of less than 25mm shows a good prognostic value. The purpose of this audit was to see if the principle Tip apex distance were effectively put into practice at a local DGH. A retrospective study was performed using the local NOF audit data for the hospital. 60 Cases over a period of 7 months from January 2018 to July 2018 were assessed. The TAD of each case was measured individually by using intraoperative imaging available on PACS. The measurements were calibrated to minimise projection and magnification errors. Each case was followed up using medical records to look for any postoperative complications. Grade of performing surgeon and intraoperative radiation time was also recorded. The



results of the audit showed 10% of fixation had a TAD greater than 25mm irrespective of the grade of performing surgeon. The audit emphasises the principal of TAD in improving the outcome for patient and reducing the chance of a cut off.

1. Trigkilidas, D., Murphy, G. and Wallace, D., 2010. Tip to Apex Distance in DHS Fixation. An audit of practice at a district general hospital. The Internet Journal of Orthopedic Surgery, 16(1). 2. Baumgaertner MR, Curtin SL, Lindskog DM, Keggi JM (1995) The value of the tip-apex distance in predicting failure of fixation of peritrochanteric fractures of the hip. J Bone Joint Surg Am 77: 1058-1064.

P090 Minimising radiation dose in computed tomography of kidneys, ureters and bladder (CT-KUB)

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Computed tomography of the kidneys, ureters and bladder (CT KUB) is the gold-standard imaging investigation to assess patients with acute renal colic.(1) It has a sensitivity of 97% and specificity of 95% for the diagnosis of urinary stones, which is a common presentation amongst younger patients (2). The main disadvantage, is that the scan imparts ionising radiation to such patients. One way to reduce the radiation dose is by optimizing the field of view (FoV) of the scan as recommended by Royal College of Radiologists and included in the British Association of Urological Surgeons guidelines (1,2) Extending further than these limits unnecessarily irradiates the patient with no further diagnostic yield. Standards used :The Royal College of Radiologists recommends the FOV for a CTKUB should be from T12 to the the symphysis pubis(1,2). Radiation dose (DLP) for each scan should be less than or equal to 460 mGy cm as per the National Diagnostic Reference Levels (NDRLs)(4) Targets:100% of the CT KUB scans should be commenced within two vertebral levels above the superior border of the kidney and 100% of the scans should have DLP with in National Diagnostic Reference Levels (NDRLs) .

1-Tsiotras, A., Smith, R.D., Pearce, I., O'Flynn, K. and Wiseman, O., 2018. British Association of Urological Surgeons standards for management of acute ureteric colic. Journal of Clinical Urology, 11(1), pp.58-61. 2-Maguire, J. and Gray, K., 2015. Computed tomography (CT) kidneys, ureters and bladder (KUB)—how low can you go?. Clinical Radiology, 70, p.S12. 3-Royal Coll. of Radiologists, London (United Kingdom);, 1998. Making the best use of a department of clinical radiology Guidelines for doctors. 4-National Diagnostic Reference Levels (NDRLs) from 19 August 2019 [Internet]. GOV.UK. 2020 [cited 19 November 2020]. Available from: <https://www.gov.uk/government/publications/diagnostic-radiology-national-diagnostic-reference-levels-ndrls/ndrl> 5-Rodger, F., Roditi, G. and Aboumarzouk, O.M., 2018. Diagnostic accuracy of low and ultra-low dose CT for identification of urinary tract stones: a systematic review. Urologia Internationalis, 100(4), pp.375-385. 6-Lumbreras, B., Donat, L. and Hernández-Aguado, I., 2010. Incidental findings in imaging diagnostic tests: a systematic review. The British journal of radiology, 83(988), pp.276-289. 7-Xiong, T., McEvoy, K., Morton, D.G., Halligan, S. and Lilford, R.J., 2006. Resources and costs associated with incidental extracolonic findings from CT colonography: a study in a symptomatic population. The British journal of radiology, 79(948), pp.948-961.

P091 A comparison of two peak skin dose calculators embedded within patient dose management systems: Implications for clinical management

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Introduction: Two commercially available patient dose monitoring systems were compared to evaluate their reported patient "Peak Skin Dose" for interventional cardiac procedures.

Method: 20 patients with the highest peak absorbed dose to skin on System1 were obtained; the recorded values were converted to a Reference Point Air Kerma (RPAK) value and used for comparison with System2, which measured peak air kerma to skin. Coordinates were obtained for each patient to find a primary and secondary angular position for the peak skin dose, and the positions produced by each system compared.

Results: There is a mean systematic difference of over 0.5Gy between the two software packages when comparing the calculated maximum skin air kerma PSD from System1 and the Worst Case RPAK from System2. It was found that 40% of the primary and 10% of the secondary angle position calculated in System1 lie within System2's position range.

Conclusion: We have shown that there is a mean systematic difference between these two systems. This difference is enough, for high peak skin absorbed dose patients, to change the management of patients so local services must understand their models to properly implement patient management. Neither system is incorrect, but these differences show that a deeper understanding of the analysis limitations is required to properly inform post-procedural high-skin dose follow-up procedures.

1. Vano E, Sanchez R, Fernandez JM, Gallego JJ et. al. (2009) Patient Dose Reference Levels for Interventional Radiology: A National Approach. Cardiovasc Intervent Radiol. 32, pp. 3219-24

2. Balter S, Hopewell JW, Miller DL, Wagner LK et. al. (2010) Fluoroscopically guided interventional procedures: a review of radiation effects on patients' skin and hair. Radiology 254(2), pp. 326-41

3. Greffier et al (2019) Experimental evaluation of a radiation dose management system-integrated 3D skin dose map by comparison with XR-RV3 Gafchromic® films, Phys Med, 66;77-87

4. Bryan Lemieux, Leslie Anaskevich, Jie Zhang (2019) Validation of DoseWise Portal for Peak Skin Dose Estimation.



P092 Challenges of optimisation / rollout of a dose management tool across multi-modality, multi-vendor equipment inventory

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Background: In recent years' optimisation within diagnostic imaging has become a primary focus of all practitioner's / service providers. Optimisation affects many aspects of imaging selection of equipment, commissioning of equipment, development of protocols, definition of patient pathways and selection of the patient protocol at the time of exposure. To assist with dose management and optimisation there are a number of tools available. DoseWatch (GE Healthcare) is an enterprise wide solution that enables collection and analysis of patient radiation dose data and analysis across multi-facility, multi-modality, and multi-vendor imaging environments.

Purpose of poster:

Learning Outcomes:

- Explain the challenges of optimisation in an organisation with multiple imaging locations
- Demonstrate the use of a dose management system across multi-vendor equipment
- Highlight the challenges of implementing a system across multiple multi-vendor systems.

Application to Practice:

- Demonstrate a realistic and achievable approach to radiation dose optimisation and monitoring in an organisation with multi-vendor imaging equipment in multiple locations.
- Highlight positives and negatives of this approach

Summary of content: The poster will present an overview of the rationale for the adopting a dose management system that we implemented across a number of CT and PET CT systems, a critical review of the limitations of the technology for our organisation including different IT solutions / approaches that were required, a review of the successes, challenges and lessons learnt.

P093 Identifying predictors of patient radiation dose during uterine artery embolization

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Introduction: Radiation dose reduction during uterine artery embolisation (UAE) is critical for this reproductive-age patient population to minimise the risks of radiation-induced effects.¹⁻³ The aim of this study was to identify the predictors of radiation dose which can be controlled and optimised for patients during UAE.

Method: A total of 150 patients between June 2018 and August 2019 were included in this study. Demographic and clinical information such as age, body mass index (BMI), total number of fibroids, total fibroid volume and dosimetric measurements on Dose Area Product (DAP), Air Kerma (AK) and fluoroscopy time were recorded. Total digital subtraction angiography (DSA), total conventional roadmap (CRM), total last-image hold (LIH) and total fluoroscopy were calculated from the dose report. Multiple linear regression analysis was used to identify the independent predictor variables of total dose (DAP) using a regression model.

Results: 120 out of the 150 patients had symptomatic fibroids and the reported median total fibroid volume was 176 cm³ and median total number of fibroids was two. Total DSA, total CRM and total LIH were identified as the determinants of dose for UAE ($p < 0.05$) and together accounted for 95.2% of the variance.

Conclusions: This study identified the key imaging predictors of dose for UAE. Total DSA, total CRM and total LIH were shown to have a greater impact on the outcome DAP compared to other demographic or dosimetric measurements. Optimisation of these predictors during future UAE procedures can facilitate radiation dose reduction to the pelvis and reproductive organs.

1. Nocum DJ, Robinson J, Liang E, Thompson N, Reed W. (2019) The factors contributing to the total radiation exposure of patients during uterine artery embolisation. *J Med Radiat Sci.* 66(3), 200-211.

2. Scheurig-Muenkler C, Powerski MJ, Mueller J-C, Kroencke TJ. (2015) Radiation exposure during uterine artery embolization: effective measures to minimize dose to the patient. *Cardiovasc Intervent Radiol.* 38(3), 613-622.

3. Thomaere E, Dehairs M, Laenen A, Mehshima A, Timmerman D, Cornelissen S, et al. (2018) A new imaging technology to reduce the radiation dose during uterine fibroid embolization. *Acta Radiol.* 59(12), 1446-1450.

P094 Increasing awareness of DRLs in routine clinical practice

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Background: When using automated systems for transferring dose information directly from X-ray equipment into a database, radiographers and physicists may become less actively engaged with examination doses. For many years, dose information has been manually recorded for each exam by radiographers while physicists used subsets of these data to calculate the appropriate quantities for establishing local DRLs. In this way, reviewing dose was an integral



part of performing X-ray examinations but the process was time consuming and transcription errors did occur. We introduced an alternative that involves all radiographers in the process of using and reviewing DRLs without adding significant work.

Purpose: To demonstrate an approach for periodic awareness-raising activities which highlight local DRLs and provide data for rapidly assessing whether examinations are consistently exceeding the established values. **Summary:** The poster will provide an overview of departmental dose awareness weeks, including the tools used to collect data and the application of the binomial test to determine whether DRLs are being consistently exceeded.

P095 Audit on optimising CT KUB imaging in investigation of renal colic

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Non-contrast CT KUB is the initial imaging modality for suspected renal colic. Given it is a commonly performed procedure in an emergency setting, radiation dose exposure considerations are essential. Our audit looked to evaluate CT KUB techniques with the aim of minimising unnecessary scan length and ionising radiation exposure. There were two standards used; firstly the upper pole of the highest kidney was set as the superior scan limit and secondly, excess scan length above the upper pole of the highest kidney should be <10% of total length of scan. In June 2020, 50 CT KUB scans of adult patients were reviewed retrospectively, specifically assessing the percentage of slices above the upper pole of the highest kidney (overscan slices) relative to total scan length. Of these, 28% of CT KUB studies showed an excess scan length >10%, with a mean percentage overscan length of 16.8%. Studies within the superior scan limit and below correlated with decreasing overscan. Our audit demonstrated that excessive overscanning was secondary to inconsistent CT KUB techniques. Having a standardised protocol with a superior scan limit appropriately set for CT KUB investigations would allow for patient dose to be minimised without compromising on diagnostic adequacy.

1. British Association of Urological Surgeons (BAUS); Guidelines for acute management of first presentation of renal and ureteric lithiasis, 2012.
2. Lukaszewicz, AMS., Bhargavan-Chatfield, M., Coombs, L., Ghita, M., Weinreb, J., Gunabushanam, G., Moore, CL. Radiation dose index of renal colic protocol CT studies in the United States: A report from the American College of Radiology National Radiology Data Registry. *Radiology*, 2014; 271(2):445-451.
3. Katz SI, Saluja A, Brink JA, Forman HP. Radiation dose associated with unenhanced CT for suspected renal colic: impact of repetitive studies. *AJR* 2006; 186(4):1120-4.
4. Stewart A, Joyce A: Modern management of renal colic. *Trends Urol Mens Health* 2008; 13: 14–17.
5. Rodger F, Roditi G, Aboumarzouk O, M: Diagnostic Accuracy of Low and Ultra-Low Dose CT for Identification of Urinary Tract Stones: A Systematic Review. *Urol Int* 2018;100:375-385. doi: 10.1159/000488062

P096 Radiation Safety Awareness Amongst Foundation Doctors

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Background: Clinical practice has seen a logarithmic rise in the use of radiation-based imaging modalities. Foundation doctors are responsible for requesting a large proportion of imaging and should do so in accordance with the Ionising Radiation (Medical Exposure) Regulations 2017 (IR(ME)R) (DoH, 2017). However, prior studies have demonstrated that awareness of radiation legislation and radiation exposure is poor amongst this cohort of doctors (Khan et al., 2019). Our study aimed to assess radiation safety awareness amongst Foundation Doctors and the impact of an interactive teaching intervention.

Methods: A 10-question multiple choice questionnaire was distributed to Foundation Doctors. Questionnaires were provided in both paper and electronic formats to maximise uptake. Questions assessed knowledge of 2 core domains: radiation legislation and radiation exposure of common radiological investigations. Participants were asked to complete the questionnaire before and after the interactive teaching intervention. Responses were collected and quantified for data analysis.

Results: 44 responses to the pre-teaching questionnaire and 11 responses to the post-teaching questionnaire were obtained. The teaching intervention was associated with a global improvement in scores across the 2 core domains. Foundation Doctors awareness of radiation legislation improved from 52% to 90% after the teaching intervention. Similarly, the proportion of correct responses in the question domain of radiation exposure improved from 57% to 67%.

Conclusion: Foundation Doctors have a limited baseline understanding of radiation legislation and radiation exposure associated with common radiological investigations. Radiation safety training should be incorporated into the Foundation Programme curriculum to ensure IR(ME)R compliant practitioners and improved patient care.

1. Department of Health, 2017. The Ionising Radiation (Medical Exposure) Regulations 2017.
2. Khan, M.O., Khan, M.S., Janjua, O., Ali, A., Hussain, S., 2019. Knowledge of radiation legislation and radiation exposure in common radiological investigations among final year medical students, foundation doctors, specialist radiology registrars and radiographers at a UK university teaching hospital. *BJR Open* 1, 20180014.



P097 An audit to assess and to improve knowledge about radiation risk amongst junior doctors at a small UK district general hospital

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Northern Lincolnshire and Goole NHS Foundation Trust

Methods/Background: According to the Royal College of Radiologists (RCR), in order to perform Ionising Radiation (Medical Exposure) Regulations (IR(ME)R) practitioner functions, all personnel need to be trained appropriately. Requesting staff cannot perform assessment of relative risks without maintaining knowledge of radiation risks. Participants were asked to answer questions pertaining to knowledge regarding radiation risks before and after a teaching session delivered online.

Data was collected via questionnaire containing 2 question sets; 5 questions pertaining to knowledge of effective radiation dose of common investigations (CXR, AXR, etc) and 7 questions regarding their corresponding estimated increased risk of malignancy. Data collected in both surveys were compared against each other and also with pre-defined audit standards.

Audit Standards:

- 1) Doctors should achieve 80% knowledge of effective radiation dose of common investigations.
- 2) Doctors should achieve 80% knowledge of estimated increased risk of malignancy of common investigations.

Results:

- 1) Response rate = 52%
- 2) 60% of respondents were FY1s, 40% were SHOs.
- 3) There is significant improvement in the percentage of questions answered correctly in both question sets after teaching (P value <0.05 for both question sets)
- 4) Both pre-defined standards were not achieved (72% and 70% respectively).

Conclusion:

- 1) There is a knowledge gap in radiation risk amongst junior doctors compared to audit standards.
- 2) Teaching sessions are beneficial in closing this knowledge gap.
- 3) Further intervention may be necessary to improve radiation awareness in junior doctors.

Limitations:

- 1) Small sample size.
- 2) Response rate was lower than expected.

1. Rcr.ac.uk. 2020. Awareness Of Radiation Risks By Referrers And Practitioners Justifying Radiological Examinations | The Royal College Of Radiologists. [online] Available at: <<https://www.rcr.ac.uk/audit/awareness-radiation-risks-referrers-and-practitioners-justifying-radiological-examinations>>

P099 Establishing whether placing lead-rubber inferolateral to the light beam diaphragm reduces dose to radiosensitive organs during an abdominal x-ray: a phantom-based study

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University of Exeter

Background: Dose reduction is important in radiography. Use of contact lead shielding is historically controversial, and recent guidance suggests ceasing its use.(1) This increases need to discover if other novel dose-reduction methods have clinical potential. Our study draws from shielding applications seen in fluoroscopy and a study in which dose reduction to radiosensitive organs was noted with a similar intervention.(2) Our study aims to address limitations noted within this prior study, whilst applying the intervention to a different anatomical area.

Method: Thermo-luminescent dosimetry chips were calibrated and then placed in organ-representative locations within a CIRS Atom phantom. A standardised abdominal x-ray was obtained, both with and without a lead-rubber sheet fixed inferolateral to the light beam diaphragm at the cranial end. Doses at organ locations were recorded.

Results: Statistically significant (P<0.05) mean dose reduction was noted in organs located anatomically superior to the lead-rubber intervention. Organ-specific dose reduction was variable, with up to 53% observed. No significant dose reduction was noted in organs anatomically inferior to the intervention. This held true across a range of clinically relevant exposure factors.

Conclusion: The dose reduction to radiosensitive organs anatomically superior to the lead-rubber substantiates the previous findings with more robust methodology, suggesting that this easily applied method of dose reduction may be worth further exploration. Despite doses involved being small, the engrained radiographic principle of 'as low as reasonably practicable' exists and this is certainly a practicable design alteration. A more robust attachment method is required before clinical use could be considered.

1. British Institute of Radiology (2020) Guidance on using shielding on patients for diagnostic radiology applications [online] London: BIR. Available at: [Accessed 02 May 2020]. 2. Hayre C, Bungay H, Jeffery C, Cobb C, Atutornu J. (2018) Can placing lead-rubber inferolateral to the light beam diaphragm limit ionising radiation to multiple radiosensitive organs? Radiography, 24(1): 15-21. Available at: [Accessed 02 May 2020].



COVID-19 POSTER PRESENTATIONS

P101 Audit on the quality of chest X-rays before and during the COVID-19 pandemic

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Background: This is a retrospective analysis of a randomised set of chest X-rays. Both cycles were carried as a result from noticing, in our trust, that chest x-rays were mainly antero-posterior projections.

Method: A random sample of 200 chest X-ray, from January 2019 to December 2019, were taken from PACS. These were subdivided by requesting department into 50 from A&E, Inpatient, Outpatient and primary care respectively. The type of projection, whether posterior-anterior (PA) or anterior-posterior (AP), was reviewed. In the second cycle the same method was used and a further random 200 chest x-rays were sampled- 50 from each aforementioned subset- in 2020 during the COVID-19 pandemic. Standards were as follows: 75% of inpatient and A&E chest X-ray requests should be done as PA projections. 95% of outpatient and GP chest X-ray requests should be done as PA.

Results: In the first cycle, 40% of A&E and inpatient requests were PA projections. Whereas outpatient and GP requests were 95% and 100% PA. The re-audit showed a 10% increase, to 50%, in the number of PA films in A&E. However, both inpatient and outpatient saw a fall below the standard to 14% and 88% respectively.

Conclusion: Despite taking measures to improve the quality of chest X-rays there was, overall, a decrease in the number of PA films. This was put down to, upon discussion with the radiographers, the effects of COVID-19, namely time constraints due to increased disinfection requirements and generally more unwell patients who cannot stand for PA projections.

1. ACR Practice guideline for the Performance of Paediatric and Adult Chest Radiography. ACR 2014
2. European Guidelines on Quality Criteria for Diagnostic Radiographic Images. European Commission 1996.

P102 Airway, Breathing, Covid-19? Adapting resuscitation training in the Radiology Department to ensure patient and staff safety in the Covid-19 Pandemic

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Background: Cardiopulmonary resuscitation (CPR) is an integral part of modern healthcare provision. First responders can have a significant impact on patient outcomes. National resuscitation training courses are not currently tailored to radiology departments, thus in 2019 Radiology Specific Resus Training (RSR) was launched at Imperial Healthcare Trust to aid radiology staff in responding to deteriorating patients and perform effective resuscitation. RSR is a bespoke course blending elements of adult and paediatric resuscitation training focusing on scenarios more likely to occur in the radiology department. Following excellent feedback and unprecedented demand for further dates RSR was deemed a success. However, Covid-19 quickly put a stop to face to face teaching and presented a number of other challenges, the RSR course has needed to evolve.

Purpose: As the Covid-19 pandemic has significantly altered guidance on resuscitation training, we reviewed the RSR course to meet these unique challenges. By adjusting resuscitation techniques to ensure staff safety, as patients in the radiology department often have unknown Covid status, and using alternative teaching mediums to allow distance learning. To understand the challenges of creating a new e-RSR course with blended e-learning & small group practical session to meet the requirements of the Covid-19 pandemic.

Summary of content: Background - why resuscitation skills are vital to our radiology staff - unique challenges of RSR in the Covid-19 pandemic Course content and delivery methods - RSR scenarios and conversion into distance e-learning course with condensed practical component Skill confidence assessment methods - course feedback, adaptations and future plans.

P104 Initial experiences of a new regional ESWL service during a global pandemic

Sam Crompton; Jodie Pryn

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A GIRFT report in 2018 (Harrison, 2018) and NICE guidelines (NICE, 2019) recommended regional, fixed site lithotripsy units which would service a region and allow access to both elective and emergency ESWL for urinary tract calculus <20mm. In the South West peninsula, trusts' were serviced by a mobile lithotripter which did not allow access to