and PROs. Study quality and risk of bias (RoB) were assessed using GRADE and Cochrane's ROBINS-I tool respectively.
Results: Out of 6381 articles screened, 18 were included (unilateral 919 DIEPs, 452 implants; mean age 49 years, follow-up (months): DIEP 28.9; IBR 42.9. There were 7 prospective/9 retrospective cohort studies, 2 case series and no RCTs. Mean flap loss and fat necrosis rates were 3.90% (SD 3.86) and 9.67% (SD 17.0) respectively. There was no difference in mean length of stay [DIEP 8.42 days (SD 2.23) vs IBR 7.90 days (SD 5.34), p=0.82]. Mean number of revision procedures was lower in DIEP (0.80; SD 1.07) vs IBR (1.53; SD 1.52), p<0.01. Study quality was low with serious RoB. One study (n=275) reported $11,941/QALY ICER for DIEP, with higher breast QALY (DIEP 19.5; IBR 17.7) using BREAST-Q; two studies (n=275) showed no overall cost differences, favouring DIEP. Two studies (n=339) evaluating PROs favoured DIEP.
Conclusion: DIEP reconstruction may be more cost-effective and yield superior PROs. However, poor quality, bias-ridden studies limit the findings. Level-I evidence evaluating core outcome sets and cost-effectiveness will facilitate national-level policy and shared decision-making.

08. CAN WE TRUST OUR DATA? A COMPARATIVE ANALYSIS OF IBRA AND HES DATA

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Introduction: Implant-based breast reconstruction is the most commonly performed reconstructive procedure in the UK. Data from the iBRA study demonstrated implant loss at 3 months as high as 30%. Data acquired by GIRFT found an implant loss rate of 7.5% at 12 months nationally. GIRFT relies on HES data, whereas the iBRA study was a National Trainee Research Collaborative. We have used HES data to validate our iBRA cohort.
Method: Searching HES data using the following codes: B30.1, B30.2, B30.3, B30.4, S48.20, B29.8, Y02.2, we developed a dataset of patients who had mastectomy and immediate breast reconstruction with implants during the iBRA study period.
Results: Implant loss at 3 and 12 months is shown in the table. Causes for variation between the datasets will be explored and presented. Different codes were used to describe the same surgical procedure, the complexity of the different codes will be also be presented.

Royal Marsden outcomes	iBRA data n = 102 (%)	HES n = 235 (%)
Implant loss at 3 months	7 (6.9)	11 (4.7)
Implant loss at 12 months		19 (8.1)

Conclusions: Unit level and possibly surgeon level data will be published in the public domain in the near future. There are limitations to iBRA due to the nature of voluntary data entry and to HES due to a variation in the utilisation of the large number of existing codes. Collaboration between clinicians and informatics teams is essential to improve data quality. Without this we cannot adequately provide informed consent to our patients.

09. IS NEOADJUVANT RADIOTHERAPY PRIOR TO MASTECTOMY AND AUTOLOGOUS RECONSTRUCTION SAFE? COMPARISONS BETWEEN PRADA TRIAL PATIENTS AND HISTORICAL CONTROLS

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Introduction: For patients with locally advanced node-positive disease requiring post-mastectomy radiotherapy (PMRT), integrating breast reconstruction poses challenges. Irradiating autologous tissue may cause fibrosis, fat necrosis, shrinkage and longitudinal degradation of symmetry. Many patients are denied immediate breast reconstruction (IMBR). An approach to avoid flap irradiation is neoadjuvant radiotherapy (NRT) to the tumour-bearing breast prior to mastectomy and IMBR. The aim of this study was to evaluate the safety of this approach.
Methods: Following ethical approval (IRAS:15/LO/1071; amendment AM/1806/86), a retrospective case-control study was undertaken to compare the complication profiles of patients recruited to receive NRT prior to IMBR within or outwith the PRADA trial (NCT02771938)(n=42), and unmatched historical controls receiving PMRT, either following immediate free-flap reconstruction (n=41) or simple mastectomy (n=44).
Results: There was no significant difference between cohorts in tumour grade (p=.470), histological subtype (p=.108), ER (p=.200), PR (p=.239), HER2 (p=.559) or nodal status (p=.153). Simple mastectomy patients were significantly older [mean age years ± Std:NRT=48.5±8.6, PMRT=49.4±9.3, flat chest=58.0±9.2;p<0.001). There was no significant difference between groups in unplanned return to theatre at twelve weeks. There were no free-flap failures in any group. Critically, there was no statistically significant difference in skin necrosis rates. A greater proportion of patients undergoing simple mastectomy required post-operative antibiotics (p=.013). A greater proportion of open wounds were observed in patients undergoing PMRT to free-flaps (p=.051).
Conclusions: NRT prior to autologous IMBR was not associated with significantly greater complication profiles when compared to unmatched historical controls, supporting the safety of radiotherapy sequence-reversal.

10. LOSS RATES IN SLING-ASSISTED IMPLANT-BASED BREAST RECONSTRUCTION OVER TIME SEEM TO RELATE TO PROPORTION OF PATIENTS WITH KNOWN RISK FACTORS RATHER THAN ANY LEARNING CURVE

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Introduction: Ongoing audit of sling-assisted, implant-based breast reconstruction (SAIBBR) in Edinburgh has identified factors contributing to implant loss. It was hoped that as a result of this, loss rates would have dropped over time. The present study aimed to assess if there was a reduction in reconstructive loss rate.
Methods: SAIBBR has been performed on 766 occasions in the Edinburgh Breast Unit between July 2008 and June 2018 with median follow up of 795 days. Smoking and radiotherapy have previously been identified as significant risk factors for reconstruction loss and outcome data has been fed back to breast team members on an annual basis. Data on rate of loss of implant was analysed across the unit in 6 monthly increments and on 8 individual surgeons with an experience of over 60 cases.
Results: There was no statistically significant change in loss rate over time and no obvious trend towards improvement. Instead there seemed to be an association between loss rate and the proportion of patients with known risk factors.
Conclusions: SAIBBR has a relatively high loss rate which persists in our unit despite good understanding of risk factors. Surgeons and patients are continuing to choose this option despite risks, presumably because it is relatively quick and simple, may sometimes be the only realistic reconstructive option and can still produce a respectable result in the majority of cases. These factors must be taken into consideration when assessing unit or surgeon level loss rates in implant-based breast reconstruction.

11. THERAPEUTIC MAMMAPLASTY IS A SAFE AND EFFECTIVE ALTERNATIVE TO MASTECTOMY WITH OR WITHOUT IMMEDIATE BREAST RECONSTRUCTION, PARTICULARLY IN HIGH-RISK PATIENTS: COMBINED ANALYSIS OF 2,916 PATIENTS IN THE IBRA-2 AND TEAM MULTICENTRE PROSPECTIVE COHORT STUDIES

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Introduction: Therapeutic mammaplasty (TM) may allow women to avoid mastectomy but few well-designed studies have evaluated the success of this approach or compared the short-term outcomes of TM with mastectomy+/-immediate breast reconstruction (IBR). We combined patients recruited to the national trainee-led iBRA-2 and TeaM studies to evaluate the success of TM and to compare the short-term outcomes of TM and mastectomy+/-IBR.
Methods: Patients in the TeaM study who underwent TM to avoid mastectomy were identified and demographic, complication, oncology and adjuvant treatment data compared to patients undergoing mastectomy+/-IBR in the iBRA-2 study. The primary outcome was the rate of successful BCS in the TM group. Secondary outcomes included post-operative complications and time to adjuvant therapy. Appropriate approvals were obtained.
Results: 2,916 patients (TM n=376; mastectomy n=1,532; IBR n=1,068;[implant-based n=675; pedicled-flap n=105; free-flap n=288]) were included in the analysis. Patients undergoing TM were more likely to be obese, smoke and to undergo bilateral surgery than those undergoing IBR. Patients undergoing mastectomy+/-IBR, however were significantly more likely to experience complications than the TM group (TM-21%; mastectomy only-37%; implant-based reconstruction-33%; pedicled-flaps-40%; free-flaps-41%; $p<0.001$). Breast conservation was possible in 87% of TM patients. There were no clinically-significant delays to adjuvant treatment.
Conclusions: TM may allow high-risk patients who would not be candidates for IBR to avoid mastectomy and is associated with significantly fewer complications than IBR. Further work is needed to explore the comparative patient-reported and cosmetic outcomes of the different approaches and to establish long-term oncological safety.

12. PEDICLED PERFORATOR FLAPS (LICAP, MICAP) ARE SAFE AND ECONOMICAL ALTERNATIVES TO MASTECTOMY AND COMPLEX RECONSTRUCTION IN A SELECT GROUP OF PATIENTS

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Introduction: Pedicled perforator flaps, such as the lateral intercostal artery perforator (LICAP) and medial intercostal artery perforator (MICAP) flaps, allow volume replacement using autologous tissue in breast conservation surgery (BCS), avoiding complex reconstruction surgery. Here we analyse initial outcomes and cost savings made in a District General Hospital for patients undergoing either technique as part of their oncoplastic breast treatment.
Methods: A prospectively completed database was searched between 01/10/2016 to 31/08/2018 for patients who had either LICAP or MICAP flap in immediate sitting following BCS by two oncoplastic breast surgeons in the same unit. Patients were typically followed up at 2 weeks post surgery with results of the operative histopathology. We reviewed their length of stay (LOS), early post-operative outcomes and short-term financial implications.
Results: 52 patients met the inclusion criteria**.** Mean LOS was 1 day; there was no flap necrosis observed. Post-operative histology showed 6 patients had positive tumour margin (11.5%); 2 of 6 underwent total mastectomy and 4 of 6 had re-excision of margin, with the flap intact. For 46 patients (88.5%) who did not require a second operation, a mean relative saving of £3300 per case was made, due to no mesh or drains and shorter LOS when directly compared to implant- and mesh-based reconstruction.
Conclusion: LICAP and MICAP flap techniques in BCS are technically feasible with minimal donor site morbidity, early post-operative recovery, excellent cosmetic outcome and good graft reliability. Additionally, they are more cost-effective when compared to complex breast reconstruction. Further long-term follow-up data is required.

13. PATIENT REPORTED OUTCOMES FOR LATISSIMUS DORSI MYOCUTANEOUS FLAP BASED BREAST RECONSTRUCTION – A 10 YEAR EXPERIENCE

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Introduction: The Latissimus Dorsi Myocutaneous Flap (LDMF) is used in post-mastectomy reconstruction or partial reconstruction. This study has evaluated long-term (12 years) patient reported outcomes from LDMF procedures using the Breast-Q.
Method: Retrospective analysis of all LDMF surgery in two UK hospitals was performed between 2006 - 2016. Case note review of indications and outcomes was performed and all patients were sent the Breast Q® patient reported outcome survey by post (unless no longer able to participate, deceased or lacking cognitive capacity). Data were analysed using Excel and SPSS.
Results: In total 226 patients were identified and 27 excluded, with 199 questionnaires being sent out in 2018. Median time since LDMF surgery was 7 years (range 2-12 years). Of these, 77 returned completed surveys (response rate 38.7%). Median satisfaction levels were generally high with 78% satisfied with the outcome of treatment, 65% satisfied with their breasts, 71% satisfied psychosocially and 75% satisfied with their chest. Overall satisfaction was high with 3 patients (3.9%) scoring below 50%, 5 (6.5%) between 51-60%, 19 (24%) between 61 and 70, 21 (27%) between 71-80%, 16 (21%) between 81-90% and 13 (17%) between 91-100%.
Conclusion: Long term follow up of a large cohort of LDMF reconstruction patients show high levels of overall satisfaction, demonstrating how temporally robust the technique is. The technique fell out of favour with the rise in popularity of ADM reconstruction although long term outcomes for ADM surgery are not yet available. The LDMF remains a valuable technique for the oncoplastic surgeon.

14. A RANDOMISED CONTROLLED TRIAL (RCT) OF 3-DIMENSIONAL SIMULATION OF AESTHETIC OUTCOME IN BREAST CONSERVING TREATMENT (BCT)

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Introduction: Almost two thirds of women with surgically-managed breast cancer undergo BCT. Standard practice is to describe likely aesthetic changes. Photographs are shown prior to reconstructive surgery or more complex oncoplastic procedures. Simulation of a patients' individual aesthetic outcome has been used in aesthetic breast and facial surgery. We hypothesise that viewing a personalised 3D simulation improves patients' preparedness for surgery.
Methods: REC approved RCT of 117 women undergoing unilateral BCT at a single centre. Three-way randomisation into standard care, viewing photographs matched for BMI, age, and tumour location, or 3D simulation. Randomisation is stratified by BMI, intention to undergo ALND, and operation type (standard WLE v mammoplasty). Primary end point is comparison of a 10cm Visualise Analogue Scale (VAS) between groups for "How confident are you that you know how your breasts are likely to look after treatment?" Sample size calculation was based on a 1.5cm difference between groups (SD of 2.0, Bonferroni correction, 80% power).
Results: 79/117 have been recruited. Median VAS in the control is group 5.9cm; 2D photography, 8.1cm; and 3D simulation, 9.1cm. Preliminary analysis suggests a significant difference between groups (Kruskal Wallis, $p<0.005$). Post-hoc pair-wise comparison suggests significance between control and simulation and 2-D photographs and simulation ($p<0.005$, $p=0.041$ respectively), but not between control and 2-D photography ($p=0.182$).
Conclusions: We will assess fully powered results in January 2019 when recruitment will be complete. Thus far, results suggest 3D simulation is advantageous over viewing 2D-images of other women and over standard care.

15. CAN STRATTICE™ REDUCE THE LONG-TERM INCIDENCE OF CAPSULAR CONTRACTURE COMPARED TO A SUBMUSCULAR IMPLANT BASED BREAST RECONSTRUCTION? – A PROSPECTIVE MULTICENTRE STUDY

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