despite the great attention given to this tumour[4]. However, the use of imaging techniques, such as MRI functional and DTI, have improved the treatment response by providing information used to plan a more precise radiotherapy treatment and/or a more complete resection[1].
Purpose: An update of basic knowledge of GBM is necessary since recent developments in the use of diagnostic techniques have improved diagnosis and treatment.
Content: This poster will focus on presenting the multiple roles of MRI techniques in the diagnosis, treatment planning and response assessment for GBM.

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P044 Is Meckel's cave routinely evaluated by northern deanery radiology trainees?

Amar Chotai
Royal Victoria Infirmary

Background: Meckel's cave is a paired CSF-filled pouch in the posteromedial aspect of the middle cranial fossa. This study was undertaken after a subtle right Meckel's cave abnormality was missed on an MRI Brain by a trainee and consultant, with a history of prostate cancer and right facial numbness provided. This was discovered after a CT Brain examination, performed 3 months later, demonstrated a large, enhancing right cavernous sinus mass.
Aims: 1) Whether or not trainees are routinely evaluating Meckel's cave when reporting an MRI Brain examination; 2) whether or not trainees have knowledge about the rare possibility of intracranial metastases from prostate cancer; and 3) whether or not trainees have knowledge regarding the anatomy and function of the trigeminal nerve.
Materials and methods: Trainees (ST2 - ST5) were shown the axial T2 sequence of the brain in 4 stages (two minutes/stage): no history available (Stage 1); history of prostate cancer provided (Stage 2); and further history of right-sided facial numbness provided (Stage 3). If the correct diagnosis was not made, the trainee was asked to correctly identify Meckel's cave (Stage 4).
Results: 37 trainees participated in the study, with 10 correctly identifying the abnormality: none at Stage 1, one at Stage 2 and nine at Stage 3. Of the 27 trainees unable to identify the abnormality, nine subsequently identified Meckel's cave correctly (Stage 4). Conclusion: In conclusion, this study highlights that trainees are not routinely evaluating Meckel's cave and that the vast majority were unsure about.

BREAST

P045 The National Breast Imaging Academy: Progress update

Caroline Parkin; Mary Wilson; Megan Bydder; Soujanya Gadde; Lyndsay Kinnear; Paula Stavrinos
NBIA

The national breast imaging workforce is in crisis. Demands on the service continue to grow at a time when insufficient staffing levels are compounded by staff originally trained at the inception of the National Breast Screening Programme retiring en mass. Units are consequently struggling, merging and closing. In response to the problem, the National Breast Imaging Academy (NBIA) team developed a business case detailing a national plan to future proof the workforce. It covered strategies including (1) apprenticeships, (2) proposals for all tiers of radiographic staff (3) the development of a credential for Breast Clinicians and the recruitment of a national cohort of trainees to increase Breast Clinician numbers nationally, (4) the introduction of a national network of breast radiology fellowships, (5) the development of an "On Line Academy" providing technology enriched learning resources and (6) a new purpose built building in Manchester to act at the support centre and host site for multiple aspects of the proposed national plan. In February 2018 Health Educational England agreed to partially fund revenue aspects of the bid. The NBIA has since been collaborating with stakeholders to maintain momentum and make progress where possible. In this poster we describe our progress to date including how training pathways and resources have been developed, details of 2019 recruitment drives and a progress update in relation to capital funding. This initiative illustrates what can be achieved when a workforce in crisis comes together to find a way forward through collaboration and innovation.

P046 Invasive lobular carcinoma in a supernumerary breast: A case report

Harriet Conley; Sarah Doyle; Stephanie Jenkins
Plymouth Hospitals NHS Trust

Background: Breast cancer is the commonest cancer in the UK. Whilst the incidence of supernumerary breast tissue is reported as 0.2-6% of the population[1], a diagnosis of primary breast cancer in a supernumerary breast is rare, particularly in a site remote from the axilla. Breast cancer prognosis is strongly linked to early detection and treatment, and imaging has a crucial role in the appropriate pre-treatment work-up of this rare but important clinical entity. This is illustrated by our case of a 75-

year-old female with an invasive lobular cancer originating in an inframammary supernumerary breast, with ipsilateral axillary nodal involvement.
Purpose: Learning outcomes include imaging considerations based on the unusual anatomical site, as well as the histological subtype of the tumour. Staging of breast cancer includes assessment of the relevant locoregional nodes, which is affected by the anatomical site, and influenced our staging plan with a CT of the chest/abdomen/pelvis performed. Lobular carcinoma has an increased prevalence of multifocality and multicentricity. In view of this and the unusual presentation breast MRI was also used, in addition to standard breast imaging modalities. A multimodality approach to evaluate supernumerary tumours with involvement of the MDT is recommended.
Summary: An overview of the clinical presentation, radiological imaging (images from assessment and staging included), surgical and oncological management is presented. Relevant learning points are detailed in each section, with an emphasis on the role of imaging and the breast MDT.
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P047 **Use your brain (window); breast cancer on CT**
Nicholas Ridley; Karen Litton; Michelle Taylor
Great Western Hospital
Background: CT is used commonly to stage Breast Cancer. Breast cancers are not infrequently seen incidentally on CT scans. They may represent the cause for metastatic disease or represent an opportunity for early diagnosis. Breast cancers often enhance but this is lost in the breast density on standard CT windows. We noticed that putting the scans onto brain windows (HU w80 l 40) made the cancers stand out and even helped with multifocality.
Purpose: This poster will highlight the value of using brain windows as a simple aid to increase the conspicuity of breast cancer. This is of value both on the staging scans and serendipitous pickup of cancers.
Summary: We illustrate with multiple examples the value of CT brain windows to see the extent of disease correlated with mammographic and MR findings.
1. Liesbeth J et al (2011) Is contrast enhancement required to visualize a known breast tumor in a pre-operative CT scan? Radiotherapy and Oncology. Vol 100, issue 2, 271-275

P048 **Breast MRI - it is not just all breast**
Tamara Suaris; Linda Metaxa; Philip Dilks; Shefali Dani
St Bartholomew's Hospital NHS Trust
Bckground: Currently, annual breast MRI screening is offered to a selected group of high risk women in accordance with NHS Breast Screening Programme (NHSBSP) protocols. Standard post contrast breast MRI sequences are performed in dedicated breast coils, as per technical standards of NHSBSP.
Purpose: We are a high volume breast MRI screening centre. We would like to highlight incidental non breast pathologies that we have come across whilst reporting breast MRI, some of which were clinically relevant to the patient. These include lung nodules, AV malformation/other chest wall lesions, thoracic aortic aneurysms, bone metastases, liver lesions and pleural effusions.
Summary: We would like to present an educational pictorial review of incidental non breast pathologies identified during the reporting of surveillance breast MRI in high risk screening patients along with the clinical significance of these lesions, helping the breast radiologist to have a more holistic approach when reporting a breast MRI.
Lets go out of the Breast: Prevalence of Extramammary Findings and their characterisation on Breast MRI : European Journal Of Radiology

P049 **Capacity, confidence, care ~ using artificial intelligence and machine learning to support breast screening**
Simon Harris [1]; Hugh Harvey [2]; Sam Hawkins [3]; Jacqueline Moxon [4]; Joanathan James [5]; Becky Roberts [6]
[1]; [2]Kheiron Medical; [3]ASI Data Science; [4]EMRAD; [5]Nottingham Breast Institute; [6]United Lincs Breast Screening Service
The national breast screening programme currently invites women aged 50-70 to attend for a mammogram every 3 years. These images are interpreted by two healthcare professionals - so called "double-reading". This is the best way of picking up cancers whilst keeping the number of women who are called back for further assessment to a minimum. Readers are usually specialist breast radiologists (imaging doctors) or radiographers with advanced training. However, there is a national shortage of specialist breast radiologists, and the Royal College of Radiologists predicts that this will increase over the next 5 years.
Within our test bed, we will initially be working with two of our seven Trusts which make up our consortium. One has a strong reputation for high cancer detection and low recall rates, but this is very costly in terms of staff resources. The other is also a high performing service but suffers with long-term workforce recruitment issues. The Trust are taking the pragmatic and forward-thinking approach of up-skilling a number of their reporting radiographers to bridge the skills gap left by the absence of Breast Radiologists in the region.

If AI plus a single human reader could deliver the same results, this would have significant implications for the future of the screening workforce, both our testbed Trusts and throughout the UK. In the future, AI may be able to replace both readers, leaving specialists to utilise their skills in other areas.

P050 **The ratio of length versus width of ultrasound masses in young women with breast disease. A possible guide to the decision to biopsy.**

Chris Loughran
East Cheshire NHS Trust

Aim: Breast masses in young women are common and current guidance is that these should be biopsied when aged over 25. However, the majority prove to be benign, commonly fibroadenomas (FA) It was our impression that longer and thinner masses were almost certainly benign whereas with more rounded masses the diagnosis was less certain. We conducted a retrospective study recording the length and width of breast masses to determine whether the ratio could provide additional diagnostic guidance around the need for biopsy.
Methods: Patients aged 35 years or younger who had undergone ultrasound guided breast core biopsy over a four year period were reviewed. Dimensions and the ratio of length versus width of biopsied masses were recorded. These were correlated with the histology.
Results: 101 patients 35 years or younger were reviewed. Twelve patients had breast malignancy. Of these, 10 (83%) had a ratio of 1.5. or less. With fibroadenomas only 7 of 58 (15%) patients had a ratio of 1.5. or less. Of 12 patients where the ratio was 2.6 or greater, 1 patient - with recurrent tumour proved to have a malignant diagnosis.
Conclusion: A decision to undertake a Core biopsy may be influenced by the abnormality dimensions. The more rounded a mass the more malignancy is likely. The more oval a lesion the abnormality is more likely to be benign.

P051 **The use of quality improvement methodology to implement digital breast tomosynthesis within a breast imaging department**

Ruth Fry
Great Western Hospitals NHS Foundation Trust

Background: Digital breast tomosynthesis (DBT) is an emerging breast imaging technology that was approved for use within the NHS Breast Screening Programme in 2014 (NHSBSP, 2014). Scheduled equipment replacement within a breast imaging department enabled DBT to be introduced in addition to Full Field Digital Mammography; the current standard used within the NHS Breast Screening Programme (Department of Health, 2017). However, within healthcare settings it has been shown that many quality improvement (QI) initiatives fail to be implemented or prove unsustainable following initial implementation (Issen et al., 2018). To overcome the challenges associated with implementing the DBT QI initiative, a programme theory was developed and shared with stakeholders, resulting in increased staff engagement and successful delivery of the change (Reed et al., 2014).
Purpose: Using the implementation of digital breast tomosynthesis as a case study, this poster will present the quality improvement techniques employed to aid future innovators. It will introduce novice innovators to a quality improvement methodology employing programme theory, driver diagrams, RASCI matrix, pathways to outcomes models, long term success tool, stakeholder mapping, health economic assessment and measurement for success. Many health care professionals attempt to deliver improvements in clinical practice; an understanding of improvement science should enable greater success.
Content: This poster will include many of the programme theory models developed during the project to implement DBT. A discussion of how these techniques worked in practice within the breast imaging department QI initiative will be included with signposts to QI resources available for health care professionals.

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P052 **Is there gender inequality in breast imaging?**

Philippa Lee [1]; Amani Chowdhury [2]; Karen Chan [1]; Aia Mehdi [1]; Seema Rodwell-Shah [1]
[1]Hillingdon Hospital; [2]Imperial College London

Background: Breast cancer is the one of the leading causes of cancer-related deaths in women in the UK. Contrastingly, male breast cancer (MBC) represents <1% of all breast malignancies[1]. Timely diagnosis of MBC is key as patients often present with more advanced disease[2]. However, the rarity of MBC and often the delay in patient presentation can inevitably delay the diagnosis. It is therefore unsurprising that studies show mortality rates of male breast cancer to exceed testicular cancer[3]. The most common presentation of male breast lumps (MBL) is gynaecomastia. However, there is no standardised gender-specific recommendation for the assessment of MBL. There is wide variation in practice across the UK and even within our

department. We aim to map an assessment and diagnostic pathway and audit our current practice for men presenting with MBL.
Methods: Retrospective analysis of first attendance of 200 men in breast clinic in a district general hospital was performed. The clinical indication and inclusion of a "P-score", imaging performed and imaging results were recorded. For patients who underwent biopsy, histology was reviewed.
Results: Preliminary results show that over 3/4 of cases presented with gynaecomastia. The majority underwent US only, 14% had both US and mammography. Of these, a "P score" ≥3 was seen in only 20%; it is unclear why the rest received both.
Conclusions: There is wide variation in practice within our department and as a result of this audit, we will produce a standardisation of imaging protocols in assessment of MBL.
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P053 Evaluating the upgrade of large fibroadenomas on final histology

Nyla Khan; Linda Metaxa; Serena Ledwidge; Tamara Suaris; Shefali Dani
Breast Department, Barts Health NHS Trust

Background: Fibroadenomas are common benign lesions of the breast assumed to be due to aberrations of normal breast development/hyperplastic processes rather than true neoplasms. There is limited guidance on the management of large fibroadenomas[1-4].
Method: All biopsy proven fibroadenomas (B2) that underwent surgical excision at our centre over a 4 year period (2015-2018) were collected retrospectively from the surgical diary. Patient demographics, lesion size, imaging characteristics as per the Royal College of Radiologists Breast Group (RCRBG) 5 point scoring system[5] and excision histology was recorded. B3 histology lesions and size <3cm were excluded from further analysis.
Results: 148 patients had surgery for B2 lesions over this time period. 6 patients had multiple lesions and 23 patients had surgery for lesions <2cm; hence a total of 131 B2 fibroadenomas met our inclusion criteria. The size range was 3-6cm and all patients had RCRBG 2/3 imaging characteristics. Mean age of patients was 29 years. One patient was found to have phyllodes on final histology, but she presented with a progressively increasing breast lump. None of the other lesions were upgraded to phyllodes/malignancy following surgical excision.
Conclusion: Currently, all B2 fibroadenomas >3 cm are offered surgical excision at our centre. Our study shows that surgery can be avoided in all patients with clinically stable RCRBG 2/3 graded, biopsy proven B2 fibroadenomas, irrespective of size, thereby reducing the risk of general anaesthesia as well as burden on surgical resources. Additionally, it would avoid unbecoming cosmesis in a young cohort of patients.
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P054 The use of Oncotype DX score in management of early breast cancer

Jasdeep Bhogal; Hannah Tween; Abel Zachariah; Laura Pettit
Shrewsbury and Telford Hospital NHS Trust

Background: Oncotype Dx is a 21 gene assay used to guide decisions on adjuvant chemotherapy in patients with ER positive, HER 2 and node negative breast cancer. This is a recent and practice changing introduction with the aim of sparing patients unnecessary and toxic chemotherapy. The score initially divided patients into 3 risk groups in terms of chemotherapy benefit; low, intermediate and high. The aim of this study was to review practice since the introduction of Oncotype DX testing at a single U.K. cancer centre.
Method: Patients eligible for Oncotype Dx testing between October 2015 and April 2017 were reviewed using clinical portal. Patient demographics and tumour characteristics were recorded on an excel spread sheet. Patients were separated into risk groups depending on their scores and management decisions were reviewed.
Results: Eighty-two patients were included. Eighteen (22%) patients were in the high risk group; all received chemotherapy. Thirty-two (39%) patients were in the low risk group, two offered chemotherapy due to young age. Thirty-two (39%) patients were in the intermediate risk group, eighteen (50%) received chemotherapy. Factors influencing the decision for chemotherapy included patient performance status, co-morbidities, menopausal status, size and grade of tumour, and patient choice.

Conclusion: Oncotype DX is one of the first tests to examine cancer genes in guiding benefit of adjuvant chemotherapy. The intermediate risk group requires careful discussion between patient and their oncologist. Confidence levels with the Oncotype test are now high. A significant number of patients have been spared chemotherapy.

P055 **Audit of heart doses in left sided breast radiotherapy**

Brian Hewitt; Jill Bishop; Angel Garcia-Alonso; Win Soe; Niladri Ghosal
North Wales Cancer Treatment Centre

There is a known link between breast radiotherapy and increased risk of heart disease. Cardiac-sparing radiotherapy is considered to be the standard of care for patients with left-sided breast cancer. Our left breast treatments are planned using Fast Forward constraints. This assesses the volume of cardiac tissue receiving two stated doses. <30 % of heart volume should receive 2.0 Gy (V2) and <5 % should receive 10.0 Gy (V10). Following the publication of RCR consensus guidelines a change in assessing heart dose was required. 90% of patients are expected to receive a mean heart dose <2Gy.
The guidelines require the implementation of a breath hold technique. To assess the impact of introducing a breath hold technique on heart doses, a retrospective audit of 213 free breathing patients with left breast cancer was performed. The V2, V10 and mean heart dose were collated along with any beam modification required to ensure compliance. 94.9% of our patients meet the V2 constraints and 91.6% meet the V10 constraints.
The average mean heart dose is 2Gy. While we are meeting current constraints, there is some compromise in shielding chestwall/breast tissue. If our breath hold technique produces reduction in dose that matches published works we will exceed the recommendations while eliminating the need for this compromise. We intend to implement a deep inspiration breath hold technique within 6 months and conduct new dose comparison audits of DIBH patients, left sided partial patients and right sided patients receiving treatment to internal mammary nodes.

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P056 **Halcyon two-field breast technique using volumetric imaging**

Anissa Seegobin
Queen's Hospital Radiotherapy Department

Backgound: Conventionally, the two-field breast technique is achieved by checking the tangential field placement and borders on the patient with the light field and imaging the medial tangents in the beam's eye view only. Queen's Radiotherapy Department installed the UK's first Varian Halcyon radiotherapy unit in October 2017. The Halcyon does not have a field light to check the tangential field placement and borders on the patient.
A pre-treatment CBCT is mandatory and this is used to match three-dimensionally. It allows visualisation of the BEV for both the medial and lateral tangents. It gives more matching information than a single BEV medial tangential image and therefore gives a more accurate match over the entire PTV. This new technique was implemented for non-DIBH patients. It has improved patient and radiographer experience by significantly reducing the treatment time for breast patients. There is much less need for multiple setups as there is no focus on matching borders. Instead, the 3-D CBCT data set is used to match to a volume. Treatment is delivered using IMRT. A future consideration will be clip matching and simultaneous integrated boost.
Purpose: This poster is intended to share Queens Radiotherapy Department experience with using a 3-D data set to match to a volume for breast radiotherapy. This technique is applicable for any treatment machine that is CBCT-imaging capable.
Summary: The content will include the headings: Background, method, results, conclusion. It will outline the technique and imaging processes. Photos and screenshots will be included. No references used, description based on department practice.

P057 **Implementation of Deep Inspiratory Breath Hold (DIBH) for radiotherapy to left sided breast cancer patients using Surface Guided Radiotherapy (SGRT)**

Ben Allen
Queen Elizabeth Hospital Birmingham

Background: It is acknowledged that left sided breast cancer patients should be offered a breath hold technique in order to benefit from cardiac sparing during their radiotherapy treatment[1].
Aims: To implement a Deep Inspiratory Breath Hold (DIBH) technique for left sided breast cancer radiotherapy and to roll this out to all left sided patients who could comply.
Method: We reviewed several breath hold techniques to see which technique we preferred. We also went to see these techniques being planned and delivered at various hospitals so we had a full understanding of the differences between them.

We decided that Surface Guided Radiotherapy (SGRT) seemed the most patient and staff friendly and also provided the most accurate method of delivery so we began the process of acquiring AlignRT (2).
SGRT DIBH was implemented in June 2018 in a phased roll out to ensure we could cope with the change in technique as well as the extra time required to treat this patient group. We selected different priorities of left sided breast cancer patients in order to control the roll out but also prioritise the patients who would benefit the most initially.
Results: 2 Linacs are now equipped with AlignRT and within 6 months we were able to offer DIBH to all left sided breast cancer patients who could comply with the breath hold.
Discussion: Now we are offering DIBH we are constantly reviewing the service and trying to improve our coaching in order to maximise patient compliance.

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P058 Using EPID results to compare the accuracy of set up between standard radiotherapy patient set up and Surface Guided Radiotherapy (SGRT) patient set up

Ben Allen
Queen Elizabeth Hospital Birmingham

Background: Tattoos are often not ideal as they aren't always where we want to treat and the skin is a mobile organ[1]. We are comparing the accuracy of set up between our traditional set up and an SGRT set up using AlignRT for breast patients[2].
Method: The Electronic Portal Imaging Device (EPID) results for 96 standard breast patients and 95 SGRT patients were compared to see how many patients needed corrective shifts applying to their set up. Corrective shifts are applied to any treatment where the EPID show ≥0.5cm deviation from planned position. A stereoscopic MV pair are acquired for verification.
Results: Corrective shifts were applied to 27/96 patients with the standard set up, (28%). 15 patients needed a repeat image when an EPID result was out of tolerance. The amount of repeat images ranged from 1 to 6 during their treatment. Corrective shifts were applied to 4/95 patients with SGRT set up, (4.2%). 10 patients needed a repeat image when an EPID result was out of tolerance but the maximum number of repeat images needed for any patient was 1 during their treatment.
Conclusion: The results suggest SGRT produces a more accurate set up. This needs exploring further as the patients set up with SGRT in this cohort are all DIBH patients. We will extend this SGRT study to include patients who are in free breath and I expect these results to enable us to move to markerless radiotherapy for breast patients in early 2019.

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P059 An evaluation of factors to pre-determine the use of VMAT planning for breast and IMC patients

James Barber; Elinor Sawyer; Roshni Chauhan; Rubina Begum; Alexandra Henderson; Benson Leung
Guy's and St Thomas' NHS Foundation Trust

Background: All patients referred for radiotherapy for breast and IMCs go through the standard breast pathway. However, a third require a re-plan to achieve dose constraints, taking up additional planners time and meaning the radiographers and doctors time at VSim had been wasted. An audit was carried out to identify factors that can be reviewed prior to VSim which would give a strong enough indication to determine if some patients can go straight to VMAT.
Method: The audit was a retrospective data analysis of all patients referred for IMC radiotherapy in the last year. 41 patients were identified. Patients referred directly into the VMAT pathway before scanning, patients for bilateral treatment and patients for IMC radiotherapy adjuvant to breast radiotherapy were excluded. This left 31 patients.
Results: The audit results showed a strong correlation between ipsilateral lung volume and the need for VMAT planning. Patients with an ipsilateral lung volume of 1200cm3 or less required a VMAT plan with one exception (10 out of 11 patients). This indicates that patients with an ipsilateral lung volume of 1200cm3 or less should go directly for VMAT planning.
Conclusion: It is recommended that when VSim import the scan, the OARs (Ipsilateral lung and heart) are volumed as per departmental protocol and the ipsilateral lung volume measured. If this is found to be 1200cm3 or less, they would then discontinue the VSim pathway and refer directly for VMAT planning. This will be re-audited in 6 months to evaluate efficacy.

P060 Improving cancer screening participation in Nigeria using The JP Kotter Change Management Model

Oluwanife Osungbesan [1]; *Osikhueme Ogbebor* [2]
[1]Lagos University Teaching Hospital; [2]University of Benin

Background: Cancer screening is critical for disease detection at its early stage, when the odds are better for cure. In Nigeria, participation in screening programmes, is poor. This study aims to assess the existing situation regarding breast and cervical cancer screening in Nigeria and determine how the J.P. Kotter Change Management model, which is an 8-step model theory can be incorporated into the system to effect improved participation in breast and cervical cancer screening.

Methods: This was a cross-sectional study of fifty health workers randomly selected from healthcare facilities in Lagos State, Nigeria. The theoretical framework was built on J.P. Kotter's change management model. Questionnaires were used for data collection and statistical analysis done using Statistical Package for Social Sciences (SPSS) version 20.
Results:70% of the respondents considered the health-seeking behaviour of patients to be poor. Majority of respondents also considered financial (42%) and geographical (38%) accessibility to be major screening challenges. Most steps in the screening method were majorly rated as bad. In the assessment of elements of Kotter's model within the screening system, urgency, alliances, structure and celebrating successful short-term plans received the poorest ratings.
Conclusion: Several factors which posed a challenge to screening participation were highlighted. The weaknesses in the screening system as they relate to the J.P. Kotter model were also identified. Recommendations were made regarding how these elements could be improved upon and used to improve screening participation.

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P061 A quality improvement project to improve efficiency in the one stop breast clinic

Vanya Joshi; Vanessa Vasconcelos; Demetrios Tzias
St Peter's Hospital

Background: Thousands of woman are referred to the One Stop breast clinic each year. The clinic involves examination, followed by mammogram or ultrasound and a follow-up consultation. A large proportion of patients with an unremarkable examination and no abnormalities detected by the radiologist will have to return to clinic in order to be discharged by the breast clinician. There is no consensus on whether such patients can be discharged directly by the radiologist.
Purpose: The repeat consultation time spent with this cohort of healthy patients could be used for new or anxious patients or more concerning cases. Furthermore, it is inconvenient for patients to wait around for this appointment or to return to the clinic on another day, if they are satisfied with the normal results. We conducted a quality improvement project to standardise the follow-up plan for one stop patients and increase the number of patients who could be potentially discharged by radiology. We audited one stop clinic consultations at our Trust over one month. On 23% of forms it was stated by the clinician that the patient could be discharged from radiology if appropriate. We then introduced a new form which required clinicians to tick-box whether the patient could potentially be discharged by radiology. This resulted in 55% of patients that could be potentially discharged by the radiologist over one month, of which 90% were actually discharged.
Content: The poster will offer an idea for optimising efficiency in the one stop clinic with proposed time and monetary savings.

P062 Ultrasound tips and tricks for the rookie breast radiology trainee

Trupti Kulkarni
Manchester Foundation Trust

Breast ultrasound is the workhorse of breast imaging within the breast clinic. Ultrasound may be the sole modality employed for breast imaging in younger women. When used along with mammograms whether in the screening or symptomatic set-up, it complements mammography. It allows for ultrasound guided biopsy of lesions identified on ultrasound which is one of its strongest USPs. The drawbacks of ultrasound include user-dependency and inconsistent replicability between users. Learning to perform diagnostic breast ultrasound involves learning basics of ultrasound and pattern recognition in breast disease and appearance of normal breast tissue in various stages of development.
Learning interventional breast ultrasound involves good hand eye coordination, depth perception and good biopsy technique while paying utmost attention to patient safety keeping in mind procedural complications. Breast ultrasound skills are not limited to knowledge and procedural skills but transcend these to include communication with the ultrasound helper and a patient who can observe the play of every expression that flits across the radiologist's face. The radiologist also needs to keep in mind risks to themselves both in the short term and ergonomic risks in the long term. This puts breast ultrasound in a unique position in terms of training.
There is no substitute for learning from experience, however the trainee can learn from the experience of a trainer or senior colleague. This session brings such practical skills alive by touching on both basics such as appropriate use of depth and tissue harmonics as well as changing patient position in order to target

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CARDIAC / CHEST & LUNG

P063 Feasibility of cardiac sparing in isotoxic dose escalated radiotherapy for NSCLC

Louise Turtle [1]; Andrew Willett [1]; Jonathan Leadbetter [1]; Michael Brada [2]; John Fenwick [2]
[1]Clatterbridge Cancer Centre; [2]University of Liverpool

Background: Heart constraints used in NSCLC radiotherapy planning have not changed greatly in the past two decades, despite evidence that there may be an association between heart irradiation and decreased survival. We have therefore carried out a planning study to determine the extent to which heart doses can be reduced without diminishing plan quality. Specifically, we investigated the feasibility of reducing mean heart doses (MHD), and the volume of left atrial wall (LAW) receiving doses in excess of 63Gy (V_{LAW63}).

Method: 20 NSCLC patients were re-planned following IDEAL-CRT protocol[1] using VMAT. We identified new target levels for MHD and V_{LAW63} (Table 1). Patients were then re-planned, more highly prioritising heart and LAW dose constraints, and determining the extent to which heart and LAW irradiation could be reduced while still meeting the IDEAL-CRT target dose coverage levels and dose constraints.

Results: After IDEAL-CRT planning, 8 patients met the ambitious level for V_{LAW63}; however after prioritising constraints on LA Wall irradiation the ambitious level could be achieved for 19/20 patients. Similarly, after IDEAL-CRT planning the ambitious level for MHD was met for only 3 patients, and 5 failed to meet the basic level; but after prioritising reductions in MHD, the ambitious level was achieved in 8 patients and none failed to meet the basic level.

Conclusion: By setting more demanding heart dose constraints, MHD and LAW doses can be substantially reduced while continuing to meet the target coverage and normal tissue constraints of the IDEAL-CRT protocol, potentially improving survival.

Table 1a

	V_{LAW63} Constraint				
	Constraint Level	Ambitious	Moderate	Basic	Failed
		0%	≤2.2%	≤20%	>20%
	Prescribed Dose (Gy) Median [range]				
IDEAL Baseline	68.8 [63, 73]	n=8	n=8	n=4	n=0
Tighter V_{LAW63} planning	68.8 [63, 73}	n=19	n=1	n=0	n=0

Table 1b

	Mean Heart Dose Constraint				
	Constraint Level	**Ambitious**	**Moderate**	**Basic**	**Failed**
		≤5Gy	≤11Gy	≤20Gy	>20Gy
	Prescribed Dose (Gy) Median [range]				
IDEAL Baseline	68.8 [63, 73]	n=3	n=9	n=3	n=5
Tighter MHD planning	68.8 [63, 73}	n=8	n=8	n=4	n=0

1.Landau D, Hughes L, Baker A, Bates A, et al. IDEAL-CRT: A Phase 1/2 Trial of Isotoxic Dose-Escalated Radiation Therapy and Concurrent Chemotherapy in Patients with Stage II/III Non-Small Cell Lung Cancer. Int J Rad Oncol Biol Phys. 2016;95(5):1367-1377

P064 Rare, medium or well done? Practising skin care in interventional radiology

Jenny Jonwood
Nottingham University Hospitals

Background: The capabilities of Interventional Radiology (IR) to treat is continuously expanding, naturally increasing the technical complexities of procedures undertaken and is one of the reasons why IR is an area of radiology which is considered to be at risk of resulting in a skin radiation dose exceeding 5Gy Air Kerma (AK). This recommended trigger point carries advice for further action post procedure due to possible deterministic injury. In reality there is widespread variability within local hospital policies. The trust at the focus of this poster did not have a standardised pathway for high dose procedures within its IR departments. Cardiology based interventional procedures however have a high radiation dose pathway set at 5Gy AK and 500Gycm2 DAP for total amount of radiation delivered to the patient.

Purpose: The aim of the poster is to outline the importance of measuring practice against the standard, illustrate which IR procedures result in the highest radiation dose levels and the importance of recognising cumulative dose and its position within