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Abstracts for poster presentation

P1. Pre-operative Assessment of Axilla in Sentinel Node Biopsy

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Background: Sentinel node biopsy (SNB) is the axillary staging procedure of choice in patients with node negative axilla. Careful patient selection is essential to reduce the risk of a second operation. Preoperative axillary ultrasound is beneficial but has associated false negativity. MR axilla is being tested as an additional tool but remains questionable. We aim to determine the prevalence of axillary nodal metastases in patients who had SNB. We also analyzed any correlation between prognostic tumour factors (size, type, grade, hormone status) obtained from preoperative core biopsy and axillary node status.

Methods: A retrospective analysis of patients who had SNB from February 2008 to August 2010 was done. All patients had triple assessments. MR was done if the ultrasound axilla was equivocal, or to assess suitability for lumpectomy. SNB was done using radioisotope injection a day before surgery and methylene / patent blue after induction.

Results: 97 patients were included. 36 had MR breast and axilla. 23 (23.7%) had positive SNB. 17 (17.5%) of these had metastases in the identified sentinel node only. 3 (3%) had disease only in palpable but non-sentinel nodes while identified sentinel nodes were negative. MR scan was false negative in 28%, slightly more than ultrasound alone (21%). No significant correlation between node positivity and other factors was seen.

Conclusion: This study concurs with other published data reporting node positivity in SNB at 23.7%. 3% had disease in non-sentinel nodes diagnosed incidentally. MR scan did not detect additional nodal disease. Ultrasound remains credible.

P2. The effectiveness of touch imprint cytology in identifying involvement of sentinel nodes in breast carcinoma: A baseline audit

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Introduction: Touch imprint cytology (TIC) is a method of intra-operative assessment (IOA) of sentinel lymph node biopsy (SLNB). It thus allows the surgeon to perform axillary node clearance (ANC) at the time of the primary procedure. Due to this obvious advantage, the method has been introduced in our breast unit.

Method: This audit aims to evaluate whether the use of TIC is accurate for the local population of Dartford and Gravesham set against the standard of recent literature. We audited SLNBs performed during the period April 2009 to November 2010. We analysed the results of the TIC and its correlation with subsequent tissue histology.

Results: 118 SLNBs were performed during this period, 94 of which used TIC as intra-operative assessment. 16 (17.02%) were malignant on TIC, of these, 7 correlated with the tissue histology. 68 (72.34%) were benign and of these 60 correlated with the tissue histology. 10 TIC specimens were inconclusive. The use of TIC was accurate in 71.3% with a sensitivity of 46.7% and specificity of 87.0%.

Conclusion: TIC in our breast unit is of an acceptable accuracy compared to the standard set in recent literature. It is feasible to recommend implementing TIC as routine IOA of SLNB in our unit, along with the back-up of full histological diagnosis.

P3. Fluorescence mapping with indocyanine green (ICG) for sentinel lymph node detection in early breast cancer

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Introduction: Dual localization methods with blue dye and radioisotope permit more confident identification of the sentinel lymph node (SLN). A fluorescence navigation system to visualize lymphatic channels and nodal tissue has been applied to SLN mapping in early stage breast cancer. Identification rates exceeding 95% have previously been reported using a combination of blue dye and the fluorescent tracer indocyanine green (ICG).

Methods: A feasibility study was undertaken to determine the sensitivity and safety of ICG fluorescent imaging when combined with blue dye and radiocolloid. Fifty women with clinically node negative breast cancer (47 unilateral; 3 bilateral) underwent SLN biopsy using blue dye, radioisotope and ICG (triple localization). The sensitivity of ICG alone and in combination with blue dye and/or radioisotope for SLN detection was calculated.

Results: Fluorescent lymphatics were visualized transcutaneously in all 53 procedures. A total of 116 nodes were defined as sentinel (blue and/or radioactive) and were also fluorescent with ICG. Sensitivity rates were: ICG alone 100%, ICG and blue dye 94.9%, ICG and radioisotope 74.1%, ICG, blue dye and radioisotope 70.7%. Eight of 116 (6.9%) SLNs contained metastases and all node positive cases were blue, radioactive and fluorescent.

Conclusion: These results confirm high sensitivity rates for ICG fluorescence in SLN identification. Combined sensitivity was highest for blue dye and ICG suggesting that a combination of blue dye and another non-radioactive tracer has comparable accuracy to conventional techniques. This might avoid the need for radioisotope and encourage more widespread adoption of a dual localization approach.

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P4. Pre-operative Axillary Ultrasound and FNA in Invasive Breast Cancer

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Introduction: We intend to describe departmental experience of routine pre-operative axillary ultrasound scans (AUS) in breast cancer patients, and to assess whether our data supports experience described in the literature.

Methods: 173 patients with invasive breast cancer from July 2009 to July 2010 identified from hospital coding department, and correlated with pathology database of breast tissue samples received. Retrospective imaging and pathological data collection performed from patient notes and hospital electronic systems.

Results: Of 173 AUS, 19 (11.0%) did not have lymph node data recorded. Of 154 AUS with lymph node data, no nodes were seen in 105 (68.2%); 20 (19.0%) of these had node positive disease. AUS displayed a sensitivity of 52%, specificity of 76%, and PPV of 45%. Of 49 (31.9%) AUS with lymph nodes seen, 14 (28.6%) did not have FNA performed. 6 (42.8%) of these were found to be node positive. As expected, when combined with FNA, AUS displays greater sensitivity (92%) and specificity (94%), with a PPV of 92%. Of the 35 patients who had AUS and FNA, there were 7 patients with C1 cytology on FNA, 4 (57%) of whom were subsequently node positive. Only 1 (6.3%) of 16 patients with FNA C2 were node positive, and 1 (50%) of 2 FNA C3. All 10 FNA C5 patients had nodal involvement.

Conclusions: AUS with FNA is a useful means of assessing nodal status in invasive breast cancer and planning further treatment, however a protocol must ensure FNA is performed in concordance with appropriate findings. Furthermore, cytology findings correlate with final histology and can help to plan less radical axillary procedures to reduce complications for the patient.

P5. Flexible Endoscopic Axillary Lymph Node Sampling via a Transumbilical Incision; a Proof of Concept in a Human Cadaveric Model

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Introduction: Flexible endoscopic axillary lymph node dissection may reduce the morbidity associated with open axillary lymphadenectomy mediated by a reduction in both the size of the operative incision (improved cosmesis) and axillary scar formation (reduced arm pain, improved arm function). This study explored the potential of utilising the flexible endoscope to sample axillary lymph nodes through an incision site remote from the axilla.

Methods: A human cadaveric model was used to explore an infra mammary access technique. A supraumbilical, pre-fascial incision was made through which a long tapered introducer and hollow over-tube (custom made in-house) were introduced and used to create a subcutaneous tunnel to the sub-mammary space. Controlled air insufflation through the tube enhanced the space which enabled a 12mm dual channel flexible endoscope (Storz, Tuttlingen, Germany), inserted into the tunnel, to further dissect the space and expose the axillary borders. Dissection of the axilla was undertaken using existing flexible endoscopic instrumentation. Biopsy samples of exposed lymph nodes were sent for histological analysis.

Results: The transumbilical sub-mammary approach to the axilla was performed successfully with clear visualisation of the axillary anatomy, vasculature and nerves. The procedure was completed in 184 minutes. Biopsy specimens confirmed lymphatic tissue by immunohistochemistry.

Conclusions: It is feasible to access the human axilla via an infra-mammary incision using a flexible endoscope inserted at a distance from the operative site using the defined technique. Current limitations relate to the constraints of conventional endoscopic equipment which may be overcome by developments in articulated robotic technologies.

P6. Intradermal microbubbles and contrast-enhanced ultrasound can dynamically visualise lymphatic channels and sentinel lymph nodes in a swine model and patients with breast cancer

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Introduction: Sentinel lymph node (SLN) identification using intradermal microbubbles and contrast enhanced ultrasound (CEUS) has been recently reported in patients with breast cancer. The objective of the present study was to investigate in detail the dynamics of intradermally administered microbubbles as they travel to draining SLN in pigs. We also performed a comprehensive study of the passage of microbubbles through breast lymphatics in a small group of patients with breast cancer.

Methods: Nine anaesthetized healthy pigs were used for the study and 5 female patients with primary breast cancer were recruited. Pigs received intradermal injections of microbubble contrast agent in several territories to access lymphatic drainage to regional lymph nodes (LN). Patients had an intradermal injection of microbubble contrast agent at the peri-areolar margin. Ultrasound examination was performed in real time Cadence Pulse Sequencing (CPS) mode with a Sequoia scanner.

Results: SLN were identified rapidly (less than 1 minute) and consistently in pigs. Intradermal microbubble injection and CEUS were found to have perfect concordance with the Evans blue dye method in locating swine SLN. In all 5 patients with breast cancer, microbubble contrast agent entered breast lymphatic channels and travelled to draining ipsilateral axillary SLN within a time period of 3 minutes.

Conclusions: Intradermally injected microbubbles move readily though lymphatic channels in pigs and human breast tissue. The ability to rapidly identify SLN in the diagnostic period would enable targeted biopsy and may facilitate pre-operative axillary staging in patients with early breast cancer.

P7. Audit of Sentinel Node Biopsy (SNB): Comparing with National Standards

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Introduction: SNB is standard procedure for axillary staging. As per ABS at BASO 2009 Guidelines, minimum standard of $>$ 90% SN identification rate and $<$10% false negative rate. Aim was to compare our results with these standards.

Methodology: We searched retrospectively from October 2007 to October 2009. The data was collected from audit forms, coding and with the help of audit department.

Results: Total cases were 97 with mean age 60. Scintigram was done in 95, as failure of equipment in 2 (where sentinel node, SN, was identified). Axillary nodes were visualised in 95; with 0-9 nodes in individual cases (mean: 3), internal mammary nodes in 2 and non-visualisation in 6 (3 of which were not identified). Intraoperatively SN was not identified in 4 out of 97 (3 of them were positive on sampling); identification rate of 95.8 %. SN no. identified were 0-7 (mean: 2); hot / blue (93): 80; hot only (93): 39; blue only (93): 7.

Out of 93 sentinel nodes identified, 27 were positive (29%); and 2 false negative: one of which had multifocal breast cancer. False negative rate

was 8 % and negative predictive value: 96%. Axillary clearance was done in 13; 3 (23%) of which had positive nodes. Complications occurred in none.

Conclusions: SN identification rate 95.8 %, false negative rate 8 % and negative predictive value of 96%, compared well with national standards.

Recommendations: All breast cancer cases should have preop axillary US with US guided FNAC/ core on axilla where suspicious lymph nodes. Value of scintigram is doubtful.

P8. A comparative study of Anglo-Hungarian techniques for ROLL & SNOLL

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Introduction: Radioguided occult lesion localisation (ROLL) allows intra-operative identification of impalpable breast lesions using pre-operative image-guided radioisotope injection. This avoids wire placement, which can be technically demanding and uncomfortable for the patient. ROLL can be effectively combined with sentinel lymph node biopsy in a single procedure (SNOLL).

Methods: We compared the results of combined ROLL and SNOLL at the National Institute of Oncology, Budapest, Hungary (n=211), and the Norfolk & Norwich University Hospital, UK (n=174). In Budapest, a single intra- or peri-tumoral isotope injection was performed one day prior to surgery. Patent blue V dye was used for sentinel node identification. In Norwich, two radioisotope injections were performed on the morning of surgery- one intra-tumoral and one sub-dermal in the opposite quadrant. No dye was used. Both centres performed intra-operative specimen radiography and intra-operative node analysis by touch imprint cytology (TIC). Statistical analysis was by Fisher's exact test.

Results: Patient age, tumour type and tumour size were comparable. In Norwich, more specimens had <5mm clear margins (30.5% v 14.7%, p=0.0003), and more patients required further surgery (21.8% v 4.2%, p<0.0001). The sentinel node identification rate was higher in Norwich (99.4% v 92.9%, p=0.0012), with no false positive results on TIC (0% v 8.7%, p=0.2151).

Conclusion: ROLL and SNOLL can be performed in combination. ROLL may be optimised using peri-tumoral radioisotope injection to define the extent of the lesion. A separate sub-dermal radioisotope injection results in a higher rate of sentinel node identification, without the need for blue dye.

P9. Intra-operative Touch Imprint Cytology (TIC) of axillary lymph nodes: a feasibility study for the Conquest Hospital

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Introduction: Touch Imprint Cytology (TIC) is a technique allowing intra-operative assessment of axillary lymph nodes. Along with frozen section and molecular biological systems, such as Veredex and Osna. These allow progression to axillary lymph node dissection at the same operation. TIC is a technique requiring specialist cytopathologists. We present our experience in a District General Hospital.

Methods: Prospective study of consecutive series of patients undergoing level II or III axillary lymph node dissection (ALND), from October 2006 to September 2007, was undertaken. One surgeon and three cytopathologists were involved. TIC of random level I lymph node was compared with the imprint node histology, for all cases. Sensitivity, specificity and Fischer's exact T test were used for data analysis. Cytopathologists were blinded to the use of coated and uncoated slides, used for each case.

Results: 38 of 42 consecutive cases were analysed (4 exclusions as uninterpretable), with mean axillary yield of 13.7. 12 TIC nodes were positive; in all these the imprint node histology was also positive. 26 TIC nodes were negative and all imprint nodes negative in these cases. Sensitivity=100%, specificity=100%, false negative rate of 0 and P<0.0001 (Fischer's exact T-Test). The pathologists observed no difference in the coated and uncoated slides.

Conclusion: Our data suggests TIC of intra-operative lymph nodes is a useful tool in a District General setting for determining whether or not to proceed to full ALND at that operation. A dedicated surgical team and cytopathology department is required and coated or uncoated slides can be used.

P10. Real Time Intraoperative Assessment of Axillary Lymph Nodes using Raman Spectroscopy

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Introduction: The intraoperative assessment of axillary lymph nodes can confer advantages over postoperative node assessment to both the patient and the wider health care community. A successful method of assessment must be sensitive and specific, fast, cost-effective and simple to use. These results demonstrate that Raman spectroscopy can fulfil these requirements within the theatre setting.

Methods: Following ethical approval lymph node samples were collected from 50 patients undergoing axillary surgery following a diagnosis of breast cancer. After excision, lymph nodes were simply dissected free from the surrounding fat and cut in half. Each half was immediately assessed using a portable Raman spectroscopy device (MiniRam II, B&W Tek, Newark, DE, USA). The mean assessment time per sample was 138sec (range 80sec - 400sec). The node was then sent for post operative histopathological assessment as is standard within our trust.

Results: 209 lymph node halves were included in this study. 181 were classified negative and 28 positive (for macro-metastases) by histopathology. 1507 spectra were obtained from the negative nodes and 300 from the positive nodes. Spectral analysis was performed using principal component analysis (PCA) and PCA fed linear discriminant analysis. Raman spectroscopy achieved a specificity of 99% and a sensitivity of 92% at differentiating between the two groups. Significant differences in the peaks associated with fatty-acids were evident.

Conclusions: Raman spectroscopic assessment of lymph nodes is simple, quick, cost-effective and is independent of immediate pathology review. It can achieve results that are comparable to other techniques but without their many disadvantages.

P11. Breast Cancer Sentinel Node Intraoperative Molecular Diagnosis: GeneSearch BLN assay vs. Metasin assay

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Introduction: Sentinel lymph node biopsy (SLNB) is the gold standard for clinically and radiologically node-negative breast cancer. Intraoperative sentinel node assessment (IOA) enables immediate axillary clearance when positive. Our unit previously reported the implementation of the 'GeneSearch BLN assay (Veridex LLC, Warren, New Jersey, USA)', showing very high acceptability and accuracy. Following its withdrawal, we participated in validating an alternative (Metasin) assay, which also amplifies and detects RNA markers cytokeratin 19 (CK-19) and mammoglobin (MG). We audited the Metasin assay for sensitivity, specificity and concordance to histopathology.

Methods: Prospective analysis of 127 consecutive patients undergoing SLNB with IOA over a four-month period. Patient/tumour characteristics, IOA results using Metasin, and final histopathology reports were recorded. Data was compared to results previously reported by this unit for GeneSearch BLN.

Results: 202 sentinel nodes from 127 patients were evaluated. Metasin detected metastasis in 35 nodes (29 patients).

Table 1
Comparison of results

	GeneSearch BLN	Metasin
Detection of macrometastases (%)	100	100
Overall Concordance [including micrometastases] (%)	95	95
Sensitivity (%)	96	95
Specificity (%)	95	97

The cost of consumables for Metasin is significantly lower than for GeneSearch BLN. This results in a cost saving of at least £100/case.

Conclusion: The Metasin assay displays the same diagnostic accuracy as GeneSearch BLN with a considerable cost-reduction, after the lead-in period associated with any change in technique has been completed.

P12. Magnetic 'V' conventional technique for sentinel lymph node biopsy in breast cancer

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Introduction: The combined technique for sentinel lymph node (SLN) biopsy has significant drawbacks including poor pre-operative imaging, radiation exposure regulation, blue dye obscuring the surgical field and skin tattooing. Using an in-house developed magnetometer we have demonstrated detection of magnetic nanoparticles within the SLN following subcutaneous injection. We compared this magnetic technique against the combined technique of blue dye and radio-isotope.

Materials and Methods: Patients with newly diagnosed breast cancer underwent SLN biopsy for axillary staging. Blue dye (Guerbet, Paris), radio-isotope and 2ml of a super paramagnetic iron-oxide (SPIO) nanoparticle (Endorem, Guerbet, Paris) were injected into the affected breast pre-operativly. During surgery the SLN was identified using a combination of blue staining, black staining (from the iron particles), gamma counts or a reading greater than 20 counts on the magnetometer. The resuls were reterospectivly compared.

Results: The ex-vivo detection rate (per patient) was 100% for the combined technique and 87% for the SPIO technique. This detection rate was significantly increased when the time from injection of the SPIO to excision of the node was increased to greater than 60 minutes (82% 'v' 93%) $p<0.01$

Conclusion: SLN biopsy using magnetic nanoparticles is feasible. The SPIO/magnetometer technique compares well with the combined technique when the time from injection to excision is greater than 60 minutes. Further work needs to be undertaken to optimise injection dose of the SPIO.

P13. Can negative axillary node clearances in sentinel node positive breast cancers be accurately predicted and therefore prevented?

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Introduction: Standard treatment for patients with sentinel node (SN) positive breast cancer is axillary node clearance (ANC). A large proportion of these ANCs are negative for non-sentinel node (non-SN) metastasis. Several models have been developed to identify SN positive patients who are likely to have negative ANCs. If successful these models can identify patients in whom ANC is unnecessary. The aim of this study was to evaluate these models within our patient population.

Methods: Retrospective pathological data was reviewed from 75 consecutive patients with SN positive breast cancer who underwent ANC. Four models were assessed: Tenon score, MDA score, MSKCC nomogram and Stanford nomogram. The sensitivity, specificity, false negative rate (FNR), positive (PPV) and negative predictive values and number of patients identified by each model were calculated.

Results: 44 patients (59%) had negative ANCs. The models failed to identify the majority of these patients (FNRs of 77 - 100%). The MSKCC nomogram failed to identify any of the 44 ANC negative patients. The Tenon score identified the highest number of patients (13) although 3 of these had at least one positive non-SN at ANC (PPV of 77%). The MDA score had a PPV of 100% (no patients incorrectly identified) but only identified 9% (4) of the negative ANC patients.

Conclusions: These models failed to identify the majority of patients with negative ANCs. Based on this data the MDA scoring system would be safe to introduce into clinical practice. However, it would only reduce the rate of negative ANCs by 9%.

P14. Patients support intra-operative assessment of sentinel lymph node biopsies and would consent to axillary node clearance at initial surgery if indicated

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Introduction: Currently sentinel lymph node biopsy (SLNB) represents an inter-operative assessment for patients requiring lymph node status determination in our unit. However, we anticipate offering intra-operative assessment thereby enabling axillary node clearance (ANC) at initial surgery if indicated. The aim of this study was to assess patients' understanding of SLNB, the implications of a positive result, and their support for intra-operative assessment.

Methods: 40 patients were given a 10-point questionnaire developed in conjunction with psychologists from Keele University, following breast surgery and SLNB. Patients' knowledge about SLNB, adequacy of information received, implications of positive results, time to receive results and support of ANC at initial surgery if appropriate, were all assessed.

Results: 85% of patients stated they fully understood SLNB after receiving written and verbal information. 35 (88%) patients understood that a positive result requires a second operation and 26 (65%) would rather not have to wait the current 8-10 days for results. Of five patients who were unaware of the implications of a positive result, three were not happy to proceed to additional surgery without further discussion compared to the majority (25 of 35) of patients who did understand this. However, the vast majority (82.5% of all patients) were happy to proceed to ANC at initial surgery if intra-operative SLNB assessment was available and found the SLNB to be positive.

Conclusion: Patients have a good understanding of SLNB and if intra-operative assessment was available, 82.5% (33 of 40) would definitely agree to ANC at initial surgery if indicated.

P15. The rate of positive sentinel lymph nodes following pre-operative axillary staging

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Background: In our Trust, in line with NICE guidance, all breast cancers undergo pre-operative axillary staging with ultrasound and, where appropriate, fine needle aspiration. The use of sentinel lymph node biopsy (SLNB) for surgical assessment of axillary disease (versus clearance) minimises post-operative morbidity. Where SLNB demonstrates axillary node disease, however, the patient may require axillary clearance: a second surgical procedure. Literature suggests that intra-operative diagnostic testing could potentially reduce axillary re-operation rates.

Aims: The aim of this audit was to assess the rate of patients who have positive sentinel nodes on SLNB following negative pre-operative staging.

Methods: Patients undergoing SLNB between 01/06/2009 and 31/05/2010 were identified using the theatre database. Following this, patients with false negative axillary staging between 01/09/2010 and 31/12/2010 were identified from multidisciplinary meeting records.

Results: 177 female patients underwent SLNB in the initial study period. The median number of nodes taken was 3 (range 1-10 nodes). 26 patients (15%) had positive lymph nodes on sampling (15/26 were micrometastases) and went on to axillary clearance. 7/26 had further positive nodes on axillary clearance. In the following 4 month re-audit period, 11/98 (11%) positive SLNB were discovered. 6/11 patients had micrometastases. 4/11 patients had further positive nodes on axillary clearance.

Discussion: Our rate of positive SLNB is higher than desired. The use of intraoperative molecular assays has shown concordance with histopathological methods, offers a potentially effective method of reducing re-operation rates and improving patient care. As such, this is being considered for implementation in our Trust.

P16. The rate of micrometastases following sentinel lymph node biopsy

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Background: Sentinel lymph node biopsy (SLNB) is the gold standard of care for axillary staging in patients with breast cancer. The World Health Organisation staging for breast cancer has categorised nodal disease as individual tumour cells, micrometastases between 0.2-2mm and macrometastases > 2mm. The prognostic significance of micrometastatic disease is unclear, however current surgical practice is axillary clearance.

Aims: The aim of this audit was to look at the rate of micrometasates on SLNB, and the further rate of positive nodes upon axillary clearance.

Methods: Patients undergoing SLNB between 01/06/2009 and 31/05/2010 were identified using the theatre database. Following this, patients with false negative axillary staging between 01/06/2010 and 31/12/2010 were identified from multidisciplinary meeting records.

Results: 177 female patients underwent SLNB in the initial study period. The median number of nodes taken was 3 (range 1-10 nodes). 26 patients (15%) had positive lymph nodes on sampling (15/25 were micrometastases) and went on to axillary clearance. 5/15 cases had further micrometastases, with 1 case of macrometastases. In the following 6 month re-audit period 19/138 (14%) positive SLNB were discovered. 10/19 patients had micrometastases. 3/10 had macrometastases following further axillary clearance. Overall, 10/25 (40%) who had micrometastases on SLNB had further positive nodes on axillary clearance.

Discussion: Through analysis of micrometastatic disease in sentinel nodes we have discovered an overall high positive rate in the non-sentinel nodes upon clearance. The biological and prognostic significance of these lymph node metastases is uncertain. Current practice and future developments will be discussed.

P17. Lymphoscintigram in sentinel node biopsy: Do we need it?

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Introduction: Sentinel lymph node biopsy (SLNB) is used for surgically staging the axilla in breast cancer. This involves injecting blue dye and/or radioisotope tracer to localize the sentinel node/nodes. Lymphoscintigram is used preoperatively but the diagnostic accuracy it adds to the procedure is doubtful. This study aims to compare the number of sentinel nodes seen on histopathology and the results on Lymphoscintigraphy.

Methods: Patients that had SLNB between January 2009 and June 2010 under the care of our team were identified. All patients had the standard technique using a combination of Tc-99 labelled albumin and Patent Blue V injections. Tc-99 labelled albumin was injected before surgery followed by Lymphoscintigram while the blue dye was injected on table. The sentinel node was identified as any blue and/or hot node. The Lymphoscintigrams were read and the number of sentinel nodes on histopathology was compared to the Lymphoscintigrams.

Results: 49 were identified, 3 of them were excluded as intra-operatively there were palpable malignant nodes and immediate ANC was done. 21 out of the 46 patients (46%) had the same number of nodes on both pathology and lymphoscintigraphy, while in 16 (35%) the lymphoscintigram had more nodes and in 9 (19%) the SLNB had more nodes.

Conclusion: This study shows poor correlation between the number of nodes excised and the results of Lymphoscintigraphy. With this poor correlation, though it is recommended Lymphoscintigraphy does not add to the accuracy of SLNB.

P18. Pre-operative assessment of the axilla in breast cancer using ultrasound: a review of practice in a District General Hospital

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Introduction: Surgery for breast cancer involves resection of the tumour with axillary lymph node dissection (ALND) in the form of axillary node clearance (ANC), sampling (ANS) or sentinel node biopsy (SNB). Due to the morbidity of clearance, less invasive techniques have become common. Axillary ultrasound (USS) to identify malignant nodes is used pre-operatively to aid decision making regarding what axillary surgery to perform. We reviewed our practice to validate the use of USS in clinical practice.

Methods: We identified symptomatic breast cancer patients from the MDT database from January 2007 to August 2010. Radiology and Histopathology databases were used to collect results of the USS and axillary node histology.

Results: 101 patients were identified. The sensitivity and specificity of USS was 56% and 99% respectively. The positive predictive value (PPV) and negative predictive value (NPV) was 94% and 86% respectively. The overall accuracy was 87%.

Discussion: The low sensitivity means that USS cannot replace axillary surgery to assess tumour stage. The high PPV means it is excellent at confirming disease. These patients can proceed straight to ANC and avoid two procedures. The high specificity and NPV mean that USS is useful as a screening test. It will correctly identify most patients who do not have axillary disease and can have either ANS or SNB in the first instance. Our rates are favourably comparable to the published literature.

Conclusion: We believe that axillary USS is an important part in the assessment and treatment of breast cancer.

P19. Location Of The Sentinel Node In The Axilla: Is It Predictable?

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Introduction: The exact anatomical location of the sentinel lymph node (SN) in the axilla has never been clinically studied before. We believe that it could be a useful adjunct not only for teaching purposes but also inreducing the morbidity of the technique. The aim of this study is to

precisely define the location of the sentinel node in the axilla, to demonstrate that it is not randomly located and that the lymphatic flow of the breast follows a predetermined route.

Methods: A consecutive series of 242 patients with DCIS or stage I breast cancer (T1N0/T2N0) who had SN localization were included in a prospective study, precisely mapping the location of the SN in the axilla. In order to do so we created a new anatomical classification of the lower part of the axilla based upon the intersection of two anatomical landmarks, the lateral thoracic vein (LTV) and the second intercostobrachial nerve (2nd ICBN). These two constant elements form the basis of 4 different axillary zones (A, B, C and D).

Results: In 98.2% of patients the axillary SN is located medially, alongside the LTV, either below the 2nd ICBN (axillary Zone A; 86.6%) or above it (axillary Zone B; 11.6%). Only 4 patients (1.8%) had their SN located laterally in the axilla.

Conclusion: Regardless of the site of the tumour in the breast, 98.2% of the SNs were found in the medial part of the axilla, alongside the LTV. This information should help avoid unnecessary lateral dissections.

P20. Analysing Sentinel Lymph Nodes with Intra-operative One Step Nucleic Acid Amplification (OSNA) - does it impact on operating times?

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Introduction: Sentinel lymph node biopsy (SLNB) for nodal staging of breast cancer is now routine practice. OSNA is a recent intra-operative tool using molecular analysis that allows for rapid accurate diagnosis of lymph node metastases. Our aim was to determine the time to analyse the sentinel nodes using OSNA and how this affected the overall time for the operation.

Methods: The first 100 patients with breast cancer (mean age 59.5 years, range 30-85 years) who underwent SLNB with intra-operative OSNA analysis between May - November 2010 were all included. Patients underwent mastectomies and wide local excisions (+/- wire) after SLNB. Patients with sentinel nodes that were positive for metastases proceeded to an axillary node clearance. The duration of surgery to the breast and axilla and the time for the OSNA result after the node left theatre were recorded prospectively.

Results: The median time for a SLNB to be performed was 12 minutes (range 2-57 minutes). The median time waited for the telephoned result was 44 minutes (range 28 -75 minutes). In 54%, the breast operation had finished prior to the results coming back, with a median waiting time of 3 minutes. Thus in 46% cases, the result was known before the breast operation had finished. 39 patients proceeded to an axillary node clearance based on a positive result (macro- and micrometastases).

Conclusion: OSNA is a quick reliable system for analyzing sentinel nodes. It did not significantly delay operating times and eliminated the need for a second axillary operation.

P21. Risk prediction of non-sentinel lymph node metastasis using the Stanford Online Calculator

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Background: 40-60% of patients with metastatic disease in the sentinel lymph node (SLN) will have no additional non-sentinel lymph node metastasis (NSLNM) following axillary lymph node dissection (ALND). Several models and normograms have been proposed to aid clinicians predict the risk of NSLNM. The aim of this study is to assess the performance of the Stanford Online Calculator (SOC).

Methods: Database review of the first consecutive100 SLNB by a single surgeon between May 2009 and April 2010. Patients with positive SLN(s) - excluding isolated tumour cells - who underwent completion ALND were analysed. For each patient, the pathologic tumour size, size of SLN metastasis and the presence or absence of lymphovascular invasion were entered into the SOC to calculate the probability of NSLNM. Statistical analysis was done with the Student t test.

Results: Of 22 patients with positive SLN(s), 19 underwent ALND. 9 (47%) had NSLNM. Only one additional NSLN was involved in 4 patients. The mean number of additional positive NSLN was 5 (1-28) and mean number of nodes resected was 12 (5-31). There was no statistical difference between the mean SOC predicted probabilities of patients with and without NSLNM (75% vs. 62%; P=0.334). 1 patient with low SOC predicted score of $\leq$ 10% had no NSLNM (false negative rate 0%). Of 2 patients with predicted probability of 100%, 1 had no NSLNM (false positive rate 50%).

Conclusion: At this early stage the SOC is not sufficiently discriminatory to change current practice. The audit continues.

P22. In breast cancer, predicting which patients with macrometastasis in sentinel lymph nodes (SLN) have non SLN metastases is not possible

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Introduction: SLN biopsy (SLNB) is the standard axillary staging procedure for breast cancer patients. Tumour characteristics cannot exclude the presence of metastasis in non sentinel lymph nodes. This study assesses whether the number of positive sentinel lymph nodes predicts the incidence of non sentinel lymph node involvement, or the number of lymph nodes involved.

Methods: Most patients with nodal involvement were detected by routine axillary ultrasound . The remainder underwent SLNB. Those with a positive SLNB between October 2006 and June 2009 were reviewed to show the incidence and number of positive SLNs found after completion ANC.

Results:

Total number of patients having SLNB = 482
Patients with positive SLNB = 103
TOTAL positive who underwent ANC= 101
34% ANC positive
Median number of nodes=2
Range 1-7
SINGLE positive SLN= 51
26% ANC positive
Range 1-5
2 or more positive SLN= 22
62% ANC positive
Range 2-7
Micromets at ANC= 22
23% ANC positive
Range 1-5
ITCs at ANC =2, no positive nodes at ANC

Conclusions: 34% of patients with a positive SLN were found to have non SLN metastasis. The number of non SLNs involved was between 1 and 7 and was the same whether 1, 2 or more SLNs were involved. Leaving up to 7 involved non SLNs surgically untreated cannot be recommended. Completion ANC should be advised for patients with a positive SLN.

P23. Which patients benefit from intra-operative assessment of sentinel nodes?

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Introduction: Pre-operative axillary imaging with ultrasound is now standard prior to surgery for early breast cancer. Intra-operative sentinel node assessment techniques are used to detect metastasis intra-operatively and proceed to axillary dissection. We evaluated detection rate and type of axillary metastasis, by ultrasound and histopathology.

Methods: Prospectively collected data on patients undergoing surgery for invasive breast cancer or DCIS and sentinel node biopsy, between 1/4/2009 and 31/3/2010, was reviewed. We assessed axillary ultrasound and histological findings on all patients and need for subsequent axillary dissection.

Results: Of 207 patients with invasive breast cancer or DCIS, 70% (145/207) underwent sentinel node biopsy (SLNB). Of patients undergoing SLNB, histological analysis showed 20% (28/145) had macrometastasis, 9% (13/145) had micrometastasis, 3% (4/145) had isolated tumour cells and 68% (100/145) were negative. Of 47 patients who underwent axillary dissection at the initial operation, 85% (40/47) had a positive biopsy following pre-operative axillary ultrasound. Of patients with macrometastasis in any lymph node, 59% (40/68) were diagnosed pre-operatively on axillary ultrasound and biopsy. Of 13 patients with a micrometastasis in a sentinel node 100% were diagnosed following surgery.

Conclusions: Most patients with an axillary macrometastasis are diagnosed pre-operatively and a large proportion of patients, would benefit from intra-operative assessment of sentinel nodes. Patients with axillary micrometastasis would only benefit from intra-operative assessment if it can reliably detect these.

P24. Ultrasound guided needle biopsy of the sentinel lymph node (SLN) identified by intradermal injection of microbubbles in patients with invasive breast cancer

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Introduction: Following the successful identification of the SLN by contrast enhanced ultrasound using microbubbles injected intradermally we wished to assess the feasibility of US-guided needle biopsy of the SLN identified by the same method.

Method: In this study, 59 patients with invasive breast cancer and no clinically or sonographically abnormal axillary lymph nodes, received an intradermal microbubble injection in the areola. When an enhancing axillary lymph node was visualized, percutaneous US-guided fine needle aspiration (FNA) or 16-G core biopsy was performed. Depending on the biopsy results patients had conventional SLN biopsy or axillary lymph node dissection (ALND).

Results: SLN was successfully identified in 56 of the 59 cases (95%). Eleven of these 56 cases (20%) were lymph node positive. Six of the 11 (55%) patients had a positive US-guided biopsy and therefore were treated with an immediate ALND. The remaining 50 patients had conventional SLN biopsy with blue dye and isotope injection. In five cases a positive lymph node was identified, and patients underwent a completion ALND. In 96% (48/50) of patients undergoing conventional SLN biopsy, in the specimen there was histological evidence of a previous needle biopsy, including the five false negative cases. In two of these five cases the metastatic deposit was smaller than 2mm (micrometastasis).

Conclusions: SLNs can be identified and biopsied using preoperative contrast-enhanced US, and this reduces the need for a second operation in more than 50% of the cases. However if the needle biopsy is negative, conventional operative SLN biopsy is still indicated.

P25. Analysis of occurrence of axillary node micrometastases in invasive breast cancer

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Introduction: We aimed to analyse the occurrence of axillary micrometastases and any correlation with different characteristics of invasive breast cancer.

Methods: All cases of axillary micrometastases in association with invasive breast cancer between December 2003 and May 2009 were analysed retrospectively.

Results: A total of 36 cases were analysed. Number of micrometastases ranged from 1 to 3 (mean 1.1 ± 0.07). Associated macrometastases, noted at same or subsequent dissection, ranged from 1 to 10 (mean 1.5 ± 0.37). Median age of patients was 54.2 ± 10.6 years. In fourteen patients micrometastases was noted without any associated macrometastases. The occurrence of vascular invasion of primary breast cancer was similar in the group of micrometastases (n=17; 77.2% of 22) alone, compared to combined micro- and macrometastases group (n=8; 57.1% of 14) [p=0.27]. The occurrence of age, grade and size of breast cancer were 54.7 ± 2.8 years, 2.2 ± 0.1, 26.8 ± 3.3 mm amongst micrometastases only group, compared to 54.0 ± 2.3 years, 2.5 ± 0.12 and 33.0 ± 4.9 mm in the combined group of micro- and macrometastases [p=NS]. Occurrence of number of macrometastases varied from 0.33 to 10 times than corresponding micrometastases, and did not bear any association with grade or size of the related tumour [p=NS].

Conclusions: The occurrence of axillary node micrometastases in breast cancer is low and can be in isolation without any associated macrometastases. The grade, size and vascular invasion status of primary invasive cancer bear no significant correlation with any such associations. This may help in the understanding of the significance of micrometastases of axillary nodes in association with breast cancer.

P26. Metasin-BLNA: The NHS Solution Cost Effective-Rapid Intraoperative Molecular Assessment of Sentinel Lymph Nodes from Breast Cancer Patients

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Introduction: We have developed a molecular assay for the assessment of Metastatic Breast Cancer in Sentinel Lymph Nodes (SLN) from patients with Breast Cancer. The Metasin-BLNA assay has a machine run time of 26 mins and RNA prep time of 6 mins for analysis of 2 lymph nodes.

Methods: MetasinBLNA has 2 predictive markers:Cytokeratin19 & Mammaglobin with PBGD as an internal reference gene. Over 700 cases have been examined in parallel with the Veridex Genesearch assay and histology. We examine all SLN at 5 levels at intervals of 150 microns. For analysis of discordant cases, immunostains and further levels have been examined.

Results: We demonstrate a high level of concordance with the Genesearch assay and Histology with discordance in less than 4 % of cases in this large series. Of the lymph nodes with metastatic disease (n=125), 15% of Metasin positive cases and 12.8% of Genesearch (Veridex) assay positive cases showed positivity for only the Mammaglobin marker.

Conclusion: The Metasin-BLNA assay is cheap (£35) for 2 nodes, fast - result in under 46 minutes (total assay time from receipt in laboratory) in over 75% of cases. We will be able to offer this assay to the NHS once 1200 cases are validated (May 2011).

Acknowledgements: FG Gabriel, A McDowell (Portsmouth), Nicola Addington Hull (Wales) for facilitating this research. We are also grateful to all of the Pathologists, Breast Surgeons and the Breast Team at PAH, Harlow, Mr Morgan FRCS (retired Breast Surgeon) for funding of this translational research.

P27. Sentinel Node Management with a Negative Scintogram

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Introduction: The management of the sentinel nodes in cases where the pre-operative scintogram shows no axillary uptake is operator dependent and variable. Our policy in these cases is to proceed with the blue dye injection and the New Start measurement protocol in the axilla. The aim of this study was to determine the outcome of these cases.

Methods: We studied consecutive scintograms performed prior to SNB identification. The dye uptake and radioactivity counts were noted and correlated with the final pathology.

Results: 550 cases were identified and 14/550 patients (age range 37-78 years) had a negative scintogram. In all cases there were no involved nodes on ultrasonography. There was no significant difference in tumour grade or geography between patients with or without uptake on the scintogram. The dye and radioactivity uptake in the lymph nodes of patients with a negative scintogram are tabulated below.

No of Patients	Axillary Uptake	Operative treatment	No with positive SNB
1	No radioactivity. No Blue dye.	Axillary lymph node sample	0
2	No radioactivity. Blue dye present.	Sentinel lymph node biopsy	0
11	Some reduced radioactivity detected intra-operatively. Blue dye present	Sentinel lymph node biopsy	2

Conclusions: These data demonstrates sentinel node identification is still possible despite a negative scintogram and more invasive axillary surgery should be avoided.

P28. Validation study of One-step Nucleic Acid Amplification (OSNA) analysis of axillary sentinel lymph nodes in breast cancer

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Introduction: One-step nucleic acid amplification (OSNA) assay has been shown to be as accurate as conventional histopathology in detecting axillary lymph node metastases in breast cancer. This study aims to validate the use of OSNA in a DGH prior to offering this technique to patients routinely. Once introduced OSNA will reduce the number of second axillary procedures as it will enable immediate axillary node clearance in cases of positive SNB.

Methods: 24 consecutive patients undergoing sentinel lymph node biopsy (SNB) were studied. Standard SNB was performed and each node removed was sectioned into 4 pieces a-d. Sections a and c were sent for conventional histological analysis and sections b and d were used for OSNA. The concordance rate between the the two assessment methods was assessed.

Results: From the 24 patients studied there was a yield of 62 lymph nodes (mean 2.6 per patient). The positivity rates are tabulated below.

	Histology Negative	Histology Positive
OSNA Negative	48	1
OSNA Positive	2	11

Conclusions: There is a 95% concordance between the results of histological examination and OSNA which mirrors the results of larger studies indicating intra-operative OSNA can safely be offered to patients undergoing SNB in our institution. 29% of patients in this study could have proceeded to ANC at the time of surgery, avoiding unnecessary treatment delay and a second axillary procedure.

P29. Axillary node staging by axillary ultrasonography (AUS) and fine needle aspiration cytology (FNAC) in patients with invasive breast cancer

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Introduction: Staging of the axilla in patients with invasive breast cancer is important in determining the prognosis and treatments required. Accurate pre-operative diagnosis of the axilla avoids unnecessary sentinel node biopsy. The objectives of this audit are to assess whether:

1. NICE guidelines are met
2. There is a difference in the sensitivity and specificity of AUS/FNAC at the Royal Marsden compared with other studies
3. Tumour characteristics and mode of detection affect sensitivity of AUS/FNAC

Methods: All patients with newly diagnosed invasive breast cancer over a 1-year period were included. Exclusion criteria were: in-situ carcinoma, neoadjuvant therapies and AUS/FNAC not done due to technical reasons. Follow-up and family history screening patients were excluded from the screening / symptomatic comparison. Data were collected and analysed retrospectively and compared against the NICE guidelines and published literature.

Results: A total of 272 patients were included. The overall sensitivity was 31.2% with a specificity of 100%. The symptomatic group had a sensitivity of 33.3% compared with 28.6% in the screen-detected group. There was a correlation between the sensitivity of AUS/FNAC and tumour characteristics and number of positive nodes. However some of the subgroups were too small to allow meaningful comparison.

Conclusion: The overall sensitivity is within the range reported in the literature but there is a difference between symptomatic and screen-detected. We are closing the audit loop by re-scanning screening patients in the hope of decreasing the number of patients undergoing unnecessary surgery.

P30. ACOSOG Z0011: Are the results applicable to patients undergoing sentinel node biopsy in a UK Breast Unit

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Introduction: The ACOSOG Z0011 study randomised selected patients with a positive sentinel lymph node biopsy (SLNB) to completion axillary dissection (cALND) or no further axillary surgery. At 6 years follow up disease free survival was similar in the two arms. The conclusion was cALND may not be necessary for all SLNB positive patients. The aim of our study was to assess the applicability of the Z0011 results to our patients.

Methods: Z0011 eligibility criteria (no neoadjuvant chemotherapy, T1 - T2 tumours, breast-conserving surgery and 1-3 positive SLNs on H&E) were applied to all Royal Marsden Hospital (RMH) patients who underwent SLNB for invasive breast cancer between June 2006 and September 2009. Patient characteristics and results were compared using Fisher's exact test.

Results: From 834 SLNB, we identified 75 (9%) patients who met Z0011 eligibility criteria. The Z0011 cohort (n=891) contained more T1 tumours (p=0.0001) and used less adjuvant systemic therapy (p=0.0001) but no other significant differences were noted in either patient or tumour characteristics. Micrometastasis were found in 45% and 27% of Z0011 and RMH patients respectively (p=0.005) but there was no significant difference in the proportion with additional positive nodes on cALND (23% v 33%, p=0.08).

Conclusions: Fewer than 10% of RMH SLNB patients matched the Z0011 cohort, in addition a greater proportion had macrometastases. Consequently the Z0011 results will only support a change of practice for the minority of SLNB positive patients.

P31. Cavity clips following CLE in breast cancer - Does size matter?

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Background: Cavity clips are used in conservative breast surgery to mark the tumour bed and plan subsequent adjuvant Radiotherapy field. The general consensus is to mark the cavity with 5 clips corresponding to the deep margin and the 4 quadrants. Cavity clips can cause significant acoustic shadowing on ultrasound and may hinder using this technique in evaluating possible recurrences. The aim of our study is to evaluate the various clips used in clinical practice.

Methods: We use Titanium clips (LIGACLIP EXTRA) with non-disposable clip applicator which come in 3 sizes. Some surgeons use disposable single use Titanium clips and applicator. We applied the 3 different sizes of clips to a 3 pieces of Turkey breast wrapped in cling film and compared them in terms of acoustic shadowing and CT appearances for Radiotherapy field marking. We used following sizes:

- SmallLT100
- Medium LT300
- Large LT400

3 pieces of Turkey breast were used to apply each of the above clips.

Results: The single use clip applicator is more expensive than the reusable applicator and clips (£4 Vs £12). Both medium and large clips produce more acoustic shadowing that the small clips. CT scan of the 3 breasts with the different clips show similar localization characteristics and no perceived advantage of using the larger clips.

Conclusion: Small Titanium clips seem to be sufficient for pre-operative field marking for adjuvant Radiotherapy in breast cancer. They also produce less acoustic artefact on Ultrasound than the larger clips hence allowing for accurate ultrasonic assessment.

P32. A new technique for partial muscular cover in immediate implant-based reconstruction

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Introduction: To determine efficacy, safety, aesthetic and functional outcomes after immediate breast reconstruction using a segmented lateral thoracic artery-based pectoralis major muscle flap for partial dual-plane cover of implants. This technique was designed to minimize lateral implant displacement, provide complete separation of the wound / incision from the implant and a vascularised base for the NAC if needed.

Methods: A new technique using a partial pectoralis muscle flap (based on the lateral thoracic artery) for partial cover of implants in patients undergoing immediate reconstruction after skin (or nipple)-sparing mastectomy for breast cancer is described. A prospectively designed pilot study in consecutive patients suitable for implant-only immediate reconstruction was undertaken. Patient demographics, tumour pathology and treatments factors were documented. All outcomes including implant infection, flap necrosis and any other complications were included as well as patient satisfaction and functional outcomes.

Results: From April 2008 to November 2010 a total of 45 procedures were performed in 39 patients (6 bilateral). Mean age was 43 years (29 - 71) and no early implant loss or infection was encountered. Three patients experienced prolonged seroma formation (>3 months) and had their implants exchanged resulting in seroma resolution. Seven patients underwent post-mastectomy radiotherapy. Post-operative functional assessments on pectoral girdle function is described. Patient satisfaction ranged from moderately to very high in all patients.

Conclusions: This technique is safe and well-tolerated by patients and may serve as an adjunct or alternative to the use of Alloderm or other methods of immediate implant reconstruction using partial muscular cover.

P33. A study of oncoplastic breast reconstruction by a general surgery breast unit

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Aims: To investigate the outcomes of oncoplastic breast reconstruction performed by consultant breast surgeons from a general surgery background in a district general hospital.

Methods: A retrospective study of 45 patients who underwent breast reconstruction from 2002 to 2010 was performed. Patient notes, histology database and theatre records were consulted.

Results: Of 45 patients all were female and the mean age was 50 years old (range 35 to 68). 5 patients were current smokers and 1 patient was diabetic. 42 patients had pedicled latissimus dorsi reconstruction and 3 patients had pedicled transverse rectus abdominis myocutaneous reconstruction. 22 were immediate reconstruction, 19 were delayed and 4 were prophylactic mastectomy with reconstruction. Mean post operative stay was 4 days (range 2 to 6). Pathology showed ductal carcinoma in 27 cases, DCIS in 13 cases and normal tissue in 5 cases. No patients required return to theatre for complications. No patients suffered partial or total loss of flap. 3 patients developed wound infection (2 of whom were smokers). 8 patients developed seroma at 2 weeks post operatively. 4 patients developed small areas of superficial necrosis (which was managed conservatively). 9 patients had balancing mastopexy at a mean of 9 month following their reconstruction. 17 patients went on to have a nipple reconstruction.

Conclusions: Oncoplastic breast reconstruction is a safe procedure for breast surgeons to perform in general surgery with good results. Smoking and diabetes are associated with a higher incidence of complications.

P34. Immediate Nipple Reconstruction with Skin-sparing Mastectomy and Sub-pectoral Tissue Expansion

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Introduction: In selected patients, skin-sparing therapeutic mastectomy with preservation of the nipple areola complex (NAC) can be

achieved without compromising oncological safety. However, for the majority of patients requiring therapeutic skin-sparing mastectomies the NAC is removed and then reconstructed at a later date. We present a simple and effective technique for immediate nipple reconstruction after skin-sparing mastectomy and placement of a sub-pectoral tissue expander.

Methods: The technique was used on a single patient requiring a right completion mastectomy and left risk-reducing mastectomy. Preoperatively, bilateral transverse elliptical incisions were marked with the patient in the upright position. Local tissue asymmetric trefoil flaps were marked out on the supero-medial areola skin for the nipple reconstructions. The operations continued by excising all breast tissue together with the skin ellipses and remainder of the NAC. Sub-pectoral pockets were then fashioned and tissue expanders sited with complete muscle coverage. The tissue expanders were partially expanded and the skin closed by incorporating the newly reconstructed nipples.

Results: There were no immediate complications. The patient was reviewed 22 days, 33 days, 10 weeks and 16 weeks post-operatively with full tissue expansion achieved at the 10 week interval. At all stages, the cosmetic outcome was reported as excellent and the nipple reconstructions were appropriately positioned.

Conclusion: Immediate nipple reconstruction after skin-sparing mastectomy is technically feasible and can give excellent cosmetic results. Despite the promising outcome in a single patient, the consistency of aesthetic results must be determined by reproducing the technique in a series of patients.

P35. To shave or not to shave? The role of cavity shaving in Breast Conservation

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Introduction: Cavity shaving has been advocated as a method of measuring margin status[1]and improving complete excision rates[2]

Method: A retrospective analysis of the histology and further surgery required for 40 consecutive patients who underwent breast conserving surgery (BCS) for malignant disease at UCLH over a 2 year period.

Results: 29 of the 40 patients had cavity shaves as part of their BCS.

Table 1
Patients who underwent breast conserving surgery with cavity shave

Margin Status	Number of Patients	Cavity Shave Clear	Cavity Shave Involved	Further Procedure Required
Margin Clear (≥1 mm)	6	6	0	0
Margin Close (<1mm)	11	8 (73%)	3 (27%)	3 (27%)
Margin Involved	12	8 (67%)	4 (33%)	4 (33%)

The remaining 11 patients had BCS without cavity shaves.

Table 2
Patients who underwent breast conserving surgery without cavity shave

Margin Status	Number of Patients	Further Procedure Required
Margin Clear (≥1 mm)	3	0
Margin Close (<1mm)	4	3 (75%)
Margin Involved	4	4 (100%)

Overall 9 (22.5%) patients had clear margins on their main specimen. A further 16 patients had clear margins on their cavity shaves. This increased the number of histologically complete excisions to 25 patients (62%) overall and 22 (76%) in the group who had cavity shaves.

Conclusions: Cavity shaves performed at the time of BCS minimise tissue loss and allow confirmation of microscopic clearance of the margins. The incorporation of this technique into BCS protocols reduces the rate of reoperation whilst adhering to oncoplastic principles.

(1) Malik HZ et al, Margin assessment by cavity shaving after breast-conserving surgery: analysis and follow-up of 543 patients European Journal of Surgical Oncology 1999;25(5):464-9
(2) KobbermannA et al, Impact of Routine Cavity Shave Margins on Breast Cancer Re-excision Rates Annals of Surgical Oncology 2010 Nov 3

P36. Therapeutic Mammoplasty as an Alternative to Mastectomy in Selected Patients

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Introduction: Therapeutic mammoplasty (TM) is becoming increasingly popular for excision of breast tumours, being particularly suited to large breasted women. It avoids the need for mastectomy for tumours normally considered to be in a cosmetically unacceptable position or too large for wide local excision.

Method: All TMs performed in our unit between 2007 to present were reviewed. We considered a number of factors including length of hospital stay, need for further surgery and any delay to adjuvant therapy.

Results: 21 patients underwent TM, the average age being 57 (range 29-70). The median length of hospital stay was 3 days. 3 of the 21 patients required a re-excision, 2 of these in the form of mastectomy. Of the 19 patients adequately treated with TM, 10 opted to undergo a contralateral breast reduction with an average waiting time between the two operations being 9.5 months (range 0 -19). The median number of days from surgery to adjuvant therapy (either radiotherapy of chemotherapy) was 49 (range 31-80). One patient required a return to theatre for evacuation of haematoma. There have been no recurrences to date.

Conclusion: This audit demonstrated that TM is a feasible option and can avoid the need for mastectomy for selected patients. Concerns regarding inadequate excision or delay of adjuvant therapy are unfounded in this audit. As a result, our unit advocates TM for selected cases. In order to promote awareness we have developed a website designed for both the public and healthcare professionals which can be found at www.therapeuticmammoplasty.com

P37. Mass in a Reconstructed Breast, a Diagnostic Dilemma: Epidermal Inclusion Cyst after Breast Reconstruction using Latissimus Dorsi Flap

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Epidermal inclusion cysts rarely occur in the breast, but when they do, specifically in a reconstructed breast they can pose a diagnostic dilemma.

We present a case of a 51 year old woman who developed a small cyst in her left reconstructed breast one year after surgery. Initial investigations showed no suspicion of malignancy, therefore the lesion was monitored. During the subsequent 4 years the lesion progressed in size. All investigations were repeated throughout this duration and again failed to reveal any malignancy. MRI imaging, however showed progressive loss of the well defined lesion into more diffuse reaction leaving us with a diagnostic dilemma. Subsequently, a multidisciplinary decision was taken to explore

this. Intra operatively a cystic lesion was identified and excised. Histology revealed fragments of an epidermal inclusion cyst.

In conclusion, this case illustrates a rare benign cause that may mimic a recurrence. It highlights the importance of meticulous de-epithelisation of skin paddles in order to avoid development of lesions such as epidermal inclusion cysts. Such masses presenting following breast reconstruction can cause significant anxiety to patients and pose diagnostic dilemmas.

P38. Management of partial breast defects for breast conservative surgery (bcs)

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Introduction: Breast conservative surgery (bcs) through wide local excision is an established technique for managing breast cancer. However, significant loss, nipple areola distortion and skin tethering can lead to unsatisfactory aesthetic outcomes. We present our experience of strategies to manage these deformities.

Material and Methods: Forty five patients were managed during the last 3 and a half years. Age range 27-73 years. The reconstructive techniques were categorized as autologous tissue transfer including thoracodorsal artery perforator flap (tap flap), intercostal artery perforator flap (icap flap), muscle sparing ld myocutaneous flap, free microvascular autologous tissue transfer, implant based, injectables and therapeutic mammoplasty. The quadrants deformities were as follows: lateral, medial, upper poles, lower poles and central.

Results: Satisfactory aesthetic results were achieved in all patients. All flaps showed complete survival, one superficial epidermolysis, one partial full thickness nipple areola complex necrosis and one infection.

Conclusion: Breast conservative surgery can result in an unacceptable aesthetic outcome. Each deformity must be assessed on an individual basis and the availability of a range of reliable techniques could allow optimal results to be achieved. However, the supreme aim is anticipating the possibility of these deformities which could be avoided using therapeutic mammoplasty.

P39. The Call for a More Formalised "Buddy" System; An Audit of the Breast Cancer Onoplastic Service at Frenchay Hospital

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Introduction: A guide to good practice for oncoplastic breast surgery was published in EJSO in 2007. Guidance was given to ensure that each patient has adequate time to make an informed decision; is supported by a specialist nurse; views a range of educational materials and discusses perceived risks and benefits. Although no evidence was referenced, women should have an opportunity to meet other patients, 'buddy'.

Methods: To ensure these standards are met, 60 written questionnaires were sent to breast reconstruction patients.

Results: 37 questionnaires were returned. 86% of patients had enough time to make an informed decision, 76% were aware of the complications, 95% were glad they had had a reconstruction while 70% were happy with their new breast. Although 70% thought they had had the correct reconstructive option, 30% were either uncertain or wished they had an alternative procedure. Patients used a variety of information tools. Most relied on their surgeon, specialist nurse and information sheets. 19% had access to a 'buddy' but 70% would have used this option if it had been available, 81% would be willing to speak to other patients about their experiences.

Conclusion: Patients who require a breast reconstruction at Frenchay are given good access to information and time to consider their reconstructive options. However, we need to improve our discussion about alternative operations and access to a 'buddy' more easily available. With many patients keen to give support/information, units offering a reconstruction service should be aware of ease of access to 'buddy patients'.

P40. Experience of Autologous Fat Transfer in a Single Breast Unit - First 100 cases

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Introduction: Autologous Fat Transfer (AFT) is an important tool in breast reconstruction. We report our experience of our first 100 cases

Methods: A prospective database was kept of all patients treated with AFT to the breast. We recorded demographics, indications for surgery, volumes of fat harvested and injected, number of sessions required, other procedures performed (eg contralateral mastopexy or nipple reconstruction) and complications. A photographic record or the pre and post-operative results was kept. Fat was harvested, processed and injected using the method described by Coleman.

Results: 160 procedures have been carried out on 100 patients. The indications for surgery were: congenital breast assymetry 6 patients; breast conserving surgery defects 13; revision of previous reconstruction or complications thereof 40; planned improvement of autologous latissimus dorsi reconstruction 32. The number of procedures ranged from 1 to 4. 61 patients had a second surgical procedure performed at the time of their first AFT. 69 patients have completed their surgery and are satisfied with the result. There have been no major complications. 2 patients had small donor site defects. The volume of fat injected ranged from 33 - 632 mls (mean 159). 32 patients have had breast imaging since AFT, 2 MRI, 30 mammograms and/or USS. Fat necrosis or oil cysts were identified in 9 patients. None has required a biopsy. One patient has died of metastatic breast cancer, another has metastases. No local recurrences have been reported.

Conclusion: AFT appears to be a safe and effective method of improving breast reconstructions.

P41. The use of Adipose Derived Regenerative Cell (ADRC) enhanced fat grafting in reconstructive breast surgery

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Introduction: Fat grafting is becoming an acceptable and promising tool in aesthetic and reconstructive breast surgery. Success depends on fat retention and development of supportive stroma. Adipose tissue derived regenerative cells are known to differentiate into replacement stroma, promote angiogenesis and favors healing over scarring. This study reviews our use of ADRC enhanced fat grafting in the correction breast contour defects following cancer treatment and in benign conditions including implant complications.

Methods: A prospective study was conducted from September 2008 until July 2010. All patients undergoing ADRC enhanced grafting were included. Along with procedural details and outcome, patient satisfaction was also recorded.

Results: A total of 20 patients were included in the study. Indications for grafting included 8 patients following breast conserving surgery, 8 patients as an adjunct to breast reconstruction, and 4 patients with benign conditions including congenital hypoplasia and implant related complications. The graft volume ranged from 140 to 420 ml. 17 (85%) of patients reported good to excellent results at 9 months follow up. Mild fat re-absorption was seen in 2 patients.

Conclusion: ADRC enhanced fat grafting is a useful addition to the reconstructive breast surgeon's armamentarium. Its indications for use are

expanding from simple volume replacement to the treatment of benign breast conditions and post-operative complications. We have shown that it is simple and safe to perform with low morbidity and high patient satisfaction.

P42. High body mass index should not exclude women from undergoing immediate breast reconstruction

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Introduction: Recent guidelines have acknowledged that women with breast cancer should be offered reconstructive surgery at the time of the initial diagnosis. Tumour characteristics or the need for adjuvant therapy often dictate which options are discussed, but some units use high body mass index (BMI) as a contraindication to offering immediate breast reconstruction. Literature is sparse on whether this group experiences higher complications. This study aimed to assess the rate of complications in women with a high BMI who underwent immediate breast reconstruction.

Methods: We performed a retrospective review of a prospectively maintained database on all women undergoing immediate breast reconstruction in 2009 and 2010. All women with a primary diagnosis of breast cancer and a BMI > 28 were included. Demographics, co-morbidities, rate of complications, adjuvant therapy and outcome data were collected.

Results: Thirty-eight women with BMI > 28 underwent immediate breast reconstruction. The majority of women (63%) underwent skin-reducing mastectomies with fixed volume implants or tissue-expanders, but 20% women underwent breast remodelling surgery. Two-thirds of women had contralateral surgery for therapeutic purposes, risk-reduction or symmetrisation. No woman experienced loss of the reconstructed breast. Two women (5%) developed minor haematomas, two (5%) developed wound problems (managed non-operatively) and 6 (16%) developed seromas. Eleven women (29%) have received radiotherapy and short term rates for capsular contracture are low. Follow-up ranges from 1 to 22 months and is ongoing.

Conclusion: Women with a high body mass index should not be precluded from immediate breast reconstruction as major complication rates are low.

P43. Oncoplastic surgical techniques can reduce the need for mastectomy for periareolar tumours of the breast

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Introduction: The presence of breast cancer near the nipple has traditionally been viewed as a reason for mastectomy in order to obtain oncological clearance and prevent subsequent deformity. Oncoplastic techniques following breast conserving surgery including excision of the nipple-areola complex can avoid mastectomy and achieve good cosmetic outcome. The aim of this study was to present the various oncoplastic techniques that were adopted for periareolar tumours in our unit and also assess the oncological and cosmetic outcomes of these patients.

Methods: We identified women who underwent breast conservation surgery including excision of nipple-areola complex between 2004 and 2010 from a prospectively maintained database. All women received adjuvant therapy according to local protocol. Data was collected on demographics, co-morbidities, surgical techniques and oncological outcome. Patient satisfaction was also assessed.

Results: Seven women were eligible for inclusion. Oncoplastic techniques included local advancement flap, mini-latissimus dorsi flap and therapeutic mammoplasty. Histological excision was complete in all women. One woman underwent immediate full thickness nipple-areolar graft with loss of nipple but successful areolar grafting and two women underwent delayed nipple reconstruction. No patients developed local or distant recurrence during follow-up ranging from 3 to 84 months. All women reported high levels of satisfaction at their cosmetic outcomes.

Conclusion: Various oncoplastic breast conserving surgical techniques can be performed for periareolar tumours. In our experience these techniques avoided mastectomy and achieved good cosmetic outcome without any increase in locoregional recurrence. Ongoing follow up is required to monitor long term oncological and cosmetic outcomes.

P44. Keeping Abreast of Surgical Site Infection - Audit and Re-Audit at a Single Breast Unit over a Five Year Period

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Introduction: In 2005, we designed a post-operative integrated pathway of care (IPOC) to record post-operative complications in patients having breast surgery. A review of 136 IPOCs showed 15 infections (11%). A literature review revealed few papers with varying definitions of Surgical Site infection (SSI) following breast surgery. Studies showed infection rates ranging from 4% to 19%. No national guideline or audit standard existed for SSI. More recently, the National Mastectomy and Breast Reconstruction (NMBR) audit showed that 20% mastectomy patients and 25% reconstruction patients received antibiotics for confirmed or presumed post-operative infection.

Methods: Each year from 2006 to 2010, the case notes of all breast surgery patients operated in January were reviewed to record SSI. We set our audit standard at 10% based on available evidence. Audit results were presented yearly and changes made to our practice following discussion with colleagues in microbiology. These changes were:

1. June 2006 Octenisan wash given pre-op
2. May 2007 Antibiotic prophylaxis with Augmentin 1.2g at induction of anaesthesia
3. July 2008 Antibiotic prophylaxis with Flucloxacillin 1g IV at induction of anaesthesia
4. January 2010 one surgeon stopped using drains

	January 2006	January 2007	January 2008	January 2009	January 2010
	N = 34	N = 41	N = 42	N = 36	N = 44
Infection (proven or suspected)	7 (20.6%)	7 (17.1%)	6 (14.3%)	6 (16.7%)	3 (6.8%)
Infection proven on wound swab	5 (14.7%)	1 (2.4%)	2 (4.8%)	0 (0%)	0 (0%)

Conclusions: We have learnt from our audit results, made changes and re-audited to reduce SSI. Our results compare favourably with data from the NMBR audit.

P45. One breast unit's experience of re-excision rates and specimen weights in patients undergoing wide local excision when operated on by Oncoplastic Breast Surgeons and General Surgeons with an interest in breast disease

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Introduction: Oncoplastic Breast Surgeons and General Surgeons with an interest in breast surgery both operate on breast carcinomas in the UK. This study investigates whether there is a difference between the 2 groups in terms of specimen weight and re-excision rate following wide local excisions (WLE).

Method: All WLE cases for 2 general surgeons and 2 oncoplastic surgeons within one unit were examined for 6 consecutive months each. Re-excision following WLE was performed if margins of less than 2mm

of normal breast tissue were found. Data on type of carcinoma, size of margin, weight of specimen and patient demographics were extracted from pathology records. The two groups were compared statistically using the Chi Squared tool (re-excision rate) and unpaired t-test (mean specimen weight). A p-value of <0.05 was chosen for statistical significance.

Results: For group 1 (General Surgeons), n=108 and group 2 (Oncoplastic Breast Surgeons) n=91. Re-excision rates were not statistically different at 11% in group 1 and 15% in group 2 (p=0.404). Giving an Odds Ratio of 1.45 (95% CI 0.64 to 3.27). Mean specimen weight for group 1 was 65.7g (95% CI 55.7g to 75.7g) and 46.9g for group 2 (95% CI 40.7g to 53.1g) ($p = 0.0018$). The mean difference in weight was 18.8g (95% CI 7.2g to 30.5g).

Conclusion: These results show that whilst there was no difference in the re-excision rate following WLE, there was a significant reduction in WLE mean specimen weight when operated on by Oncoplastic Breast Surgeons within the unit.

P46. A Randomised Controlled Trial to evaluate the role of Tisseel, a fibrin sealant on seroma formation in Latissimus dorsi breast reconstruction

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Introduction: Seromas are common complications following LDBR, reported in the NMBR audit. Level I clinical evidence supports 'fixation' of the back skin flaps by quilting sutures (Daltrey I BJS 2006; 93(7): 825). Fibrin sealants (Tisseel) have been postulated in this role, but without the performance of a Randomised Controlled Trial (RCT). The aim of this RCT was to compare Tisseel against Control (no Tisseel) on the incidence of seromas after LDBR.

Methods: 106 women were randomised to Control (52) or Tisseel (54), with 15 exclusions (7, 8 respectively). 45 LD and implants (LDI), 23 extended LD flaps (ELD) and 23 ELD with implant (ELDI) were performed. 87 had immediate, and 4 patients had delayed reconstructions. Intra-operative drains were placed to the breast, axilla and donor site (x two). Primary outcome measures were the volumes of all site seromas and the frequency of post-drain donor site aspirations.

Results: Tisseel significantly reduced the mean total drain volume from 2170ml to 1919ml (P=0.05, Mann-Whitney) within 7-10 days. There were no differences between the numbers, or volume of patient reported seromas aspirated post-drain removal between the two groups, with a mean number of 4 aspirations in the Control (0-13), versus 9 aspirations (0-11) in the Tisseel group (Pearson Chi-Square test).

Conclusion: Tisseel may reduce the 'early' effects of seroma development, but has not shown any significant role in minimising the potential for 'shearing' of the donor site flaps causing later seroma formation. Current evidence recommends quilting sutures as the gold-standard in reducing this complication.

P47. A systematic review of Patient Reported Outcome Measures (PROMS) and clinical outcome reporting in Breast Reconstruction

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Background: Increasing clinical effectiveness of breast reconstruction (BRR) and international standards are evident by the DoH's commitment to integrate PROMS across the NHS and to standardise clinician-reported outcomes. The NMBR audit has reported higher than expected levels of complications. Our aim was to analyse the reporting of complications in a systematic review (SR) of all studies that were primarily focused on PROMS following all BRRs since 1978.

Methods: In this SR, 32 studies fulfilling methodological criteria for PROMS reporting were further analysed (Winters ZE Annals of Surg. 2010;252(6): 929).

Results: These comprised 2 RCTs, 10 prospective longitudinal studies (PLS) and 20 retrospective studies (total of 3123 patients). The types of BRR were recorded in 71% of women, with implants in a mean of 32%, LD flaps in 9%, and abdominal flaps in 59%. Only 6 studies (19%) recorded complications, with 82% reporting no complications. Only 3 studies reported the numbers of individual complications in a total of 44 patients (1.4%) of which 45% of these were graded as minor and 55% as major. None of the PLS defined the types and levels of complications 'a priori', with no stratification by age, BMI, smoking and diabetes.

Conclusions: There is a lack of cognisance as to the importance of complications in relation to HRQL and patient satisfaction. There is a need to increase the standards of clinical outcome reporting in BRR. This together with standardised PROMS reporting will consolidate the clinical evidence in the field on which decision-making can be based.

P48. One-stage breast reconstruction using Strattice™ reconstructive tissue matrix

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Introduction: Strattice is a sterile reconstructive tissue matrix derived from porcine dermis. We describe our initial experience of a 'direct to implant' one-stage immediate breast reconstruction technique, using Strattice in combination with a permanent silicone gel or one-stage silicone/saline implant.

Methods: Results of 37 reconstructions in our first 23 patients (14 bilateral) during 2009/2010 with a minimum follow-up of 6 months were reviewed. Patient demographics, co-morbidities, in-patient stay, implant type, number of expansions, seroma drainage, complications, implant loss and need for further surgery were analysed.

Results: The mean age was 45yrs; 2 carried notable co-morbidities. 23 expandable and 14 fixed-size implants were used. Median post-operative stay, and days with drain, were 4 nights (range: 2-14) and 16 days (range: 6-21) respectively. 5 patients required seroma drainage post-op (range: 1 to 4 drainages). 7 reconstructions had wound-healing problems, 4 requiring wound debridement (11%) and 2 associated with implant loss (5%). 52% of the expandable implants were inflated post-operatively (median 1 expansion). Subsequent surgery was performed in 15 reconstructions (8 patients); 7 for removal of ports, 2 for removal of implant, 4 for wound debridement, and 2 for exchange of expander implant for silicone gel implant.

Conclusions: Strattice facilitates mastectomy with definitive breast reconstruction at a single operation. Our results indicate the technique to be a robust alternative to tissue expansion followed by exchange of implant. Planned cost-comparison analysis will ascertain if it is economically favourable.

P49. Is Ultrasound alone adequate to diagnose breast cancer in patients under 40 years of age? Implications of recent guidelines on clinical practice

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Aim: Recent guidelines suggest that ultrasound should be adopted as the primary imaging modality in women under 40 years of age, mammography being offered if further imaging were warranted. This study aims to assess the adequacy of ultrasound and the role of mammography in this

patient group, by reviewing the role these imaging techniques had on the diagnosis of breast cancer in our unit.

Methods: We reviewed all breast cancers diagnosed in patients 39 years or younger from Jan 2009-to present. This was a retrospective review of presentation, clinical findings, imaging modality (ultrasound, mammography, MRI) and histology. Mammography was the primary imaging modality during the study period. We have included both invasive and intraductal carcinoma but excluded lobular carcinoma in situ.

Results: 764 patients were referred to the symptomatic breast clinic in this age group during the study period. 16 women were identified with either invasive cancer (14) or ductal carcinoma-in-situ (DCIS) (2). Fourteen patients underwent mammography, graded as uncertain, suspicious or malignant. Of these all had ultrasounds reported as uncertain, suspicious or malignant, an indication for diagnostic core biopsy. Ultrasound alone did not miss any cancers but did fail to detect multifocal disease in one patient.

Conclusion: Ultrasound alone is safe in the majority of patients in this age group as the primary imaging. Mammography could be offered only to patients with uncertain or positive findings on ultrasound. Our current practice is primary ultrasound where imaging is indicated, with further imaging based on this and/or core biopsy result.

P50. Wire localisation: Bullseye Target?

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Introduction: The NHS Breast Screening Programme Quality Assurance Guidelines require 95% of marker wires to pass within 10mm of the target lesion. Our experience in a District General Hospital has reflected previous research from a tertiary centre demonstrating far greater accuracy of localisation. This retrospective study therefore assessed accuracy of wire localisation for women undergoing wide local excision of impalpable breast lesions.

Methods: All women undergoing localisation procedures between October 2008 and September 2009 were identified from the Clinical Research Information System (CRIS). Data was collected from case notes and electronic records and all mammograms and specimen films re-assessed by a consultant radiologist. Data was analysed using Microsoft Excel.

Results: 117 localisation procedures were identified. After exclusions (22 skin marker only, 6 bracketing wires, 3 missing check films, 1 US check) 85 wire placements were assessed with target lesions measuring 5.5 to 30mm. 72 (85%) passed through the target, 9 (11%) were within 5mm, 3 (3%) within 10mm and 1 (1%) was 40mm away (a deep-seated lesion which could not be identified on stereotactic x-ray machine). 99% of localisation wires met the NHSBSP target of 10mm.

Conclusions: This study confirms that the published target is easily achieved in smaller units and the authors concur with previous suggestions that the target should be made more stringent. This could be through determination of wire tip position (currently not a requirement of the guideline) or through adjusting the standard from 95 % within 10mm to 95% within 5mm of the lesion.

P51. Performance of Clinical Breast Examination of a Breast Care Nurse

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Introduction: Breast units have recently employed clinical nurse specialist to review symptomatic breast patients to overcome the 'two-week rule' workload. We aim to compare the clinical breast exam (CBE) performances of a breast care nurse (BCN) and an experienced consultant breast surgeon. We also explored the effects of patient age on CBE performance.

Method: Consultant and BCN performed CBE on symptomatic breast patients and graded their findings as benign, suspicious or malignant. Their results were compared against the final diagnosis after the triple assessment.

Results: In early 2009, 191 patients verbally consented to participate. There were 165 benign and 26 malignant breast lumps. Concordance rate was poor at 0.64. Consultant graded lumps as benign 40% more frequently than the BCN (161 vs. 115 cases). The BCN graded lumps as suspicious five times more frequently than consultant (14 vs. 71 cases). For the consultant and BCN, their CBE sensitivities were 84.6% and 88.5% respectively, specificities were 95.8% and 66.9% respectively and overall accuracy 94.2% and 69.1% respectively. Both sensitivities were lowest at 66.7% in the <45-year age group but this improved to 80-100% in the older age groups. The consultant maintained high specificities (88.7% to 100.0%) in all age groups. The BCN specificity decreased from 80.5% to 58.3% from the <45-year to the >60-year age group.

Discussion: The consultant's CBE accuracy was higher than that of the BCN. The BCN tended to 'overgrade' lumps as suspicious especially in the older patients. Malignant lumps were generally harder to grade in younger patients.

P52. Awareness of, access to and acceptance of breast screening by Maori vs. non-Maori women in the BreastScreen Midlands area of New Zealand

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Introduction: The Midlands region of BreastScreen Aotearoa (BSA) covers a large and diverse area of the North Island comprising 3 District Health Boards and has the largest proportion of Maori in New Zealand (23 - 35%). It is known that Maori women have a 71% higher mortality rate. They also have a tendency towards larger, higher grade tumours with more positive lymph nodes, but are under-represented in BSA.

Methods: Data was taken from the BreastScreen Midlands (BSM) database. Data is collected prospectively for all women.

Results: Maori women are under-represented in all areas of breast screen in our region. They are less likely to enrol, less likely to attend a screening session (41% vs. 62%), less likely to accept treatment (57.7% vs 71.2% receive their first surgical treatment within 20 working days of diagnosis) and are less likely to receive adjuvant treatments than non-Maori.

Conclusions: Maori women are under-represented in BSM. Reasons for this include lack of awareness (only 43% nationally are aware of the provision of breast screening) and barriers to care (cost of care, communication, structural barriers and cultural fit). BSM has introduced a number of strategies to try to reduce these disparities

P53. The Sloane Project - five-year follow-up results

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Introduction: Relatively little is known about the natural history, invasive potential and optimal treatment of DCIS. Several clinical trials have produced conflicting results.

Method: All cases of DCIS submitted to the Sloane Project are followed up and details of ipsilateral local recurrences, contra-lateral disease, metastases and death are collected. In 2010 Breast Screening QA Reference Centres assisted the Sloane Project team in collecting follow-up data from their participating screening services from the first two years of the project (2003/04 and 2004/05).

Results: Complete follow-up data have been received for 1768 (70%) of the 2523 cases (minimum of five years follow-up). 40 local recurrences (20 [50%] invasive, 17 [43%] non-invasive and 3 unknown type), 33 cases with contra-lateral disease, 2 cases with bilateral disease and 5 cases with distant metastases have been recorded as the first event following the initial primary tumour. 114 cases (4.5%) are known to have died; 11 from breast cancer. Details of the radiological and pathological features of and the treatment provided to the cases that did and did not recur within the 5-year follow up period will be presented.

Conclusion: There is wide variation in the management of the DCIS cases submitted to the Sloane Project. Sloane Project outcome data should eventually provide conclusive information on which treatments are optimal for tumours with differing radiological and pathological features. However, other studies into DCIS indicate that long-term follow-up (i.e. over 10 years) is required to ensure that the majority of recurrences and contra-lateral disease are identified.

P54. Extending the lower age in the NHS Breast Screening Program: How will it affect our workload?

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Introduction: The Cancer Reform Strategy recommended age extension in the Breast Screening Programme (NHSBSP) to 47-73 years by 2012. Nationally, it was decided to randomise screening batches to call either the 47-49 or the 71-73 age band. The Gateshead BSP's call system is incompatible with this randomisation therefore is uniquely starting the call of 47-49 year old women from April 2010. The first eight months of this implementation is analysed. The aim of this study is to determine the projected surgical workload when all 47-49s are included in 2012.

Methods: Compliance and cancer detection rates for April to November 2010 inclusive were extracted from the Screening database. Projected workload for 2012 for the full younger age extension is estimated.

Results: The 47-49 group had a compliance rate of 72%, compared to 78% in the 50+ group. Cancer detection rate was 6.8 per 1000 women screened, compared to 10.3 and 7.3 in the 50-52 and $\geq$53 age groups respectively. The North East Family Health Authority Statistics project 25,511 women who are 47-49 years old will be eligible for screening in 2012, i.e. 8503 invited annually. Using the attendance rate and cancer detection rate from our current data, 41 cancers would be detected annually in this age group; a 15% increase annually from the calculated projected 232 in the 50 - 70 group.

Conclusions: Extending the lower age for breast screening will have a significant effect on the breast surgical workload. We calculate that surgeons will be referred at least 15% more cancers annually.

P55. The Incidence of Malignant Breast Disease on Excision Biopsy Following a Core Biopsy Radial Scar / Complex Sclerosing Lesion

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Introduction: Breast core biopsies that suggest radial scars/complex sclerosing lesions often result in precautionary excision. This study evaluates the incidence of in-situ and invasive malignancy at subsequent excision biopsy.

Methods: All breast core biopsies classed as radial scars/complex sclerosing lesions prompted by screen-detected abnormalities between 2001 and 2007 were identified from the regional breast screening database. Pathology reports and case notes were reviewed. Where malignancy was subsequently identified at excision biopsy, the core biopsy was re-examined to identify any alerting features.

Results: 78 patients with a core biopsy diagnosis of a radial scar/complex sclerosing lesion were identified. 73 (94%) of these biopsies were prompted by mammographic findings equivalent to BIRADS 4 or more. At excision biopsy, 75 of the 78 biopsies were found to have a non-malignant diagnosis. 3 were malignant: 2 cases of DCIS (low and intermediate grade) and 1 case of invasive cancer (grade I tubular cancer). No alerting features suggesting possible malignancy could be detected on re-examination of these core biopsies. In particular, there was no evidence of atypia. The positive predictive value was 4%.

Conculsion: 4% of the radial scar/complex sclerosing lesion core biopsies were subsequently upgraded to malignant disease, a figure lower than other comparable (but smaller) studies. Importantly, this study suggests that the presence of atypia cannot be used to stratify the likelihood of malignancy on excision biopsy. Thus in the absence of our ability to safely stratify this subgroup, the option of an excision biopsy should be discussed with all these patients.

P56. Review of Inconclusive Fine Needle Aspiration Cytology

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Introduction: Fine Needle Aspiration (FNA) cytology is used as part of the triple assessment for breast lesions. We reviewed the outcome of equivocal C3 FNA in our institute.

Methods: A retrospective review of C3 FNA results from January 2006 to June 2010 was obtained. Triple Assessment Scores (range 1-5) of clinical assessment, ultrasound and mammogram scores and final histological diagnosis was reviewed. SPSS 17.0 was utilised with Mann Whitney U $P<0.05$ was deemed significant.

Results: 120 women were included in the review. 101/120 (84.1%) proceeded to a core biopsy with 10/101 (9.9%) requiring subsequent surgical evaluation to establish a diagnosis. 19/120 (15.7%) went direct to surgery following MDT review. Overall 92/120 had benign disease and 28/120 had malignant disease with a pre operative diagnosis rate of 75% for malignant disease. Ultrasound and mammogram scores were higher in cases of malignant disease than benign disease. (Mean 3.31 and 3.00 vs. 2.33 and 1.96 $p<0.05$) Patterns of reporting and correlation with the final histology results will be presented. We will also look at yearly trends.

Conclusion: The majority of patients with C3 cytology have benign disease. Subsequent core biopsies are useful in avoiding unnecessary surgery for patients with benign disease. The pre operative diagnosis rate of malignant disease following C3 cytology was less than the average preoperative diagnosis rate for all breast cancers in our institute (75% compared to 95%). C3 cytology predicts difficulty in obtaining preoperative diagnosis of malignancy. As expected, higher radiological scores were associated with malignant disease.

P57. Incidence of breast cancer in patients with lobular neoplasia identified on breast core biopsy

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Objectives: To determine the incidence of malignancy (DCIS or invasive carcinoma) in patients diagnosed with lobular neoplasia (LN) on core biopsy (CB) of breast lesions by reviewing the literature

Methods: Medline, Embase-database and reference lists were searched to identify and review all English-language articles addressing the management of LN. Studies on mixed breast-pathologies were excluded. In total, 118 publications were included.

Results: Of 1229 LN diagnosed on CB, 789 (64%) underwent surgical excision. 211 (27%) of excised specimens were found to contain cancers. 280 (36%) of the excision specimens were classified as ALH, 241 (31%) as

LCIS, 22 (3%) as pleomorphic LCIS (PLCIS) and 246 (31%) were labelled 'unspecified LN' on the original CB. After surgical excision, 53 (19%) of the ALH, 77 (32%) of LCIS and 9 (41%) of the PLCIS cases contained malignancy. Similarly, 72 (29%) of unspecified LNs were upgraded to malignancy. The higher incidence of malignancy within excision specimens for LCIS and PLCIS when compared to ALH was significant ($P<0.04$, <0.003 respectively); using Mann-Whitney U test. There was no significant difference for the identification of malignancy when the publication years of the contributing studies were compared: i.e. group-I (1999-2003) = 27% (93/348) Vs Group-II (2004-2008) = 26% (118/462), $P>0.23$, using Fisher's test.

Conclusion: 27% of LN-cases diagnosed on CNB were found to contain malignancy following surgical excision. The risk was highest for the pleomorphic variant. We advise all patients diagnosed with LN on CB to undergo surgical excision.

P58. Outcomes for Symptomatic Women with Indeterminate Lesions on Mammogram at a Single District General Hospital

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Introduction: Few studies have looked at the significance of M3 (mammographically indeterminate) lesions in symptomatic populations.

Methods: All M3 lesions in symptomatic women reported over a 2 year period at a single centre were reviewed. Computerised systems were used to identify whether further imaging, cytology/histology or surgery had subsequently been performed. Results of investigations were recorded.

Results: 301 M3 reports were identified (7% of all mammograms performed). Results were available for 299. 143 women had a malignancy excluded through further imaging (repeat mammograms, compression views or ultrasound). 156 women underwent fine needle aspiration and/or core or excision biopsy. 44 women were found to have a malignancy (14.6%).

Conclusion: Indeterminate mammographic results lead to considerable psychological morbidity. Women require evidenced information regarding potential outcomes following an M3 report. The positive predictive value for malignancy of an M3 lesion in our symptomatic population was 14.6%.

P59. Phylloides tumours of the breast - a diagnostic challenge

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Introduction: To assess the accuracy of diagnostic modalities in detecting phylloides tumours of the breast and distinguishing them from benign breast lesions.

Methods: A retrospective review of all phylloides tumours diagnosed in a single unit over a five year period was performed.

Results: 21 patients, median age 22 (17 - 70) years, were included.15 patients had a mammogram and all had an ultrasound scan (8 with benign features, 7 were equivocal and 6 had features suspicious of a phylloides tumour). 20 patients had a needle core biopsy (NCB) performed (one woman opted to proceed straight to surgical excision). Of these 10 showed a fibroadenoma (FA), 7 a benign phylloides and 3 a malignant phylloides tumour. Final histology following surgical excision revealed 17 benign and 4 malignant phylloides tumours. Of the malignant tumours all were considered to be phylloides on USS (2 were thought to be malignant) but two were diagnosed as benign phylloides on NCB. Of the 17 benign phylloides, 9 (53%) were diagnosed as a benign FA on NCB. The majority were thought to be benign (8) or equivocal (7) on USS. 20% of patients who presented with a rapidly growing lump were found to have malignant tumours and 75% of malignant tumours were over 4cm in size at presentation.

Conclusions: Phylloides tumours of the breast are a diagnostic challenge, mimicking benign lesions on radiological investigations and even core biopsy. A low threshold for excising rapidly growing or large supposedly benign lesions is recommended.

P60. Randomised control trial of Breast Tactile Imaging as an assessment tool for diagnosis of breast lumps

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Background: Breast clinical examination (BCE) is an integral part of a triple assessment of breast lumps; however, there is a significant inter-observer variability of clinical findings between health professionals. Breast Tactile Imaging (BTI) allows objective assessment of human breast and retrospective review of examination findings. The primary aim of this study was to investigate whether BTI increases diagnostic accuracy of BCE in young women and men with gynaecomastia. The secondary aim was to evaluate BTI in the training and assessment of surgical trainees.

Methods: It was a single centre, open, randomized controlled trial comparing the use of BTI in addition to BCE, with BCE alone in two parallel groups. The patients enrolled were 130 women (16-35 years old) and 72 men referred with a breast mass between June 2007 and May 2008. They were examined by a consultant surgeon and two surgical trainees. Following verification of BTI diagnostic accuracy against ultrasonography (USS) and pathology results, comparison of diagnostic capabilities of clinicians versus BTI was performed.

Results: BTI identified significantly more breast lumps (93%) then BCE (81%, $p<0.05$). Its diagnostic potential was no different to the USS in identification and size measurement of lumps. On BCE alone, 10% of masses were missed by trainees and 4% by the consultant ($p<0,05$); whereas with BTI, there was no difference in number of lumps identified (kappa = 0.28 vs 0.86; $P < 0.05$).

Conclusion: BTI increased the sensitivity of BCE. It may improve patients' safety and potentially could be utilised in training and assessment.

P61. Breast Needle Core biopsy diagnosis of Papillary Carcinoma-Implications of a B5c categorisation

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Introduction: Papillary carcinoma of the breast may be diagnosed on needle core biopsy but it may be difficult, to decide if the tumour is invasive.

Method: We reviewed 20 core biopsy-diagnosed "B5c" papillary carcinomas from our unit from between 2005 and 2010 in order to further understand the implications of this diagnosis. Findings on needle core biopsy and subsequent histology were correlated to determine the likelihood of invasive malignancy and lymph node metastasis.

Results: Follow-up histology was available for 17 cases. Of these 9 (53%) had a final diagnosis of invasive or likely invasive malignancy. Subsequent diagnoses were invasive papillary carcinoma (3), invasive carcinoma arising on a background of solid papillary carcinoma (3), encapsulated papillary carcinoma (EPC) with foci suspicious of microinvasion / invasion (2), and invasive tubular & lobular carcinoma adjacent to an EPC. Seven cases (41%) had a final diagnosis of in-situ disease, including EPC (4) and papillary ductal carcinoma in-situ (DCIS) (3). One case (6%) had no residual disease at excision. Nodal disease was identified in 4 of the 11 patients who underwent axillary surgery. Three cases had isolated

tumour cells (ITC) only. Macrometastatic disease was identified in a single case, a 70mm invasive papillary carcinoma, with a palpable axillary node.

Conclusion: In summary, there was 53% chance of concurrent invasive malignancy following a core biopsy diagnosis of a "B5c" papillary carcinoma. The likelihood of significant nodal disease was very low. The decision to perform an axillary procedure should be reviewed at MDT.

P62. First Non-contra-lateral Events After 15-year Follow-up of Screen-detected DCIS

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Introduction: The incidence of Ductal Carcinoma in Situ (DCIS) rose rapidly when breast screening started in 1988. Some authorities consider that this represents both over diagnosis and over treatment. We report long-term follow up of DCIS diagnosed in the first 10 years (April 1988 to March 1999) of the West Midlands NHS Breast Screening Programme.

Methods: 840 cases of screen-detected DCIS were recorded on the national breast screening computer system. Following exclusions, and thorough case note and pathology review, 700 cases were available for follow-up.

Results: After a median follow up of 183 months (range 133 to 259 months) 102 (14.6%) first local recurrences were identified; 48% were invasive. A further 8 women presented with metastases. Of those with known original DCIS grade, median time to first local non contra-lateral event was 15 months for non-invasive recurrence and 60 months for invasive recurrence regardless of original DCIS grade. It was 76 months for invasive recurrence from initially high grade DCIS and 131 months for invasive recurrence arising from low / intermediate grade DCIS. Median time for metastasis at first event was 82 months (range 15 to 188 months). In multivariate analysis radiotherapy mitigates.

Conclusion: When evaluated over a long period DCIS is a significant cause of morbidity, suggesting that short-term follow up will miss significant numbers of events, especially invasive local recurrences, and that longer term follow-up is required to capture accurately what happens to patients diagnosed with DCIS.

P63. Are all women treated with an Aromotase Inhibitor managed according to national guidelines for bone health surveillance?

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Introduction: Women who take an aromotase inhibitor (AI) as either primary or adjuvant therapy for breast cancer are known to be at increased risk of osteopenia/osteoporosis. Consequently, guidelines have been set out by a UK Expert Group (2008) on the management of the care of these patients to minimise breast cancer treatment induced bone loss.

Method: This study looked at data retrospectively for a cohort of 150 women diagnosed with breast cancer from December 2008 to September 2009 within the Princess Alexandra Hospital NHS Trust to establish whether patients were being managed as per the guidelines, including DEXA scans, triage into management groups and the role of a dedicated bone health nurse.

Results: The results of the study showed that 77% (37 out of 48) of patients taking an AI received a DEXA scan. Of these, 24 patients received the scan within 6 months of it being prescribed, 3 patients received their scan prior to an AI being prescribed and 2 patients received their scan more that 6 months after the AI was prescribed.

Conclusion: A total of 71% of patients included in the study, were managed as per the national guidelines for breast cancer treatment induced bone loss. The results from this study provide the foundation for a larger study to examine the research question further and obtain a more accurate representation of the care of patients being treated with an AI identifying whether patients are switched from Tamoxifen to an AI at the appropriate time if clinically indicated.

P64. Does anyone follow guidelines? A review of the implementation of the Welsh Breast Cancer Guidance on Adjuvant Endocrine Therapy

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Introduction: The All Wales Guidance for the use of adjuvant endocrine therapy recommends that all post-menopausal women with oestrogen receptor (ER) positive breast cancer should be treated with an aromatase inhibitor (AI), either initially, or after 2-3, or 5 years of tamoxifen.

Methods: The endocrine management of all post-menopausal patients, with ER positive breast cancer operated on within six years, attending our follow-up clinic, between 1st December 2008 and 1st March 2009, was reviewed to assess compliance. The majority of patients were seen by junior members of the Breast Unit, supervised by a permanent Breast Clinician.

Results: 126 of 127 (99%) post-menopausal patients were commenced on an AI. In 1 the potential side effects were considered to outweigh the benefit.Of the 34 post-menopausal patients who had been taking tamoxifen for 2-3 years, 32 (94%) were appropriately switched to exemestane. 2 patients who were not switched at this time are now approaching 5 years of tamoxifen and will be switched to letrozole.Of 26 post-menopausal patients who had been taking tamoxifen for 5 years, 19 (73%) were appropriately switched to letrozole. In 1 the benefit was considered to be small, 4 declined and 2 had previously been intolerant of an AI.

Conclusions: Guidelines can be followed appropriately in large volume follow-up Breast Clinics when junior staff are supervised and simple aide memoires used to reinforce the guidance.

P65. Trastuzumab: Audit to review its use as adjuvant treatment for breast cancer

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Herceptin® is a recombinant monoclonal antibody against the HER2 receptor and is the only FDA-approved targeted agent for treatment of HER2 over-expressing breast cancer. The aim of our retrospective study was to determine the percentage of HER2 positive breast cancer patients who received adjuvant Herceptin® treatment at the University Hospitals of Leicester.

Method: The data was collected on patients who presented with invasive breast cancer between January 2007 and December 2009. Information was obtained using electronic databases and case notes. Final histology of the breast cancer, HER2 receptor status, FISH results, number of patients who received chemotherapy and Herceptin® were recorded and analyzed.

Results: Total of 1596 female patients with breast carcinoma were identified. 203 patients (12.7%) were HER2 positive out of which 147 (72.4%) received chemotherapy. Of these, 141 patients (95.9%) received Herceptin® as adjuvant treatment. Six patients received chemotherapy without Herceptin® as an adjuvant treatment. From these four had advanced disease and two did not tolerate the chemotherapy. Out of the patients who were HER2 positive, 77 (54.6) were also oestrogen receptor positive.

Discussion: Previous studies show that 25% of breast cancers overexpress HER2 receptor. Our study suggests a lower percentage of HER2 positivity (12.7%). Herceptin® has a high level of efficacy in combination with chemotherapy. Our study suggests that the majority (95.9%) of HER2

positive patients, who received chemotherapy at University Hospitals of Leicester are effectively receiving Herceptin®. This study is ongoing and looking at patient subgroup who are HER+ve and unfit for chemotherapy

P66. Post-mastectomy radiotherapy: a picture of current UK practice

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Introduction: There is currently perceived variation regarding indications for post-mastectomy radiotherapy in both invasive and in-situ breast cancer. The aim of this survey was to quantify current practice across the UK.

Methods: A postal questionnaire survey of all consultant breast surgeon members of the ABS was carried out. This aimed to establish indications for post-mastectomy radiotherapy for invasive disease, and additionally attempted to establish the extent to which radiotherapy is utilised following mastectomy for ductal carcinoma in situ (DCIS).

Results: There were 222 responses from 480 questionnaires (46%); 94% reported a unit protocol for post-mastectomy radiotherapy. Indications for radiotherapy in invasive disease were reported as follows:

Indication	Percentage respondents
LVI	66
Tumour Grade	62
Tumour Size	94
In-situ extent	10
Nodes	94
Deep margins	71
Other margins	31

Of the surgeons who stated deep margin was a factor the margin triggering radiotherapy was as follows:

Margin	Percentage respondents
Involved margins only	6
<1mm	67
<2mm	22
<5mm	4
<10mm	1

19% of respondents would consider radiotherapy for patients having mastectomy for pure DCIS.

Conclusions: This is a small study with an incomplete response rate which limits validity. However there appears to be considerable variation in factors triggering the use of post-mastectomy radiotherapy between units, with no clear consensus on definite indications. In addition, there appears to be a small but significant minority (19%) who would consider the use of radiotherapy after mastectomy for DCIS alone.

P67. Can we predict the need for radiotherapy to chest wall preoperatively for the patients undergoing mastectomy?

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Background: In the era of immediate breast reconstruction radiotherapy may have a detrimental effect on the reconstructed breast. Our aim is to devise a pre-operative method to classify patients into low, moderate and high risk to predict the need for radiotherapy following surgery.

Methods: A prospective study undertaken from August 2010 to December 2010. Data on demographics, imaging, histology and adjuvant treatment were collected. Patients were categorised in high risk when tumour size exceeded 5cm on imaging, involvement of multiple lymph nodes, skin involvement or lymphovascular invasion on core biopsy. Moderate group were categorised when grade 3, 2-5cm tumour, possible lymph node involvement, multifocality on imaging, but no lymphovascular invasion on core biopsy. Low risk include widespread DCIS, multifocality on imaging (if tumour <3cm), B5a/c, or Paget's disease.

Results: In total 24 patients were recruited. 6 were patients categorised as high risk, 9 patients categorised as moderate risk and 9 patients identified as low risk. All of the high risk patients received radiotherapy, 44% (4) of patients categorised as moderate risk received radiotherapy and none of the low risk patients received radiotherapy.

Conclusion: Our study demonstrated none of those predicted to be low risk patients needed radiotherapy, and of those requiring radiotherapy more than half were categorised as high risk criteria. By pre-operatively predicting the likelihood of radiotherapy one can avoid the detrimental effects on immediate reconstruction.

P68. Hormonal therapy in Post menopausal receptor positive Breast cancer patients-practices and perceptions

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Introduction: Current evidence and NICE Guidelines suggest using Aromatase inhibitors for post menopausal women with early stage receptor positive breast cancer. Our objective was to find out the perception of available evidence and implementation in the practice.

Methods: A questionnaire comprising 9 questions, were sent to 500 Consultant Breast Surgeons through BASO. Answers were analysed to see logical correlation between related questions.

Results: A total of 296 (59.2%) questionnaires were returned completed. 83.9%, felt that Aromatase inhibitors are better choice than Tamoxifen (Question 1) and 90.6% use Aromatase inhibitors as first line therapy (Question 2). (Answers to these 2 questions show continuity-corrected chi-squared test, p-value p <:001) 59.6% received regular complaints about side effects (Question3), however only 3.9% felt side effects are worse than benefits (Question4). (The continuity-corrected chi-squared test between 2nd and 4th question p-value =:058.) 8.2% have used Aromatase inhibitors with Tamoxifen (Question 5). 4.1% said Aromatase inhibitors can be used for a shorter duration (Question 6). 5.3% think Tamoxifen will be of historical interest only (Question 7). 4.1% said they have to stop because of side effects (Question8) (The continuity-corrected chi-squared test between 3rd and 8th question p-value <:001 Kendall's tc is -.311, giving p < :001) Anastrozole is the commonest (45.9%) single choice, Letrozole (7%) and Exemestane (2%). (Question 9).

Conclusions: Majority (83.9%) agree Aromatase inhibitors are better choice. The responses (intern represent the practice) are not random responses, but has a logical conclusions between related questions.

P69. A comparison of chemotherapy recommendations using Predict and Adjuvant models

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Introduction: Predict is an online prognostication and treatment benefit tool for early breast cancer recently developed in the UK (www.predict.nhs.uk). The aim of this study was to compare chemotherapy recommendations using Predict with those from Adjuvant (www.Adjuvantonline.com) by way of model reclassification.

Methods: Patients treated in the Cambridge Breast Unit are stratified for adjuvant chemotherapy according to predicted 10-year absolute survival benefit, with chemotherapy discussed for an absolute benefit of 3-5% and recommended for an absolute benefit of >5%. Chemotherapy benefit estimates from Predict and Adjuvant! were compared in 200

consecutive patients allowing assessment of reclassification between chemotherapy groups (none, discussed, recommended).

Results: The classification according to chemotherapy recommendation with both models is shown below. There was complete concordance between predictive models in 163 of 200 patients (81.5%) and only 3 patients (1.5%) moved from a chemotherapy recommendation to no chemotherapy. In this cohort a total of 126 patients (63%) would have chemotherapy discussed or recommended using Predict compared to 128 patients (64%) with Adjuvant.

Adjuvant!			**Predict**	
	<3%	3-5%	>5%	Total
<3%	62	8	2	72
3-5%	11	16	5	32
>5%	1	10	85	96
Total	74	34	92	200

Conclusions: Chemotherapy recommendations according to Cambridge Breast Unit guidelines are very similar using Predict and Adjuvant models. This is very reassuring and provides further support that Predict and Adjuvant! provide accurate estimates of survival and treatment benefit in patients with early breast cancer.

P70. Primary Chemo-Radiotherapy for Inflammatory or Locally Advanced Breast Cancer

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Introduction: The best management of inflammatory or large, diffuse breast cancers is uncertain and in particular the place of radiotherapy and/or surgery is not clearly defined.

Methods: A cohort of 123 patients with tumours > 3 cm diameter or T4, was treated between 1989 and 2006. Patients received primary chemotherapy followed by radiotherapy, 40 Gy in15 fractions with a 10 Gy boost. Patients with ER positive tumours received Tamoxifen. Assessment which included core biopsy was carried out 8 weeks post-treatment and surgery was reserved for residual or recurrent disease.

Results: The numbers for each T stage were T2/3: 63, T4b: 31 and T4d: 29. 80 patients had complete response (65%) but 18 patients had inoperable Progressive Disease. 25 patients with residual disease and 12 with subsequent local recurrence had surgery at a mean of 15 months post diagnosis. At 5 years, survival of the two surgical groups was not significantly different compared with patients with complete remission without surgery. HR 1.47 CI. (0.8 - 2.7) p=0.22. In patients with Progressive Disease ER-ve had worse survival. HR 10.5 p=0.026. Of the other 105 cases, there was a non-significant trend for Grade 3 to have worse survival but there was no effect of tumour stage, clinical node status or age. Local recurrence was 11.1% in the surgical group v. 13.7% in non-surgical patients with apparent complete remission.

Conclusion: In patients with a complete response to chemo-radiotherapy for inflammatory or locally advanced breast cancer, surgery can be reserved for local recurrence of disease.

P71. An Audit of Practice: Advanced Breast Cancer Treated Solely with Endocrine Therapy

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Introduction: NICE guidelines state that endocrine therapy is the first line treatment for majority of patients with non-operable ER-positive high risk early invasive, locally advanced and advanced metastatic breast cancer. Outside of randomised controlled trials, there is little data available about the practice of sole endocrine treatment in terms of response rate, toxicity, disease progression, mortality rate and costs in patients. This audit looked at the clinical outcomes of non-operable breast cancer patients treated with primary hormonal treatment.

Methods: This is a retrospective cohort audit of clinical outcomes of breast cancer patients treated solely with hormonal treatment over a period of 5 years. Data is collected from West Midlands Cancer Network and from patients' medical case notes. Adult Co-morbidity Evaluation (ACE)-27 index score was used for chart-based assessment of co-morbidity for these patients. Response evaluation criteria in solid tumours (RECIST) used to assess response to endocrine therapy.

Results: 300 patients were audited. 299 female:1 male. 6% aged < 70 years-old and 94% aged > 70 years-old, of which 72% are aged over 80 years-old. Mean duration of hormonal therapy was 1929.87 days (range 9-5436 days). The overall survival rate was 64%. Mortality rate of 36%, mean length of survival in the mortality group was 899 days (range 9-4053 days).

Conclusions: Majority of patients treated solely with hormonal treatment are over 80 years-old. Most survived whilst on sole hormonal therapy for non-operable breast cancer. Hormonal treatment as sole treatment for breast cancer is well tolerated and is effective in disease control.

P72. Why should mastectomy be an in-patient procedure?

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Introduction: There are clinical practice variations in length of stay for breast surgery across England, ranging from 0.9 to 6.6 days. Limited patient choice for mastectomy; only 27% are offered as day-cases. Pan Birmingham Cancer Network and Kings College Hospital NHS Foundation Trust successfully tested a Breast Day-Case/ 23 Hour Pathway, supported by NHS Improvement.

Methods: A systematic pathway approach was taken applying service improvement methodologies focused on streamlining and shifting the breast in-patient pathway to Day-Case/23 Hours. Capturing the impact on patient experience, outcomes, clinical practice and efficiency. Working on the hypothesis "Why should mastectomy be an in-patient procedure?"

Results: Evidence suggested mastectomy is a short operation, with low post-operative pain, patients can mobilise early, there is no risk of retention or ileus and significant post-operative events are rare. The tested pathway showed re-admission, complication rates to be low. No significant difference in seroma rates if a wound drain was not utilised. Patient satisfaction was high. Pan Birmingham showed, women undergoing mastectomies and other breast cancer surgery had fallen from an average of 5 days to less than 1, saving a Trust an estimated £300,000 a year. The pathway has been endorsed as good practice by the British Association of Day Surgery. Published by NHS Evidence and included as an exemplar CQUIN goal. It is currently spreading across England.

Conclusions: Major Breast Surgery can be safely carried out as a day-case/23hours and should be the default position for breast surgery.

P73. An Audit of Implementation of a Patient Pathway to Facilitate the 23 Hour Breast Care Model

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Background: The NHS Improvement's Cancer Reform Strategy states that reducing length of stay (LOS) improves patient satisfaction and they have piloted a '23 hour Breast Care Model'. In 2009,

according to the Hospital Episode Statistics (HES) data, the Royal Bolton Hospital's mean LOS for breast surgery (excluding reconstruction) was 3.99 days. The national mean was 2.62 days. We implemented change aimed at reducing LOS and prospectively audited LOS and patient satisfaction.

Methods: Our audit standard was the '23 hour Breast Care Model'. All patients undergoing simple mastectomy or breast conserving surgery from 01/08/2010 to 30/11/2010 were included in the audit. During the audit we implemented pre-operative optimisation, nurse-led discharge, open-access dressing clinics and drain-care training for district nurses. Patients received pre-operative information about early discharge and completed a feedback questionnaire at follow-up.

Results: 97 patients were audited. Mean LOS fell by 62%, from 95.8 hours in 2009 to 36.6 hours for the audit period. For the final month of the audit, the mean LOS was 27.5 hours.

64% of patients completed the feedback questionnaire. Patients scored 'overall level of care' on a scale of 1(poor) to 5(excellent). The mean score was 4.70. Mean score increased to 4.92 in November, when mean LOS was shortest.

Conclusions: LOS in breast cancer surgery patients can be markedly reduced without affecting patient satisfaction. It may be that the title of the '23 Hour Breast Model' is too restricting and not appropriate for all hospitals and all patients.

P74. Day case/23 hour breast surgical pathway- A retrospective audit in a district hospital

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Background: Currently majority of mastectomy and large number of wide local excisions are being carried out as in-patient procedure and NHS improvement plan has suggested to carry out majority of breast operations including mastectomy as a day case surgery with a maximum of overnight stay. We carried out this retrospective audit in our district hospital to find out our trend.

Methods: We collected the data between September to November 2010 via computerised data base as well as theatre list, discharge letter (EDNF), ward records and patients' notes.

Results: A total of 105 patients underwent breast surgery between two surgeons over 3-months period. Of these 4(3.8%) patients had LD reconstruction. 40(38%) of the patients were discharged the same day. 38(36%) of patients stayed overnight following breast surgery and of these 10 (9%) patients had mastectomy, axillary nodal clearance or mammoplasty. In total, 78(74%) patients were discharged within 33-hour of being admitted to hospital. A further 25(24%) were discharged within 48 hours of admission to hospital. Main reason to stay after 2 nights was social.

Discussion: Our results have shown the potential for majority of breast operations to be carried out as day case surgery and within 23-hour of admission to hospital. Good communication with the patients at the time of consent, good pain relief, support of breast care nurses and district nurses will be the key factors in carrying out this task.

P75. Same day discharge for non-reconstructive breast cancer surgery should be the standard of care

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Introduction: In-patient admission is the standard of care for breast cancer surgery despite similar recovery irrespective of drain use and length of stay. King's Breast Care (KBC) stopped using drains in 2005, leading to patient demand for early discharge and establishment of a same day discharge pathway.

Methods: The initial Day Surgery Unit (DSU) pathway integrated community nurses (CNs); (1) at the KBC nurse-led pre-assessment. Post-diagnosis CNs faxed a social assessment to KBC aiding DSU selection. (2) Post-operative care. In addition to DSU senior nurse (via pager, 24/7) and breast CNS access, CNs conducted a standardised telephone assessment day 1 post discharge (faxed to KBC). The pathway was adapted following patient feedback (focus groups conducted by Breast Cancer Care) and audit.

Results:

(1) Initial 6-month audit. 44% of women had day surgery; 43.3% didn't (26% no DSU list; 17.3% no overnight stay facility). Subsequently, additional DSU lists (+/- 23 hour stay resource) commenced.
(2) Focus groups. In-patient admission was not considered superior to same day discharge. Patient feedback resulted in information revision (aligning post-discharge expectations) and cessation of CN support (patients found this confusing).
(3) Re-admission rate (2006 to date) for infection/haematoma is 2.7% (N=43/1557); 82% were managed via DSU; the median in-patient admission duration was 3 (range 1-9) days.

Conclusions: Ambulatory surgery should be the default position. It is safe and acceptable with adequate patient / multi-disciplinary team preparation and releases valuable in-patient resource. The Cancer Reform Strategy / NHS Improvement Agency have engaged KBC to facilitate implementation nationally.

P76. Factors Affecting the Length of Hospital Stay after Breast Cancer Surgery: A Prospective Study

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Introduction: The Cancer Reform Strategy (2007) identified that most breast cancer operations can be performed as day case or 23-hour-stay. Length of stay was a clinical quality indicator in the National Cancer Peer-Review. We prospectively studied the factors that lead to an extended hospital stay after breast cancer surgery

Methods: We studied patients undergoing breast cancer surgery over 4 months in an ongoing prospective audit. We assumed that 80-90% of breast-conserving surgery and axillary surgery can be performed as day cases and mastectomies as 23-hour-stay, in accordance with NICE QIPP guidance. Bilateral procedures and reconstructions were excluded.

Results: 79 out of 92 operations were suitable for inclusion. Among operations that were expected day cases (n=63), planned overstay was 17.5% and unplanned overstay 13%. Among operations with expected 23-hour stay (n=16), planned overstay was 44% and unplanned 25%. Planned overstay was mainly due to social reasons such as patient living alone, and less commonly for medical reasons. Unplanned overstay was due to surgical (e.g., haematoma, drain related issues) (n=4), anaesthetic (nausea, vomiting, pain) (n=4) or both (n=1) and other (n=3) reasons.

Conclusions: Social reasons are the main cause of extended length of stay. This is difficult to improve upon. Despite having a dedicated "hospital-at-home" nursing service, discharge of some patients from outside our catchment area was delayed due to poor week-end nursing provision for drain care. These overstays as well as the small number of overstays resulting from other surgical / anaesthetic reasons may be improved upon.

P77. Early post-operative discharge. A win-win situation. Overcoming one problem - surgical drainage tubes

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Introduction: It has long been considered that patients with drainage tubes cannot be discharged home. It is becoming accepted that shorter

hospital stays improve post-operative recovery and there is a strong move to day-stay or 23-hour admissions.

Methods: Two years ago our unit instituted a policy of early discharge after all breast surgery. In order to do so patients were discharged home with drains in situ. This meant designing a patient pathway and closely monitoring the early patients. The policy was effective because of the close involvement of breast care nurses. We report a patient survey questionnaire and audits of an early three month period and our last nine months' patient discharges. We compared our results with the national averages (NA) for length-of-stay.

Results: Of 35 patients sent a questionnaire 20 (57%) responded and 18 of these were positive, in particular stating how easy they found it to contact their key-worker when needed. In the early three months there were no day cases and 25% one night stays. In the nine months January to September 2010 23% patients were treated as day cases and 33% one night stays. Our average length-of-stay for mastectomy was 2.15 and breast conserving surgery 0.9 days (NA 3.2 and 1.1 respectively). There were no untoward occurrences.

Conclusions: A policy of early discharge after breast surgery is feasible with excellent patient satisfaction. It requires close involvement by breast specialist nurses.

P78. An audit of axillary drain usage on its impact on hospital stay and post-operative morbidity

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Introduction: Shifting inpatient care for breast surgery to day-case/23h pathway is one of the targets of the NHS improvement plan. A recent audit of our length of stay (LOS) showed patients having an axillary clearance (ALND) had an increased LOS. The presence of an axillary drain seemed to be the limiting factor, even though our unit has policy of discharging patients with drain(s) in-situ. Two breast surgeons stopped using drains so we reviewed and compared the outcome of these patients with those of three other surgeons who continued to use axillary drains.

Methods: All patients having breast conserving surgery who underwent an ALND between 1st June to 12th November 2010 were included. A retrospective analysis was made of LOS, wound infection and seroma formation. Data was collected up to 30 days post-operatively.

Results: 50 patients were reviewed. 18 had no axillary drain and 32 had a drain. The median LOS was 0 days (range 0 - 2) and 1 day (range 1 - 5) for the no drain and drain groups respectively. No significant difference was found in seroma formation and wound infection rates. The audit also demonstrated that if by day 3 postoperatively, there was still significant axillary drainage, seroma formation is almost unavoidable regardless of duration of drain thereafter.

Conclusion: This small study demonstrated that omitting axillary drains did not lead to a significant increase in post-operative complications. LOS in the no drain group was reduced which has potential benefits for both patients and the hospital.

P79. Factors affecting seroma collection by suction drainage post-mastectomy

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Introduction: Suction drainage is routinely used for prevention of seroma formation following mastectomy but often results in delayed discharge. This study aims to evaluate the factors affecting postoperative drainage, seroma formation and length of stay in hospital following mastectomy with a view of implementing a 23-hour mastectomy service in our department.

Methods: A prospective review of consecutive patients from August to December 2010 who underwent mastectomy for breast cancer. Their co-morbidities, neo-adjuvant status, number of drains, length of in-hospital stay, seroma incidence and volumes were recorded. Statistics computed with SPSS version 17.0 using Mann-Whitney U test.

Results: 66 patients were included and divided into 3 groups: Mastectomy with sentinel node biopsies (n=34), Mastectomy with axillary clearance/dissection (n=27) and Mastectomy alone (n=5). 29 patients had 1 drain, 32 patients 2 drains and 5 patients 3 drains. 32 patients (48.5%) developed seromas. Patients undergoing mastectomy with axillary clearance/dissection had higher volumes drained (460mls vs 235mls and 170mls, $p<0.05$). Single drain patients had lesser amounts (220mls vs 435mls and 420mls, $p<0.05$) and shorter in-hospital stay (mean 3.62 vs 4.94 and 3.80 days, $p<0.05$). Patients with co-morbidities (eg-Hypertension) and neo-adjuvant treatment had higher drainage (420mls and 715mls vs 270mls and 285mls, $p<0.05$). There was no significant difference between the incidence of seroma versus number of drains, co-morbidities and neo-adjuvant therapy.

Conclusion: 23-hour mastectomy model benefits patients by minimising patient stress and reducing hospital length of stay. This study finds selected patients (without co-morbidities) undergoing less invasive procedure would be more suited for this model.

P80. A Feasibility Study to Evaluate Use of a Screening Tool in a Breast Cancer Outpatient Setting

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Background: Around 1/3 of adults with cancer on an outpatient basis experience clinically significant levels of distress. When left untreated, psychological distress can significantly interfere with one's ability to cope, adherence to treatment, psychological well-being, quality of life, and even survival. This study aimed to assess the feasibility of implementing a brief screening tool (the Distress Thermometer) in a busy outpatient breast clinic over 4 weeks to assess for levels of distress.

Method: The Distress Thermometer was administered to 50 female breast cancer patients from a weekly outpatient clinic at the Royal Marsden Hospital. Information was not available on how far through the treatment journey the patients were, and for those that had finished treatment, how far they were from the end of treatment.

Results: Significant distress was found in 50% of the patients. Those that had not finished treatment were more distressed than those that had finished adjuvant treatment, and those that had finished treatment. Physical symptoms were reported most frequently, followed by emotional concerns. For all 3 treatment groups, the top 3 rated symptoms were worry, fears and fatigue.

Conclusions: The DT was efficient at identifying individuals as distressed, and significantly distressed with accompanying symptoms. With the implementation of this quick and effective screening tool of distress, it seems that those who are showing significant distress could be quickly identified. Subsequently a triage could be adopted to best maximise resources and to best use psychological care.

P81. Assessment of patient satisfaction after breast conserving surgery in a District General Hospital - a case for liposculpture

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Introduction: With increased awareness of patient reported cosmetic outcomes, this study aimed to determine patients' satisfaction after breast conservation surgery(BCS) in our unit.

Materials and Methods: Eighty five consecutive postoperative patients who had undergone BCS in our unit completed a patient satisfaction

questionnaire and were reviewed in clinic. A five point Likert scale was used to assess how happy patients were with the size and shape of their breasts after treatment was completed. Patients were also asked if they would consider further surgery to improve the cosmetic appearance. A clinical assessment was made as to whether further surgery was likely to result in improved cosmesis.

Results: The mean age of the patients was 61 years (31-82). The follow up ranged from two months to five years. The majority (86%) had BCS with radiotherapy and the remaining 14% underwent BCS without radiotherapy. 8% of patients (7 of 85) were unhappy with the cosmetic outcome and 29% were neither happy or unhappy with the appearance (25/85). 15% (13/85) of women would consider having further surgery to improve the appearance of their treated breast.

Conclusion: In our department up to 15% of women who have undergone BCS would consider further surgery to correct the cosmetic appearance of their breasts. With the increasing availability of liposculpture provision will need to be made for this.

P82. Will the Defendant Please Rise! Documentation of Chaperone use in Breast Examinations

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Introduction: The Ayling Report recommended organisations develop chaperone policies and make them available to patients. A Postgraduate Medical Journal publication (August 2010) revealed that 43.5% of 92 trusts surveyed had no chaperone policy in place and only half of these planned to implement one. The General Medical Council addresses the importance of offering an impartial chaperone for intimate examinations (Maintaining Boundaries- Guidance for Doctors 2006). The majority of doctors would offer a chaperone to patients undergoing breast examination. However recording of such chaperones may be less robust. If complaints are made against doctors it may be difficult to defend if there is no evidence of the presence of a chaperone.

Aim of Study:

1. To determine the incidence of documentation of chaperone use in breast examinations.
2. To suggest methods of improving documentation to protect all parties.

Method: 100 patient episodes were reviewed. These included referrals to Plastic Surgery clinics for augmentation mammaplasty and Plastic Surgery in patients requiring breast examination. The case notes were examined for the presence of documentation recording chaperone use. The patient age was recorded. The examining doctor gender and grade was recorded.

Results: 100 patient episodes reviewed. Average patient age 36.121 consultant episodes, 66 SpR episodes and 13 SHO episodes Only 3 episodes had adequate recording of chaperone (3%)

Conclusion: There is poor documentation of chaperones for breast examination. We suggest proforma use to ensure more robust recording. This would aid investigation of any complaints against doctors. Ongoing education of medical staff is essential.

P83. Copying letter to patients in breast clinic; an assessment of patient perception and satisfaction

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Introduction: Department of Health good practice guideline suggests copying clinic letters to patients when they agree. It may improve their understanding of health, care they receive, patient satisfaction and treatment compliance. Aim of this study was a) to assess patient preference in receiving clinic consultation letter b) to assess patient perception and satisfaction with the content of consultation letter.

Methods: 255 consultation letters offered to patients attending breast clinic. Either a copy of letter to GP or a personalised letter sent by post if agreed. A questionnaire for patient perception, preference and satisfaction score (visual analogue score) sent subsequently.

Results: 155 consultation letters followed by questionnaires were sent. 71 completed questionnaire received. All patients found consultation letters easily understandable. Majority of patients found the letters useful, explained diagnosis, treatment and would like to keep for future reference. The patient satisfaction for the content of the letter was median 92 mm (iqr 79-98). 50 % of the patients who received copy of letter to GP would prefer a personalised letter while 40 % were satisfied with the copy. There was no difference of satisfaction scores between groups receiving copy of letter and personalised letter.

Conclusions: Patients prefer receiving copy of clinic consultation letter, find it useful and are satisfied with the letter content. There is no added benefit in sending a personalised letter.

P84. The Effect Of The Introduction Of Pre-Operative Magnetic Resonance Imaging (MRI) Scans For Lobular Cancer In An Individual Breast Unit

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Introduction: NICE guidelines suggest that patients with lobular breast cancer should be offered an MRI scan to measure the tumour size and to exclude multifocality and contralateral tumours. The aim of this study was to ascertain the effect of this guideline.

Method: This guideline was introduced in January 2009. Patients with lobular cancer were selected from before and after this date. Cases were reviewed and compared for type of surgery, positive resection margins and alteration in patient management. The number of additional targeted USS and biopsies was also recorded.

Results: 69 patients were included in the study of these 22 had pre-operative MRI scans. There was no significant difference in mastectomy rates (MRI=45.5% vs No MRI 57.5% p=0.44) and no significant difference in positive margins following WLE (MRI 41% vs No MRI 35% p= 0.23). Of the 22 MRIs 11 additional findings were reported, 6 in the contralateral breast, this lead to 9 targeted USS and 8 further core biopsies. 3 of these core biopsies confirmed malignancy. 2 MRI scans demonstrated multifocality and 1 diagnosed contralateral DCIS. 4 patients management was altered due to the MRI result, 1 of these was due to an increase in size. There was 1 case of multifocality which was invisible on all imaging.

Conclusion: This study has shown that the guideline for pre-operative MRI scanning in lobular cancer will alter the surgical management in approximately 20% of patients. An additional 20% of patients will undergo additional imaging and biopsies that do not alter management.

P85. DEXA Scan: A Useful Screening Tool for Post Menopausal Oestrogen Receptor Positive Breast Cancer Patients Started on Aromatase Inhibitors

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Introduction: Osteoporosis is a common condition with potential morbidity, particularly pathological fractures. Post-menopausal women with oestrogen receptor positive breast cancer are treated with aromatase inhibitors, which are known to decrease bone mineral density. From April 2009, all ER positive breast cancer patients treated at the Queen Elizabeth Hospital who are commenced on Letrozole should undergo a DEXA bone scan to determine their baseline bone density. The aim of this study was to determine the prevalence of osteopenia and osteoporosis in the ER breast cancer population and to check the concordance with the above standard.

Methods: The pathology database was used to track ER positive breast cancer patients from April 2009 to October 2010 inclusive. These were

cross-referenced with the PACS radiology system to record the DEXA scan results.

Results: Four hundred and forty new post menopausal oestrogen receptor positive breast cancers were identified. Of these, only 239 (54.3%) underwent a DEXA bone scan. The prevalence of osteoporosis in this population was 25.9%. The prevalence was 13.4%, 16%, 52.5%, and 61.9% in the 50-59, 60-69, 70-79, and 80 + age groups respectively, which is comparable to the WHO estimation for each age group. The prevalence of isolated osteopenia was 37.2%.

Conclusion: Nearly two-thirds of our ladies require additional treatment to protect bone mineral density when aromatase inhibitors are commenced. The DEXA scan allows us to risk stratify patients and therefore allocate treatment appropriately and economically. The poor compliance with the standard is noted and will be addressed.

P86. Imaging Assessment of Tumour Size for Breast Conservation

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Introduction: Triple assessment of breast lumps routinely incorporates mammography and ultrasound scans. MRI is increasingly being used in patients to assess patient suitability for breast conserving surgery (BCS). However the COMICE study has shown this confers no benefit.

Method: A retrospective analysis of 40 consecutive patients who underwent BCS for malignant disease. All patients had mammography and ultrasound. 14 patients also had an MRI. The size of the lesions on breast imaging were recorded and compared to the patients' histology. Patients who had tumour <1 mm from the resection margin underwent a further procedure.

Results: All breast imaging modalities underestimated both the size of the total tumour and the invasive component

Table 1: Average (mean) difference in mm between the size of the malignancy on imaging and the histological findings in patients who underwent BCS:

Imaging Modality	Average difference in mm between imaging size and histology of	
	Total Tumour	Invasive Tumour
Mammography	10.5	0.4
Ultrasound Scan	14.2	5.0
MRI	18.5	6.7

42% of patients who underwent BCS needed a further surgical procedure. Of these patients mammography underestimated the total tumour size by 14.6 mm, ultrasound by 21.3mm and MRI by 23.4mm.

Conclusions: Mammography is the most reliable breast imaging modality at determining the total tumour size and invasive component. In-situ disease which is both impalpable and imaging occult results in positive margins and BCS failure. In-situ disease is not accurately measured on MRI it is therefore unable to precisely predict histological tumour size and does not reduce re-operation rates.

(1) Turnbull et al Comparative effectiveness of MRI in breast cancer (COMICE) trial: a randomised controlled trial, The Lancet 2010,375 (9714):563-571

P87. Digital Breast Tomosynthesis (DBT). A review of the first 1000 patients imaged

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Introduction: DBT allows three dimensional imaging and should improve diagnostic accuracy by eliminating superimposition. We review DBT as the first choice breast imaging in a symptomatic clinic.

Method: DBT became available in August 2010. Following review of the BI-RADS lexicon and protocols our clinical governance committee agreed that 2 view DBT could be used as an alternative to 2D digital mammography subject to careful audit. The first 1000 DBTs were double reported by 2 consultants with more than 5 years experience reporting 2D digital mammograms. Most follow up patients had previous 2D film for comparison. Their experience is reviewed.

Results: DBT was superior in distinguishing circumscribed from indistinct masses and speculated margins were better seen. Architectural distortions were as well seen on DBT but often better located in 3 dimensions. Asymmetric densities were more difficult without employing the synchronised cine review of both breasts but, once seen, were easier to characterise. Calcifications required extra vigilance since sequential slices tended to disaggregate clusters. However, using multiple inline planes, clustering and morphology were better appreciated and this has increased our biopsy rate (benign to malignant ratio remains 1:1). The time to read a DBT is about 3 times greater. Radiation dose is equivalent for breasts <60 mm thick but increases above that (remaining within European safe limits).

Patient acceptability is improved (DBT does not require vigorous compression).

Wire placement is quick and accurate and can be done in one view with 2 exposures.

Conclusion: We intend to continue to use DBT.

P88. The Role of Magnetic Resonance Imaging in Changing Operative Management of the Screen Detected Breast Cancers

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Introduction: Magnetic Resonance Imaging (MRI) may have a role in the local staging of screen detected breast cancer to aid the detection of multifocal / multicentric disease and has the potential to change the management of patients. We evaluated the impact of breast MRI on the operative decision making process in screen detected cancer patients.

Method: A retrospective review of all screen detected breast cancer patients attending our Breast Unit from 2003 to 2009 was performed. Age, tumour profile, histological type and grade, hormone & ACR status (I-IV) and MRI report were recorded. A binary logistic regression model was generated to determine variables predicting a change in management based on MRI.

Results: 64 patients with a median age of 60 were included in the study. MRI demonstrated additional information in 34/64 patients, necessitating repeat ultrasound (53%) and additional core biopsies (39%). Fourteen patients (21%) had either a new tumour or extensive disease which led to change in operative management. Of all the demographic and tumour variables analysed only ACR demonstrated a trend toward predicting a change in operative management (OR=2.296).

Conclusion: Our data suggest that approximately 1/4 of screen detected breast cancer patients undergoing routine MRI would experience a change in operative management, although this strategy is not cost-effective. There is some evidence that higher ACR grading in patients with dense breasts may gain the most from pre-operative MRI. These results need to be confirmed in a larger, prospective series.

P89. Following breast MRI guidelines at what cost?

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Introduction: In recent years, use of MRI in the evaluation of the female breast has increased following its wider availability and publication of guidelines from NICE and BASO. Our unit sees just over 3000 new patients per annum, of which approximately 10% have a new cancer diagnosis (typically a quarter of these from screening). We examined our current use of breast MRI in order to see if we conformed to recent guidelines and also to establish the scale of the resource now needed.

Method: All breast MRIs requested by our breast unit over a three year period, beginning 2007, were identified from radiology activity data. Clinical indications for the scans were examined using information from the request forms and electronically-stored clinic letters.

Results: Over the three year period, we performed 151 MRI scans, but the third year saw a ten-fold increase compared with the first year. The three most common indications, together amounting to 65%, were for family history, mammographically dense breasts and to clarify the extent of a known carcinoma in which breast conservation was proposed.

Conclusion: We conclude that we are currently requesting breast MRI scans appropriately according to recent guidelines, after a tenfold increase in breast MRIs at our Trust over three years. Required resources now amount to almost £20,000 per annum in interdepartmental cross-charge fees and over 50 hours of MRI time. Units having to outsource their breast MRIs could face well over double the costs.

P90. High resolution USS diagnosis of Fibroadenomas under the age of 25

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Introduction: Fibroadenoma of the breast is a benign breast lump predominantly seen in women under the age group of 25. It accounts for more than 70% of all breast biopsies in this age group. USS is a well established technique in characterizing these lesions.

Aim: To review the need to biopsy all fibroadenomas in the under 25 years age group.

Methodology: The details of all women under the age of 25 who underwent a breast biopsy between the years 2008 and 2009 were obtained from the pathology department. A total of 163 patients were identified to have fibroadenomas. The USS findings of the symptomatic breast lumps were correlated with the pathology report.

Results: Out of the 163 patients, 3 had a score of U1 (normal), 155 had a score of U2 (benign), 4 had a score of U3 (indeterminate probably benign) and 1 had a score of U4 (suspicious of malignancy). Out of the 155 patients with a score of U2, 150 (97%) had fine needle aspiration cytology (FNAC) and the remaining 5 patients (3%) had either tru-cut biopsy or excision. Of the 155 patients with a score of U2, only 151 patients had a mass lesion suggestive of a fibroadenoma. 148 patients out of 151 had C2 (benign) on FNAC and 3 had features consistent with a fibroadenoma on tru-cut biopsy or excision.

Conclusion: High resolution ultrasound scan is excellent at characterizing fibroadenomas. FNAC is not necessary in patients who have a discrete lesion with benign features on USS.

P91. Impact of MRI in Management of Invasive Lobular Carcinoma of Breast

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Introduction: The management of invasive lobular carcinoma (ILC) in breast has always been challenging due to its ambiguous nature on conventional imaging. Many studies have proposed magnetic resonance imaging (MRI) as the modality of choice for evaluation of ILC. Our aim is to study the additional value of MRI to the conventional assessment on the management of ILC of breast.

Methods: Data was collected prospectively on demographics, imaging studies, and treatment of 25 patients who had histological proof of ILC of breast since October 2008. All patients had mammograms, ultrasonography (USG) and MRI. The data was analysed comparing the size and multifocality of tumour on MRI, conventional imaging and histological specimen.

Results: Nineteen out of 25 patients had complete information available. Mean age of participants was 64.7. Seven (36.8%) out of 19 had multifocal tumour on histopathology. MRI correctly identified multifocal nature in 71.4% and USG in 14.2%, however none were detected on mammogram. MRI estimated the correct size of tumour in 63.2% whereas mammogram in 36.8% of cases. USG underestimated the size of the ILC in over 89% of patients. The proposed management plan for breast cancer was changed in 52.9% of the patients with ILC due to size and miultifocality of tumour showed on MRI.

Conclusion: This study demonstrates that performing a preoperative MRI on patients with ILC of breast influences the management of patients and is more accurate in predicting the pathological size and multifocal nature of tumour than other imaging modalities.

P92. Cost effectiveness and impact of pre-operative MR imaging in assessment and surgical treatment of invasive lobular carcinoma of the breast

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Introduction: NICE guidelines recommend pre-operative magnetic resonance imaging (MRI) of the breast in all lobular cancers suitable for breast conservation surgery. The primary objective of this study was to assess the utility of pre-operative MRI in patients undergoing conservative breast surgery for invasive lobular cancer.

Methods: We performed a retrospective analysis of all lobular carcinomas from a single hospital over a three year period (2007-2009).

Results: A total of sixty nine patients were diagnosed with lobular carcinomas. Pre-operative MRI was performed in only eight patients (11.5%).43/69 patients (62%) had initial breast conserving surgery, of which 17 needed further surgery for oncological clearance.Of these, three women had pre-operative MRI scans. Ten needed one further wide local excision and seven had a mastectomy as the second operation. Only one patient had three operations. Amongst the eight patients who had pre-operative MRI, it did not alter therapeutic management in any of them. In fact, three of these women had re-excision surgery because of close margins at the initial surgery.

Conclusions: Our data show that MRI may have avoided a very small proportion of patients needing a second surgery (20%). However, this is in keeping with the routine rate of positive margins after breast conserving surgery. Moreover, this has to be offset against the cost and additional resources involved in performing MRI on all lobular cancers as well as the false positives resulting in overtreatment. In our experience the use of MRI should be tailored to individual patients and MDT recommendations.

P93. Associations between breast density and bone density among post-menopausal women

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Introduction: The appearance of a breast on a mammogram varies according to its composition; fat, being radiolucent, appears dark on

a mammogram whilst dense tissue, predominately composed of epithelial & stromal cells, attenuates X-rays and appears lighter. This lighter area is referred to as mammographic density(MD). Both MD and bone mineral density(BMD) are known breast cancer risk factors. They are also known as markers of cumulative exposure to sex-hormones in women. We hypothesized that these two measures could be linked through an underlying pathway involving endogenous hormones. This is the first study to have used separate components of MD and quantitative ultrasound(QUS) measures of calcaneii to examine this association.

Methods: For this study, post-menopausal women from the EPIC-Norfolk prospective cohort were selected. MD was measured using computer assisted Cumulus software on mammograms obtained through routine screening. QUS of calcanii was done to measure BMD. After exclusions, 918 women were included in the analyses. Multiple linear regression was used to examine the association between MD and BMD with MD measures taken as the outcome variable. All analyses were done using STATA 10.0 package.

Results: Absolute dense area (DA) of the breast was not found to be associated with BMD measures before and after multi-variate adjustments. DA expressed as a percentage of total breast area(PD) was found to be positively associated with BMD(ß=-0.01;P-value=<0.001) and the non-dense area (ND) of the breasts was found to be negatively associated with BMD (ß=10.8;P-value=<0.001). However, both associations failed to reach statistical significance after adjustments for BMI(P-value=0.44 & 0.47 respectively).

Conclusion: These results suggest that MD and BMD may operate through independent pathways to increase breast cancer risk.

P94. Associations between mammographic density and phytoestrogens

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Introduction: Phytoestrogens are plant compounds that structurally resemble estradiol. By competing for estrogen receptors phytoestrogens may inhibit the binding of endogenous estrogens and reduce breast cancer risk. However, it is not clear if phytoestrogens act as weak estrogens in an environment of relatively low endogenous hormones as seen in post-menopausal women. Mammographic density(MD) is an independent risk factor for breast cancer and is known to be responsive to hormonal changes. Using MD as an intermediate marker of breast cancer risk, we studied the effect of phytoestrogen exposure to breast tissue composition.

Methods: A cross-sectional study was done among postmenopausal women (n=1420) who were not on hormone replacement therapy from within the EPIC-Norfolk cohort(n=25,000). Dietary intake and urinary measurements were used to measure phytoestrogen exposure. Percent density(PD) was measured using Boyd six-category scales for all women and in a smaller subset separate components of density [absolute dense area (DA) and non-dense area(ND)] was measured using computer-assisted method. Equol producer status was estimated using a urinary $\log_{10}$ equol: daidzein ratio of greater than -1.75 as an indication of equol production.

Results: DA was not associated with urinary or dietary phytoestrogens. Enterolactone level in the urine was found to increase PD and decrease ND. However, these effects were lost on additional adjustments for BMI. Dietary enterolactone levels were also found to increase PD, which persisted after multi-variate adjustments. Stratified analysis showed the association to be among equol non-producers (ß = 0.53, P = 0.01). Dietary isoflavones intake was also found to decrease PD among equol non-producers (ß = -0.35, P = 0.04).

Conclusions: Limited evidence for associations between phytoestrogens and mammographic density offers reassurance that phytoestrogens do not act as estrogenic agents on breast tissue among post-menopausal women with habitual low consumption of phytoestrogens.

P95. A study of male breast cancer in a district general hospital

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Introduction: Male breast cancer is a relatively rare presentation compromising less than 1% of breast cancers. As it is a rare disease, male patients commonly present late with more advanced disease. We investigated the cases of male breast cancer in a district general hospital over a 10 year period.

Methods: Cases were investigated retrospectively. Case notes, pathology and radiology databases were evaluated.

Results: 18 cases were evaluated. The mean age was 62 years old (range 55 to 82). All patients were referred by their GP with symptoms of a lump or breast pain. The mean duration of symptoms before presentation was 10 weeks (range 2 to 24). 4 patients had a significant family history. 10 patients had a lump palpable when seen in clinic. 4 patients had palpable axillary lymph nodes. 12 patients proceed to have a mastectomy with axillary node clearance. All patients had ductal carcinoma of varying grade. 9 of 12 had node positive disease on histology. CT staging showed liver and/or lung metastases in 5 of 8 patients. The 5 year mortality was 30%.

Conclusions: Male breast cancer is associated with a delayed presentation and as such more advanced disease on assessment. In this small study we have shown a high rate of metastasis at presentation which may support the routine use of CT staging for male breast cancer patients.

P96. The efficacy of tamoxifen in the treatment of gynaecomastia: A prospective controlled trial of tamoxifen versus observation

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Introduction: This study aims to establish the efficacy of tamoxifen in the treatment of gynaecomastia when compared to observation alone.

Methods: Patients with primary gynaecomastia presenting at our breast clinic over a 3 year period were offered tamoxifen (20mg OD) or observation. Patients under observation whose symptoms did not resolve were offered tamoxifen treatment. End points were complete or partial resolution of the lump.

Results: N=45. Twenty three patients opted for tamoxifen treatment and 22 for observation. Seventy four percent of the patients treated with tamoxifen (n=17) demonstrated complete or partial resolution of symptoms compared to 32% (n=7) of the 22 patients under observation. All 15 patients who failed to show improvement during observation opted for treatment with tamoxifen. Of these 15 patients, 87% (n=13) demonstrated complete or partial resolution of symptoms. In total, 38 patients underwent treatment with tamoxifen for a mean duration of 5.88 months. If all patients receiving tamoxifen during the study are considered together, 79% demonstrated complete or partial resolution of their lump. Forty seven percent of patients treated with tamoxifen had a complete resolution of their lump (n=18) whereas 32% had a partial response (n=12). There were no complications or side effects of treatment.

Conclusion: Tamoxifen is more effective than observation alone in the treatment of gynaecomastia.

P97. Male Attitudes in Gynaecomastia: A Qualitative Study

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Objectives: Gynaecomastia is a common benign breast condition affecting up to 65% of men, but only a small proportion seek medical attention. The aim of this study was to investigate the attitudes of men with gynaecomastia towards the issues of gender identity, body image and health-care interactions.

Design: This is a qualitative study using a semi-structured interview to collect data and analysing it with Interpretative Phenomenological Analysis (IPA), a commonly used tool in healthcare psychology.

Methods: All patients diagnosed with gynaecomastia in the breast clinic of a district general hospital (without co-existent malignant disease) during the study period were invited to participate. A patient information sheet was given to 29 men, of whom 5 contacted the research team. Of these, 4 agreed to participate. The age range of participants was 47-72 years old. Data was collected through semi-structured interviews and the transcripts were analysed using Interpretative Phenomenological Analysis (IPA). Local Research Ethics Committee approval was obtained (ref:08/H1207/208)

Results: There was a delay of weeks to years in seeking medical attention, which was usually triggered following sanctioning by a partner. The main reason for seeking medical attention was cancer anxiety. Patients felt that they could not discuss their worries with other men. The condition affected normal daily activities, choice of clothes and intimate relationships.

Conclusion: Despite reassurance, participants remained anxious about undetected malignancy. The overall impact of gynaecomastia stimulated desire for treatment including surgical intervention. This study suggests that patients may require more support and reassurance than they receive at present.

P98. Retrospective Audit of Male Breast cancer: 4 year experience

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Male breast cancer accounts for 1% of all cases of breast cancer. Male breast cancer is rare before 50 years. Symptoms, diagnosis, treatment and survival are all very similar to women, however it is often diagnosed late & may be less likely to be cured.

Method: From 2006 till July 2010, 659 male patients had breast imaging and 90 had breast biopsy. We identified 11 male patients with breast cancer and clinical records were reviewed retrospectively.

Results: Eleven patients were diagnosed with primary or recurrent breast cancer. Median age was 74 years (51-82 years). All had preoperative breast imaging with sensitivity 70%, specificity 97%, PPV 77%, NPV 96% and accuracy 94. Overall 45.4% % patients were stage I or less (n=2) or stage II (n=3) Seven underwent mastectomy and level 2 axillary node clearance, one had bilateral mastectomy while 3 out of 11 received no surgical treatment. Seven had adjuvant treatment including estrogen blockade, chemotherapy and radiotherapy. Mean follow up was 25 months. Disease free and relative survival at mean 2 years follow up are 45.4% and 63.6% respectively, while 4 (36.4%) patients died within 2 years of diagnosis.

Conclusion: Breast cancer is more common in the older male. Mammograms sensitivity is 70% which is significantly lower than in women. All patients had MDT discussion and 72% had mastectomy + axillary node clearance. 54.5% patients presented as stage III/IV disease.The overall survival rate for male patients with breast cancer is 63.6% at 2 years.

P99. One-Year Survival In The All Breast Cancer Report 2009: Is This A Useful Statistic?

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Introduction: The "All Breast Cancer Report" 2009 (ABCR) uses one-year survival after diagnosis of breast cancer as an outcome measure, although its usefulness in breast cancer is not established. Our aim was to assess whether measuring one-year survival rates in a predominantly symptomatic District General Hospital setting provides useful information relating to diagnosis and treatment of breast cancer.

Methods: Diagnostic, staging and treatment information was prospectively collected for all patients with newly diagnosed breast cancer in a single breast unit. An annual check post diagnosis was made for evidence of intercurrent metastases or death. Causes of death were determined from clinical records.

Results: 1504 patients were diagnosed with breast cancer between 1995 and 2009. One-year survival data was available for 1282 patients (85%). 79 (6%) patients died at one-year, giving an overall survival rate of 94%. Patients not undergoing surgery and patients over 80 had a lower overall one-year survival. Route of presentation (screening/symptomatic), presence of invasive disease, and Nottingham Prognostic Index made no difference to overall survival at one-year. Of the 79 deaths, 26 (2% of 1282) were breast cancer related.

Conclusion: Whilst one-year survival rates in our unit compare favourably to those published in ABCR, death as a result of breast cancer within this time is a rare event. Our data suggest that patient and not breast cancer related factors determine one-year survival. We conclude that one-year survival is not a useful measure in the assessment of diagnosis and treatment of breast cancer.

P100. Breast cancer research output, 1945-2008: a bibliometric and density-equalizing analysis

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Introduction: The primary aim of this work was to provide an in-depth evaluation of research yield in breast cancer from 1945 to 2008, using large-scale data analysis, the employment of bibliometric indicators of production and quality, and density-equalizing mapping.

Methods: Data was retrieved from the Web of Science (WOS) Science Citation Expanded database; this was searched using the Boolean operator, 'OR', with different terms related to breast cancer, including "breast cancer", "mammary ductal carcinoma" and "breast tumour". Data was then extracted from each file, transferred to Excel charts and visualised as diagrams. Mapping was performed as described by Groneberg-Kloft et al. in 2008.

Results: 180,126 breast cancer-associated items were produced over the study period; these had been cited 4,136,224 times. The United States returned the greatest level of output (n=77,101), followed by the UK (n=18,357) and Germany (n=12,529). International cooperation peaked in 2008, with 3,127 entries produced as a result; relationships between the United States and other countries formed the basis for the ten most common forms of bilateral cooperation. Publications from nations with high levels of international cooperation were associated with greater average citations rates. 4,096 journals contributed at published at least one item on breast cancer, although the top 50 most prolific titles together accounted for over 43% (77517/180126) of the total output.

Conclusions: Breast cancer-associated research output continues to increase annually. In an era when bibliometric indicators are increasingly being employed in performance assessment, these findings provide useful information for those tasked with improving that performance.

P101. Research output in breast cancer - Identification of global benchmarks and evaluation of the contribution of surgeons from Great Britain and Ireland

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Introduction: Increasing emphasis is placed on the evaluation of research output for funding and resource allocation. We aimed to examine authorship trends across the entire breast-cancer related literature, and specifically, to evaluate the contribution and h-index of consultant breast surgeons across the UK and Ireland.

Methods: Authorship data was extracted from 180000 breast related articles in the Web of Science (WOS), and global benchmarks were defined. Breast-related output for 239 consultant breast surgeons across the UK and Ireland was identified using the WOS. A citation report for each was created, providing the h-index, mean citations per publication, and years of publication. A researcher has a h-index of h if h of his/her publications have at least h citations each, and the other publications (Np-h) have, at most, h citations each.

Results: 2060 articles were returned, accounting for over 59000 citations. Median output per surgeon was 2; 55 returned 0 breast-related publications. The top quartile were together responsible for over 83% of the output. The range of h-index values for the cohort was 0-50 with a median of 3. There was a positive correlation between time since first publication and h-index ($r = 0.599$, $p = 0.000$). The median number of citations per article, per surgeon, was 18. Global output and the leaders within the breast cancer sphere will be discussed at the meeting.

Conclusion: A small minority are responsible for the majority of output; a large proportion contribute nothing, raising significant questions for the future of scientific breast research.

P102. Implementation of and compliance with NICE Clinical Guideline 80 (Early and locally advanced breast cancer: diagnosis and treatment). A local re-audit at Salford Royal Foundation Trust

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Introduction: NICE released clinical guidelines in February 2009 'Investigation and treatment of early and locally advanced breast cancer'. These were audited in 2009 at Salford Royal Foundation Trust and re-audited in 2010.

Methods: All patients (38) newly diagnosed with early or locally advanced breast cancer between 01/03/10-31/07/10 were retrospectively analysed and compared to twelve standards.

Results:

- 97% received pre-treatment axillary ultrasound.
- 94% received appropriate minimal axillary surgery (51% improvement) with 96% undergoing sentinel lymph node biopsy.
- Immediate breast reconstruction was discussed with 84% of appropriate patients; an 11% decrease.
- Where necessary, adjuvant therapy was started within 31 days of surgery in 36% of patients, a 14% decrease.
- 38% started on medication causing osteoporosis had a baseline DEXA scan, an increase of 24%.
- 94% were treated with surgery if fit, and appropriate systemic therapy, regardless of age.
- Written information on breast cancer and treatment was given to 89% and 95% respectively, an increase of 12% and 25%.
- 34% of patients received a breast care diary with details of NICE guidance and the service providing their care.

Conclusions:

1. Documentation is crucial.
2. Reasons for delay commencing adjuvant therapy should be documented explicitly.
3. Patients started on anastrazole, letrozole or goserelin, should have baseline DEXA scans.
4. All patients should receive breast cancer diaries and written information.
5. Full re-audit in one year and earlier mini-audits for standards with low, or falling compliance.
6. NICE guidelines can be used as a quality assurance measure.

P103. Is there a difference in the age of presentation over a 9-year period in a single breast unit?

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Introduction: Studies have shown that the age of presentation of breast cancer is falling. The aim of this study is to verify whether this is true for our centre between the year 2000 and 2009.

Methods: Records of all breast patients seen at our institution in the years 2000, 2005 and 2009 using the Trust databases were reviewed. Patient demographics and tumour characteristics were examined. Both screen-detected and symptomatic patients were included in the study. Patients excluded were those with incomplete data, recurrent breast cancer and those diagnosed outside the studied years.

Results: A total of 713 patients were studied.

YEARS	2000	2005	2009
Number of patients (n)	208	219	286
Mean age (years)	58.8	57.6	58.4
Median age (years)	58	57	60
Invasive carcinoma (n)	158	190	212
Carcinoma in situ (n)	39	27	53
Other* (n)	11	5	10
Grade of Invasive carcinoma (n)			
1	39	46	35
2	69	107	124
3	49	31	31
Grade of carcinoma in situ (n)			
Low	3	8	6
Intermediate	19	12	19
High	23	9	13
Positive lymph nodes (n)	63	116	127

*Other tumours recorded include adenoid cystic carcinoma, medullary carcinoma, adenocarcinoma, angiosarcoma, cribriform carcinoma, metastatic malignant melanoma, Paget's disease of the nipple, sarcoma, atypical ductal hyperplasia, solid papillary carcinoma, atypical columnar cell hyperplasia

Conclusions: Unlike some studies reported, there is no change in age of presentation of breast cancer in the years studied at Charing Cross Hospital.

P105. Audit of deaths within one year of diagnosis of breast carcinoma

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Introduction: Patients with an expected survival of less than 1 year after diagnosis of breast carcinoma should be offered the best supportive treatment avoiding surgery if possible. The aim of this audit was to determine the cause of death within one year of diagnosis of breast carcinoma in our unit and compare it with population based standards.

Materials and Methods: The study period was from January 2008 to December 2009. We audited all patients who died within one year of diagnosis of breast carcinoma to determine the cause of death and treatment given. We set a standard of 50% death due to breast carcinoma based on the SEER (Surveillance, Epidemiology, and End Results) program of population based tumour registries covering over 14% of the US population which showed that 52.8% deaths were due to breast carcinoma and the rest to co-morbidities.

Results: Five patients died within one year of diagnosis of breast cancer. Two of these (40%) had mastectomy but died unexpectedly 9 and 11 months after surgery from myocardial infarction and renal failure respectively. Two patients with metastatic disease at presentation were treated

palliatively without surgery and died due to progressive metastatic disease. An 89 year old lady on primary endocrine treatment died of her medical co-morbidities. No patient died unexpectedly after primary curative therapy.

Conclusion: Early death from breast carcinoma should be due to progressive metastatic disease or co-morbidities and not unexpected progression of disease treated as curable. Our data confirms this and is comparable to published data.

P106. Breast oncological surgical treatment in 2409 young women recruited to a Prospective study of Outcome of Sporadic versus Hereditary breast cancer (POSH)

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Introduction: POSH (MREC: 00/06/69) is a national epidemiological study of 2989 women with invasive breast cancer aged 18 to 40. We report on surgical treatment and clinico-pathological features of patients entered into the study. The 'All breast cancer report' (October 2009) is used as a comparator dataset.

Methods: Patients were recruited from 126 UK hospitals, between 01/01/2000-01/01/2008. For this analysis 580 POSH patients were excluded including those presenting with distant metastases (N=76), those receiving neo-adjuvant chemotherapy (N=449) and where surgical or chemotherapy details were unknown (N=55), leaving 2409 patients for analysis.

Results: Tumour size distribution within the POSH cohort was similar to that nationally for symptomatic breast cancers, however there were differences in the distribution of tumour grade, histological type, node positivity and hormone receptor status. The proportion of patients undergoing mastectomy was similar (51% POSH v 52% nationally for symptomatic). Within the POSH cohort 35% of patients with a tumour size $\leq$ 15mm underwent a mastectomy and this may reflect patient preference, but was not influenced by family history. The proportion of patients requiring greater than 3 oncological operations was similar (2.3% POSH v 2% nationally), although younger patients in both datasets were more likely to undergo more than two operations.

Conclusions: Tumour size distribution in younger patients diagnosed with breast cancer is similar to the national symptomatic breast cancer population simplifying comparison. Younger patients including those with a strong family history are treated surgically similarly to the national symptomatic population despite an excess of otherwise poor prognostic features.

P107. A collaborative 1 day information and support forum was facilitated by a National Breast Cancer Charity and NHS Health Care Professionals for women at high risk, BRCA 1/2 gene carriers and those with hereditary breast cancer

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A team from Breast Cancer Care (the nursing team, specialist service team, the user group, and the research and evaluation team) collaborated with cancer genetic counsellors from different NHS regional genetic services in London, Cambridge, Southampton and Oxford to facilitate a one-day support forum for women at high risk, BRCA 1/2 gene carriers and hereditary breast cancer.

The aim of the forum was to provide information, education and support. We also wanted to reduce the sense of isolation felt amongst these women, by them meeting others in a similar situation, sharing their experiences, gaining and giving each other support.

Thirty-nine women applied to attend the pilot support forum; 32 were recruited and 33 attended. We had 30 completed evaluations. Of these eight identified themselves as having hereditary breast cancer and the remaining 22 were all gene carriers.

The individual responses from both the quantative and qualitative evaluations show a wealth of appreciation for such an event and positive feelings about having attended. The event had had the greatest impact in the area of meeting other women with: 23 women strongly agreeing and 6 agreeing that they had benefited from other clients experiences 21 strongly agreeing and 8 agreeing that they felt less isolated.

This pilot was significant in showing how valuable such a service is and makes a strong case for Breast Cancer Care to develop further, not only in the South East of England but also with genetic counsellors in other areas of the UK.

P109. Management of breast cancer in the elderly: Age is nothing but a number

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Aims: Breast clinicians can occasionally be guilty of basing treatment decisions on age such that surgery is not offered as first line treatment options in the elderly. The aim of our study was to assess treatment options provided for patients over the age of 75 years with breast cancer.

Methods: Retrospective review of patients diagnosed with breast cancer aged over 75 years at time of diagnosis at a single institution over a 3-year period (December 2003- November 2006) was undertaken.

Results: 57 patients with invasive breast cancer were reviewed. The median follow-up period was 3 years. 28 patients underwent surgery as their primary treatment and 29 underwent primary hormonal therapy. 89.6% of this group received Aromatase Inhibitors as their primary hormone treatment. The median age in the surgical group of patients was 80.3 years (Range 75-85) compared to 85.2 years (Range 77-96) in the primary hormone group. There was no difference in American Society of Anaesthesiology (ASA) status between the two groups. 72.4% of patients who underwent surgery were alive at 3 years, compared to only 28.5% of patients in the primary hormone group. The lymph node involvement was fairly evenly matched in both groups; however 28% of the primary hormone group had distant metastatic disease at the time of diagnosis compared to 0% in the surgical group.

Conclusion: Results show that in elderly patients with breast cancer, in the absence of distant metastases, that are fit to undergo an anaesthetic then surgery should be the primary treatment of choice.

P110. Audit of the management of breast cancer in older women

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Introduction: Equality of care for older patients is a concern raised by the National Cancer Reform Strategy. There is no guidance on the management of older patients with breast cancer. The standard for this audit was NICE guidance for early and locally advanced breast cancer.

Methods: All patients 70 years or above with newly diagnosed breast cancer at BBU between 01/01/2008 and 31/12/2008 were included. Data was collected retrospectively from case notes, radiology and pathology databases.

Results: 43 patients were identified - 16% of the departments new patients. Mean age = 77. Median tumour size = 38mm. 12 had locally advanced disease. (35/43) 81% underwent surgery, 8 received primary endocrine therapy. 27/35 patients (77%) underwent mastectomy reasons were documented in all cases. 29/30 patients having surgery for invasive cancer had axillary surgery, 23 had axillary clearances, 11 were negative. Documentation of reasons for performing ANC was unclear in 9 patients.

Retrospective use of the Memorial Sloan Kettering Nomogram predicted a risk of <50% of node positivity in all patients with a negative clearance.

Conclusions: The majority of patients were treated optimally with surgery. The larger proportion of mastectomies is reflective of the larger tumour size. This may explain the greater number of ANCs than would be expected; documentation of the decisions regarding axillary surgery could be improved. Using a nomogram and a more detailed evaluation of anaesthetic risk may clarify decision making and documentation in older patients who are often perceived to be at greater risk from operative intervention.

P111. Is primary endocrine therapy effective in treating the elderly, unfit patient with breast cancer?

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Introduction: Elderly patients with oestrogen receptor (ER) positive breast cancer wishing to avoid surgery or who are unsuitable for general anaesthetic may be treated with primary endocrine therapy. We reviewed all patients with ER positive breast cancer initially treated with primary hormone therapy and investigated their outcome to evaluate this method of managing breast cancer.

Methods: All patients with breast cancer treated with primary hormone therapy between January 2002 and December 2008 were identified from a single consultant's prospectively maintained database. For each patient a Charlson's index of co-morbidity was calculated to give an estimate of 10 year survival.

Results: A total of 83 cancers in 82 patients who had a median age of 81 years (range 62 - 93) were included. 7% (6) of patients had a greater than 50% chance of surviving 10 years, calculated using Charlson's index. The median follow up period was 24 months (range 6 - 72). 12 patients (15%) had disease progression while taking primary hormone therapy. 23 (28%) patients have died (median time from diagnosis to death of 10.5 months, range 1 - 77). Two (2%) patients experienced disease progression within 6 months of starting primary hormone therapy, and the number of patients whose cancer progressed increased with increasing length of follow up. Fourteen (17%) patients eventually underwent a wide local excision under local anaesthetic.

Conclusions: Primary hormone therapy is an effective treatment in elderly, unfit patients, so that by stopping disease progression these patients die with their breast cancer, not of it.

P112. Presentation of peripubertal girls in breast clinic - important lessons in management

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Introduction: Surgical intervention in young breasts may irrevocably stunt breast growth. Breast aplasia and hypoplasia are likely if acute symptoms are mismanaged. We reviewed the presentation of peripubertal girls in breast clinic to see what lessons could be learnt from our experience.

Method: A 3 year retrospective study of all girls under 15 presenting to breast clinic was performed. Data collected included presenting complaint, management and outcome.

Results: Eighteen patients were identified with a median age of 13 (10-14). Presenting complaints included swelling (17%), lump (56%), pain (56%), lump and pain (39%), nipple discharge (11%), breast asymmetry (17%). One patient with unilateral aplasia gave a history of incision and drainage of a breast abscess as a child. Most patients were seen by the consultant (50%) or associate specialist (33%). The majority of patients (78%) required no treatment. Two patients with mastitis were treated with antibiotics. Two patients are currently awaiting breast augmentation surgery for breast aplasia and Poland syndrome. Only half of all patients required follow-up in clinic, the remainder were discharged from clinic at first presentation.

Conclusion: The majority of peripubertal girls presenting to breast clinic require no treatment and can be reassured and discharged. They should be assessed by a senior doctor to prevent mismanagement, AVOIDING surgery for perceived lumps or mastitis. Our patient with unilateral aplasia highlights the catastrophic consequences of surgery to the breast bud. Greater awareness by health professionals and patients of the risk of breast surgery in peripubertal girls is needed.

P113. Long Term Outcomes of Granulomatous Mastitis; a 12 year study

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Introduction: Granulomatous mastitis (GLM) is a rare benign inflammation condition of the breast. No consensus exists for management such patients. It has been suggested that without intervention women will be exposed to recurrence and a chronic clinical course. This study represents the largest retrospective series to date of conservative management of all women presenting with GLM.

Methods: All breast specimens between 1996-2010 were searched, 16 patients were identified, 1 patient was excluded due to inaccessible records. Notes were reviewed for relevant data. 15 patients participated in a telephone questionnaire looking for recurrence or chronic course of disease.

Results: Median age was 37yrs. 20% of the patients have previously been treated for benign breast lump affecting the other breast. 80% were parous. None were breastfeeding, 60% had breast fed previously. All patients presented with a unilateral breast lump with 11/15 complaining of pain. 4 patients presented with discharge or erythema. 5 had a discharging sinus. 10/15 patients had an ultrasound and mammography, 5/15 had one modality alone. 14/15 patients underwent a core biopsy and 1/15 underwent FNA. 12/14 of the patients had confirmed GM on histology with 2/14 reported as non-specific chronic inflammation. Microbiological testing showed 3/15 positive for tuberculosis and 1/15 for aspergillus. All were managed with antimicrobials. There were 2 recurrences at 7 and 16 months which were managed conservatively. Median follow up was 316 days.

Conclusion: The conservative management of GLM with close follow up is as effective as more radical treatment options but is less debilitating.

P114. Breast Cancer in a reconstructed breast for Poland's syndrome

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Introduction: Poland syndrome is rare condition exhibiting ipsilateral chest wall deformities including hypoplasia or aplasia of chest wall musculature, breast and nipple development. Its aetiology is thought to be due to a vascular abnormality that develops in the sixth week of gestation leading to disruption of the subclavian artery. Although breast cancer is associated with the syndrome there are no reports in the literature of it presenting in a reconstructed breast.

Case: A 67 year old woman with Poland's syndrome, under the respiratory physicians, had a CTPA for dyspnoea. This demonstrated an incidental mass in her previously reconstructed right breast. The patient was born with amastia which was reconstructed with a TRAM flap forty years ago. Ultrasound and core biopsies revealed a 27mm abnormality containing an invasive ductal carcinoma. The patient underwent a wire guided wide local excision and axillary clearance, confirming absence of

pectoralis major. Histology confirmed a Grade 3 poorly differentiated invasive ductal carcinoma, which was oestrogen receptor positive, HER2 negative and 0/17 lymph node positive. She has been referred to an oncologist for treatment with an aromatase inhibitor and radiotherapy.

Discussion: This case presents an unusual presentation of breast cancer and highlights the need to assess all breast abnormalities with triple assessment. Breast cancers have been previously reported in patients with Poland syndrome but this is the first case report of it presenting in a patient born with absent breast tissue and subsequent reconstruction. Patients with Poland syndrome with or without reconstructions should undergo surveillance for breast cancer.

P115. Diagnostic and treatment challenges in idiopathic granulomatous mastitis - 10 year experience

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Introduction: Although idiopathic granulomatous mastitis (IGM) is an uncommon chronic inflammatory breast condition, its morbidity impact remains high. We describe our experience of the diagnostic challenges, treatment plans and outcomes that await the patient.

Methods: 113 women over a 10 year retrospective period were diagnosed with breast granuloma (ICD code N60.8). The case records for 23 patients with IGM (M.4400) core biopsy pathology codes were analysed. Patients with revised diagnoses of malignancy (2), sarcoid (1), tuberculous mastitis (6) and foreign body reaction (81) were excluded.

Results: Physical presentations were commonly breast mass, pain and skin ulceration. Ultrasound features often resembled carcinoma with hypoechoic masses but microcalcifications were notably absent on mammography. Core biopsy distinguished benign from malignant lesions (7 patients required repeat cores). Infective causes were excluded with microbiology culture. Of the 23 IGM patients (age range 26 to 68), 78% were non-caucasian and 13% were pregnant at diagnosis. Empirical treatment in 65% of cases was with antibiotics. Fifteen patients (65%) required surgery with 3 patients developing recurrence after a median of 32 months. Two of these patients required further surgery.

Conclusions: Core biopsy histology is the most important step in diagnosis, with the absence of microcalcifications on mammography suggesting a benign lesion. IGM can be self-limiting with over a third of cases avoiding surgery. No patients in our series required corticosteroid therapy. Initial treatment in 2/3 cases was with antibiotics, Surgery was reserved for diagnostic biopsy, abscess drainage to avoid fistula formation, recurrences and to treat intractable pain.

P116. Breast Cancer-Who Should Perform Follow-up?

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Introduction: NICE guidelines published in 2009 recommended that long-term follow-up for patients treated for early breast cancer in secondary care should cease. Patients should be offered the choice of where they would like their follow-up care to be undertaken after finishing adjuvant treatment; primary care, secondary care or a shared care approach.

Method: To establish how patients and General Practitioners (GPs) felt about the potential change in breast cancer follow-up, questionnaires were distributed in follow-up clinics as well as electronically emailed to GPs within the area of the Royal Derby Hospital (RDH). Patients were consulted about where they preferred follow-up and why. GPs were asked questions relating to their confidence in managing moderate risk breast cancer patients and their knowledge of the guidelines. We also explored the area of how to ease the transition of follow-up to primary care.

Results: 52.9% of patients preferred to be followed-up at the RDH, 11.8% preferred their GP and 33.6% preferred a shared care approach. 100% of the GPs did not feel confident to manage patients with regards to their hormone treatment or monitoring for recurrence. 80% of GPs were unaware of the NICE recommendation regarding follow-up of this group of breast cancer patients and 85% of GPs felt they would benefit from further education.

Conclusion: If NICE guidelines were to be implemented, substantial resources would have to be invested in training and support for primary care colleagues to ensure high quality and safe clinical practice in management of breast cancer patients.

P117. Process of developing a patient resource to meet the needs of women in the survivorship phase post breast cancer treatment

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Introduction: At the end of hospital based treatment women with breast cancer can experience an altered identity and isolation. Support and information to assist adjustment at this time is limited Breast Cancer Care sought to develop a resource to address the identified need.

Aim: To develop a resource for women at the end of hospital based treatment.

Phase1

1) Focus groups of women treated for breast cancer to explore their experience after hospital based treatment.
2) Interviews with healthcare professionals involved in the care of women with breast cancer.

Development of a prototype resource
Phase 2

1) Reconvened focus groups to review the prototype resource.
2) Written review of the prototype by the healthcare professionals. Adaptations made to the prototype resource from findings of Phase 2

Results: Four key themes emerged from Phase 1: reflection; loss of self; isolation and moving forward. Format and content of the resource includes information and signposting on a range of subjects identified e.g. menopause, fatigue, infertility, depression.

Conclusions: The process of developing the 'Moving Forward' resource has come from a strong evidence base involving user and HCP input. This study highlights that the needs of women with breast cancer do not finish at the end of treatment. The resource aims to assist women with their transition after treatment to breast cancer survivor.

P118. Are Cancerians prone to breast cancer? A study of primary and recurrent breast cancer

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Introduction: Correlation between Zodiac signs and cancer is not well known. It is perceived that Cancerians are liable to breast cancer. We aimed to assess any such correlation.

Methods: All primary breast cancers diagnosed between January and December 2006, and recurrences that took place between January 2004 and December 2008 were considered.

Results: A total of 266 breast cancers were diagnosed during 2006 [Aquarius (20), Pisces (24), Aries (30), Taurus (19), Gemini (25), Cancer (26), Leo (22), Virgo (19), Libra (18), Scorpio (15), Sagittarius (27) and Capricorn (21)]. Median age was 63.5 ± 13.5 years. There was no correlation between age, frequency of occurrence and Zodiac sign (One way Anova, p=NS). 174 cases of recurrences were noted between 2004 and 2008 [Aquarius (19), Pisces (12), Aries (19), Taurus (16), Gemini (17), Cancer

(13), Leo (15), Virgo (12), Libra (17), Scorpio (9), Sagittarius (15) and Capricorn (10)]. Median age at first recurrence was 63.9±13.5 years. The mean interval between primary and first recurrence was 7.1±6.0 years [Aquarius (7.8±7.8), Pisces (8.2±7.0), Aries (8.9±8.5), Taurus (7.1±4.3), Gemini (8.8±6.6), Cancer (7.46.3), Leo (5.2±3.8), Virgo (5.1±2.9), Libra (6.8±5.6), Scorpio (5.1±4.7), Sagittarius (7.6±5.5) and Capricorn (4.5±3.2)]. There was no correlation between age at recurrence, interval period and Zodiac sign (One way Anova, p=NS).

Conclusions: This study did not show any significant correlation between Zodiac signs, Cancer in particular, and occurrence of primary or recurrent breast cancer. This may help dispel mythical attributions ascribed to star signs and allay any anxiety this may cause to patients.

P119. Paget's disease of the nipple - a 16 year review

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Introduction: Paget's disease of the nipple (PDN) is an uncommon presentation of breast malignancy whose precise evolution is debatable. This is an audit of the condition over a 16-year period in a District General Hospital.

Methods: A retrospective search of the database was carried out for all patients whose initial clinical and histological presentation was of PDN between 1st January 1995 and 31st November 2010. Their demographics, pathology and treatment were reviewed.

Results: Of 3041 breast malignancies, there were 39 females with PDN (1.3%). Mean age 69 years. One had no further histology. 5 had C5 FNA with no core biopsy, all receiving hormone therapy (HT) only. 13 had ductal carcinoma in situ, mean size of 2.5 cm. Of these, 5 had primary mastectomy (PM). 8 had initial wide local excision (WLE) with 3 requiring completion mastectomy (CM). 4 received radiotherapy (RT) following WLE. There were 20 cancers (one carcinosarcoma, 18 ductal and 1 lobular). Mean tumor size 1.4 cm. Grade 1(1); Grade II (6); Grade III (9); No Grade (4). 9 had PM and 4 WLE. Two required CM after WLE. 3 received RT only, 5 adjuvant chemotherapy and RT. 10 patients had HT (4 cases HT only). The mean cancer follow-up was 138 months, with 5 breast cancer and 8 unrelated deaths.

Conclusion: There was an average of about two cases of Paget's disease of the nipple per year predominantly associated with ductal carcinoma in situ and invasive ductal carcinoma. The majority of those that had surgery required a mastectomy.

P120. Gall Bladder Metastasis from Breast Carcinoma- Case Report and systematic review

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Introduction: Gall bladder metastasis from breast carcinoma is extremely rare. We report one such case and performed a systematic review to assess its presentation, histology and prognosis

Materials and Methods: Systematic search in Medline and Embase with the key words "gall Bladder", "metastasis" and "breast cancer" yielded 71 abstracts. Further free text search and cross reference yielded 104 abstracts from which 9 were considered for this review.

Case report: A 52 year old lady underwent laparoscopic cholecystectomy in 2001 for biliary colic. The histology showed metastatic breast carcinoma. In 1981 she had undergone a right mastectomy and axillary clearance for a 22 mm poorly differentiated ductal carcinoma which involved six out of 14 axillary lymph nodes. She received adjuvant chemotherapy and radiotherapy. In 1990 she developed a 21 mm grade 3 ductal carcinoma of the left breast treated with wide local excision, radiotherapy, chemotherapy and tamoxifen. In 1996 she developed cerebral metastasis which was treated with radiotherapy and arimidex.

Results: The systematic review yielded 9 reports of breast cancer metastasis to the gall bladder. Lobular carcinoma was the predominant histological type. The presentation ranged from synchronous lesions to gall bladder metastasis detected more than 20 years after treatment of the primary breast cancer. The commonest clinical presentation was cholecystitis. The prognosis is variable with some patients dying within months while others had prolonged survival with systemic therapy.

Conclusion: Cholecystitis in patients with breast cancer can be the presentation of metastatic disease. Prolonged survival is possible after surgery and systemic therapy.