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ABSTRACTS

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e-Posters

Artificial intelligence in surgery

14 Augmented reality reshaping surgical training: trainer and organisational benefits on the path to Kirkpatrick's pyramid mastery

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Introduction Novel augmented-reality (AR)-based surgical simulator offers promise in training, yet its comprehensive evaluation across Kirkpatrick's pyramid levels is pivotal. Kirkpatrick's pyramid, a four-level framework, assesses training effectiveness.
Methods A holistic assessment of AR-based surgical simulators across Kirkpatrick's levels was executed through multiple studies encompassing four main modalities. A pilot study (n=11) and a multi-centre study (n=6) scrutinised junior trainees' performance in appendectomies and vaginal cuff closures, emphasising completion time and distance travelled metrics (Level 2).

A concurrent study evaluated self-confidence scores pre- and post-AR training, showcasing a mean improvement of 3.82 (Likert, p=0.018), indicating enhanced morale and skill translatability (Level 1 and 3). Health economics review exhibited potential cost savings (Level 4).

An independent systematic review (n=26) of pertinent literature across the four modalities was conducted.
Results Statistically significant reductions in completion time and distance travelled ($p<0.001$, n=6 and $p<0.05$, n=6, respectively) underscore the skill enhancement via AR training (Level 2). Self-confidence improvements suggest elevated morale and skill translatability (Level 1,3). A health economics review highlighted potential per-patient savings of up to £455 through AR-based surgical training, demonstrating organisational benefits (Level 4).
Conclusions The novel AR-based surgical simulator showcased positive outcomes spanning Levels 1 to 4, elevating trainees' morale, satisfaction, confidence, and skill translatability (Levels 1, 3) while yielding substantial organisational savings (Level 4). Findings can extrapolate to wider specialisations.

AR-based surgical training significantly reduced completion time and distance travelled, emblematic of enhanced skill acquisition (Level 2). These findings endorse AR's transformative role in surgical training, aligning with Kirkpatrick's goals.

76 AI literature reviews: balancing ends and means

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Introduction This study examines the use of the generative artificial intelligence (AI) chatbot ChatGPT in the context of scientific literature reviews and its potential implications for medical practice. We aim to evaluate ChatGPT's ability to generate literature review conclusions and references accurately.
Methods We conducted a comparative analysis by replicating two recent literature reviews from Clinical Otolaryngology using ChatGPT. The selected reviews, Lee *et al.* (2022) on posterior nasal neurectomy for rhinitis and Cereceda-Monteoliva *et al.* (2021) on Sarcoidosis in ear, nose, and throat, served as reference points. ChatGPT was tasked with generating conclusions and references based on the same research questions.
Results ChatGPT produced conclusions that mirrored those of the original reviews. However, discrepancies emerged in the generated references. In both cases, ChatGPT's references exhibited inaccuracies, suggesting a limitation in accessing reliable databases. This calls into question the reliability of ChatGPT's literature review output.
Conclusions Our study highlights the divergence between ChatGPT's ability to generate correct conclusions and its inability to provide accurate references. Unlike human researchers, ChatGPT lacks the capacity for higher-order evaluation essential in literature review processes. While the ends, in terms of conclusions, appear accurate, the means, represented by the references, are questionable. The rapid advancement of AI like ChatGPT presents potential for future iterations to improve critical reasoning and obtain access to research databases, potentially enhancing the reliability of AI-generated literature reviews. Meanwhile, it is essential to approach AI-generated literature reviews with caution, as the accuracy of the means ultimately determines their value in guiding medical practice.

86 A general-purpose natural language processing tool (ChatGPT) can make complex surgical decisions with confidence similar to experienced surgeons: a comparative analysis

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Introduction Unicompartmental knee replacements (UKR) have become an increasingly attractive option for end-stage single-compartment knee osteoarthritis (OA). However, there remains controversy in patient selection. We aimed to determine whether a General-Purpose open-source NLP (ChatGPT) can make decisions regarding a patient's suitability for a total knee replacement (TKR) or a UKR.
Methods We conducted a case-based cohort study using data from another study, where participants (73 surgeons and ChatGPT) were presented with 32 fictitious case scenarios requiring surgery. The surgeons and ChatGPT program decided between UKR and TKR and indicated their degree of confidence.

Using the overall UKR/TKR judgments of the 73 surgeons as the gold standard reference, we calculated the sensitivity, specificity, and positive predictive value (PPV) of ChatGPT to identify if a patient should undergo UKR. Cohens kappa coefficient was used to assess the agreement between the surgeon cohort and ChatGPT.
Results The sensitivity was 0.91 (95% CI: 0.71–0.98), specificity was 0.70 (95% CI: 0.39–0.93) and PPV was 0.87 (95% CI: 0.72–0.94). ChatGPT was more confident in its UKR decision making (ChatGPT mean confidence=2.4, surgeon mean confidence=1.7). The Cohen's kappa coefficient was 0.63 (95% CI: 0.33–0.92, $p<0.05$) suggesting substantial agreement.
Conclusions ChatGPT had high PPV in deciding between UKR and TKR. This General-Purpose NLP program approximated the decision making, and exceeded the confidence, of experienced surgeons with substantial inter-rater agreement when deciding if a patient was most appropriate for a UKR. The role of NLP programs in surgical decision is an area of further research.

87 Using artificial intelligence to determine which knee osteoarthritis patients will benefit from steroid injection

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Introduction Corticosteroid injection is an established treatment for patients with symptomatic knee osteoarthritis. Identifying the most appropriate patients who would benefit from a corticosteroid injection is challenging but has important clinical benefits. This study aims to use an Artificial Intelligence approach to predict which patients may benefit from having intra-articular steroid injection.

Methods We used data from two longitudinal prospective cohort studies: Multicentre Osteoarthritis Cohort Study (MOST) and Osteoarthritis Initiative study (OAI). Patients who had a steroid injection were included in the analysis and were split into TRAINING:VALIDATION using a 80:20 split. We used linear discriminant analysis (LDA) to predict the MCID or a MWPC in the WOMAC Pain score. We calculated the sensitivity, specificity, positive and negative predictive value to determine our model's accuracy.
Results Overall, there were 219 (2.80%) patients included in this study. Our model had a mean sensitivity of 0.512 (+/- 0.0806), a mean specificity of 0.648 (+/- 0.0389), mean PPV of 0.220 (+/- 0.0311), mean NPV of 0.868 (+/- 0.0260) and a mean accuracy of 0.619 (+/- 0.0277).

Overall, our model showed moderately strong sensitivity in predicting patients who would have a meaningful clinically important improvement in WOMAC Pain score with a corticosteroid injection.
Conclusions This is a novel approach to aid clinicians in decision making for patients with knee OA. We believe that our model has the potential to be used in a clinical setting to aid clinicians in identifying patients who may benefit from a corticosteroid injection. Further data is required to improve the accuracy of the model.

185 The application of large language models to orthopaedic practice

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Introduction Large language models (LLMs) provide an opportunity to streamline conversion of clinical notes into readable letters. The aim of this study is to explore whether LLMs GPT-3 and ChatGPT can write clinic letters and predict management plans for common orthopaedic scenarios.
Methods Fifteen scenarios were generated and ChatGPT and GPT-3 prompted to write clinic letters and separately generate management plans for identical scenarios with plans removed. Letters were assessed for readability using the Readable Tool. Accuracy of letters and management plans were assessed by three independent consultant orthopaedic clinicians.
Results Both models generated complete letters for all scenarios after single prompting. Readability compared using Flesch-Kincade Grade Level (ChatGPT:8.77(SD0.918);GPT-3:8.47(SD0.982)), Flesch Readability Ease (ChatGPT:58.2(SD4.00);GPT-3,59.3(SD6.98)), SMOG Index (ChatGPT:11.6(SD0.755); GPT-3:11.4(SD1.01)), and reach (ChatGPT:81.2%; GPT-3:80.3%). Chat-GPT produced more accurate letters (8.7/10(SD0.60) vs. 7.3/10(SD1.41), p=0.024) and management plans (7.9/10(SD0.63) vs. 6.8/10(SD1.06), p < 0.001) than GPT-3. However, both LLMs sometimes omitting key information or adding additional guidance which was at worst inaccurate.
Conclusions This study shows that LLMs are effective for generation of clinic letters. With little prompting, they are readable and mostly accurate. However, they include inappropriate omissions or insertions. Furthermore, management plans produced by LLMs are generic but often accurate. Therefore, a healthcare-specific language model trained on accurate and secure data could provide an excellent tool for increasing the efficiency of clinicians through summarisation of large volumes of data into a single clinical letter.

186 Assessing the potential of artificial intelligence for specialist advice: a comparative study with consultant urologists

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Introduction The integration of advice and guidance systems to assist General Practitioners (GPs) in obtaining timely specialist opinions is a well-established practice. With recent advancements in artificial intelligence (AI), discussions have emerged regarding AI's potential role in surgery.
Methods This study employed ChatGPT to process advice and guidance requests for 26 patients. Blinded to the source, AI-generated responses were compared with specialist inputs and presented to GPs for evaluation. Subsequently, GPs provided both numerical ratings on a ten-point scale and qualitative insights.
Results The evaluation disclosed an average rating of 8.4 for responses from consultants, compared to 4.1 for ChatGPT-generated responses. This discrepancy held statistical significance, with a p-value of 0.0397. Qualitative analysis of consultant responses included phrases such as "succinct and exactly what is needed", while ChatGPT-generated responses were critiqued as "unhelpful and ethically dubious" and described as "a bit patronising".
Conclusions In direct comparison, ChatGPT-generated responses exhibited lower average ratings than those from consultants, accompanied by predominantly unfavourable feedback. Replacing Urologist advice and guidance with ChatGPT responses would be inadvisable. Any potential clinical application of ChatGPT for this purpose should involve review and refinement by experienced clinicians. While AI shows promise in expediting response times and easing the workload of senior specialists, allowing them to focus on additional clinical activity, this study underscores the need for cautious consideration. This investigation initiates a compelling avenue of exploration, especially given ongoing technological advancements. Further research is already underway to enhance ChatGPT responses through context-specific refinement.

235 The application of deep learning neural networks to surgical simulation and planning: a systematic review

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Introduction The Halstedian proverb "See one, do one, teach one" is well known to surgical trainees, yet 42% report feeling inadequate in their skills. The European Working Time Directive constraint, in conjunction with a worsening NHS staffing crisis equates to reduced training time. Surgical simulation represents a solution, seeing huge leaps in fidelity in recent years. Now, the development of artificial intelligence (AI) has broadened horizons to the possibility of bespoke simulation and planning.
Methods A broad search strategy followed by manual screening was conducted to identify studies utilising deep learning (DL) to optimise surgical simulation. Studies evaluating the effectiveness of DL in simulation training, planning and deformation behaviour were included. Papers assessing non-DL AI models or focused instead on assessing intra-operative skills were excluded.
Results Of 29 identified studies, 62.1% utilised DL for 3D anatomical reconstruction for surgical planning, most commonly in maxillofacial surgery. 31.0% used DL to assess surgical skills during simulation, critiquing open, laparoscopic, and robotic skills. Convolutional neural networks were the most commonly employed model. Overall, DL models resulted in significantly positive outcomes in all parameters.
Conclusions DL networks performed spectacularly in providing detailed metric analysis in simulation, subsequently creating bespoke training plans. Moreover, the ability of DL models to simulate replicas of patient anatomy confers stringent operative planning and allows patient-specific training. While there remain technological

constraints to implementation as well as the need for further cultural acceptance of AI in the surgical field, DL represent an exciting avenue in addressing the ever-increasing challenges in surgical training.

278 A review of novel techniques and most recent uses of artificial intelligence/machine learning in orthopaedic surgery

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Introduction We seek to examine the technical aspects of novel/recent ML uses within orthopaedics. The use of ML for candidacy for arthroplasty is an evolving field which will be examined here. Reducing the complications of arthroplasty and the risk of revision is paramount. Work in the prediction of complications before reduction in PROMS/radiological findings which will also be compared in addition to work in image optimisation and triage. ML methods include classification/regression, convolutional neural networks, extreme gradient boosting, and decision-tree analysis.
Methods Using PRISMA, records were obtained through database searching. The inclusion criteria were published studies after September 2022. The exclusion criteria were: (1) editorial articles; (2) systematic reviews/meta-analyses. Included studies were analysed and discussed.
Results Our review identified nine notable studies that detail advancements in AI/ML applications within orthopaedic surgery. Notably, a breakthrough ML model could predict hip arthroplasty failure years before conventional radiological indicators. Additionally, lumbar intervertebral disc grading using MRI was found to be 95.6% accurate using AI systems. Another interesting finding was a system to predict surgical candidacy for knee arthroplasty was found to have an accuracy of 93.8%.
Conclusions We suggest a framework by which a given ML model can be translated to other joints/applications. Many studies here offer validation of these techniques, and they seek further external validation by successfully implementing them as adjuncts alongside clinical decision making processes. where they can be validated and improved. Further research is necessary to understand the divergence in regulatory approvals between academia and private organisations.

Clinical research

19 Efficacy of REZUM on chronic retention: initial experience in a district general hospital

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Introduction REZUM is a minimally invasive surgical therapy for treatment of moderate to severe lower urinary tract symptoms (LUTS) secondary to benign prostatic enlargement. NICE recommends REZUM for a prostate volume of 30g-80 g. There is limited data on the use of REZUM in chronic retention (CR).
Methods Retrospective review of REZUM cases ($n=22$).
Results 14 patients underwent the procedure for LUTS (volume 30g-80 g $n=12$, 80g+$n=2$) and 10 patients for CR (PVR >200 ml). Immediate complications $n=4$ with equal distribution between both groups.

Catheter-free rate in CR was 70%. 3 months post-operatively there was a 52% reduction in median PVR. IPSS and QoL scores improved by 68% and 75%, respectively.

Overall, there was a 61% improvement in IPSS score and 80% improvement in QoL question; higher than demonstrated in previous studies. In the CR group, catheter-free rate is comparable with previous studies. The three catheter-free failures were the only patients on maximum pharmacotherapy pre-operatively. The most common reported adverse effects were haematuria and suspected infection. None of the group had complications beyond 30 days and none reported de-novo sexual dysfunction.
Conclusions REZUM is an easy-to-learn procedure. Comparable results over a small case series suggest the learning curve is small. REZUM is an option for patients with CR; however, PVR does not appear to correlate with symptom severity or with the likelihood of success. Objective measures do not always correlate with patient experience; documentation of PROMs is important for assessing the efficacy of this service.

33 Ureteric calculus in a left complete duplex system masquerading as an impacted stone

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Introduction Ureteric calculi are common urological problems. However, the management of stone disease varies considerably with patient choice and anatomy. There are few reports about ureteral calculi in patients with unilateral complete duplex kidneys managed by ureteroscopy. We aim to increase the awareness of urologists when investigating patients with similar symptoms.
Case Presentation A 28-year-old man presented on multiple occasions with recurring left flank pain. Multiple non-contrast computed tomography (CT) scans of the kidney showed a left 6-mm vesicoureteric junction stone. There were no other abnormalities seen on the scans. Following medical therapy and serial CTs and no radiological stone change, the stone was deemed to be impacted. He was scheduled for an elective removal of the stone. Intraoperatively, no stones were seen on initial cystoscopy and left ureteroscopy. Further examination assisted by fluoroscopy and close cystoscopy, revealed a bulge in the bladder wall. Incision into the bulge revealed a new ureteric orifice with a distal ureteric stone in a left complete duplex system. He was managed with laser fragmentation and insertion of ureteric stents.
Conclusions The case demonstrates the complexity of managing ureteric stones in a complete duplex kidney, The diagnostic limitations of non-contrast scans in identifying duplex systems, clinical outcomes and pitfalls were highlighted. It is important to consider contrast CT scans in patients with unusually persistent symptoms to outline the anatomy of the kidney and collecting systems.

41 Postoperative surgical site infection following laparotomy: PICO dressings vs standard wound dressings

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Introduction Post-operative surgical site infections (SSI) represent a targetable burden on healthcare systems, particularly in the context of abdominal surgery. PICO dressings for closed surgical incisions have been associated with decreased rates of SSIs in a variety of contexts, although opinion is still divided on their cost-effectiveness. We examined the incidence of significant SSI following the introduction of PICO dressings as a default wound dressing post-laparotomy compared to standard dressings.
Methods Retrospective analysis was undertaken of adult patients who underwent laparotomy in the 4 months prior to and following the introduction of PICO dressings as default at one NHS trust. 79 patients were included for analysis and were monitored for post-op SSI by day 7 and day 28, and SSI classified using the Southampton wound scoring system. The rates of significant SSI (grade III or above) were compared between groups, with risk factors for SSI also recorded.
Results In the pre-PICO group, 6 SSIs were detected in a sample of 30 patients by day 28. Uptake of PICO dressings in the post-PICO group

were 69% (34/49). Of those who received a PICO dressing, 7 patients developed an SSI by day 28, giving nil statistical significance between these groups (p-value = 1).
Conclusions There is no notable difference between development of higher-grade SSIs when using PICO vs standard dressings in this sample. However, we hypothesise that surgeons give preference to PICO dressings in higher-risk patients, and this may account for the relatively similar rates of SSIs recorded by selecting out lower-risk cases.

59 The safety of glycopeptide impregnated calcium sulphate following debridement implant retention and antibiotics (DAIR) of the infected total knee replacement

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Introduction To evaluate the safety and efficacy of local glycopeptide delivery of calcium-sulphate-based antibiotic agents in the management of periprosthetic joint infection following total knee arthroplasty.
Methods We identified 43 patients who underwent debridement, antibiotics, and implant retention (DAIR) for an infected total knee arthroplasty (TKA) between 2008 and 2014. Patients in the control group underwent conventional intravenous followed by oral antibiotic administration, while those in the intervention group underwent additional local antibiotic therapy via a calcium sulphate alpha hemihydrate matrix. Case notes and laboratory data were analysed to establish the safety and efficacy of local glycopeptide delivery.
Results Serum vancomycin levels were within the safe therapeutic range for all patients in the intervention group with no difference in serum assays between treatment groups (Intervention 7.7 mg/l: Control 8.0 mg/l, $p = 0.85$). Renal function for the study cohort improved at every time point post-operatively when referenced against pre-operative renal function ($p < 0.05$). There was no difference in renal function between intervention and control groups on day 1, 1 week, 6 weeks or 12 weeks post-operatively ($p = 0.78$, 0.89, 0.20 and 0.50).
Conclusions Local glycopeptide delivery via a calcium sulphate alpha hemihydrate matrix did not result in systemic adverse consequences. This delivery method did not raise the systemic level of glycopeptide nor adversely impact renal function. Notably, selection bias may contribute to masking clinically significant differences in post-operative outcomes.

71 Evaluating ENT junior doctors' proficiency in interpreting audiograms and tympanograms: a cross-sectional survey

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Introduction Audiology is essential in diagnosing and managing hearing and balance disorders, ENT senior house officers (SHOs) frequently manage hearing loss (HL) patients and need to understand and interpret audiograms and tympanograms. This study aimed to evaluate the ability of ENT SHOs to interpret basic audiograms and tympanograms.
Methods A questionnaire was sent to multiple hospital sites within the UK via Google Forms, SHOs were asked questions relating to audiology and matching audiograms/tympanograms. Questions were in both short answer and single best answer format. A total of 17 responses were collected.
Results 90.5% of SHOs reported not having received any formal audiology training. 30% were unable to describe how an audiogram was performed and just over half were able to correctly report upon the types of hearing loss patients may experience. SHOs struggled to correctly identify symbols and match audiograms to the correct diagnosis. Only 57.1% were able to identify conductive, sensorineural or mixed hearing loss audiograms. Similarly, when analysing tympanograms, only 66.7% were able to identify a normal tympanogram.
Conclusions The findings emphasise the need for improved audiology education for ENT juniors to enhance patient care. The research suggests incorporating audiology sessions into ENT departments' induction schedules to address this issue.

112 Cystolithotripsy under local anaesthetic – an effective treatment option for comorbid patients with encrusted ureteric stents

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Ureteric stents are used frequently in elective and emergency urology procedures. While offering an effective option for urinary drainage, they can also cause significant side effects and complications. We present the case of a 63-year-old female with a right-sided ureteric stent and distal coil encrustation. Following anaesthetic review and assessment of the patient's underlying comorbidities, a general or regional anaesthetic was deemed to be too high risk. Repeated imaging was arranged and cystolithotripsy was offered under local anaesthetic. The procedure was performed with successful fragmentation of the calcification and removal of the stent. The procedure was tolerated well by the patient, and she was discharged later that day. This case highlights that cystolithotripsy, performed under local anaesthetic, is a safe and effective treatment option for comorbid patients with encrusted ureteric stents.

129 Elective amputations as a sequelae of lower limb trauma: rationale for amputation and long-term complication rates

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Introduction To address the paucity of literature regarding outcomes and rationale for elective amputation in patients with lower limb trauma.
Methods Retrospective analysis of a database of all lower limb amputations secondary to trauma from a regional multidisciplinary amputee service in London. Clinical records were consulted for index trauma, date of amputation, reasons for amputation, evidence of re-operation, infection (superficial or deep), phantom limb pain and neuroma. Amputations were deemed elective if occurring > 6weeks post-traumatic injury.
Results 69 amputations in 66 patients were analysed. Mean age at index trauma was 38 years; mean age at amputation 45 years. The most prevalent mechanism of injury was RTA (41%), followed by fall from height (28%). Mean time from index trauma to amputation was 77 months (range 3-508 months). Chronic infection and chronic pain were the joint leading causes in proceeding to elective amputation (29%), with non-union (including infected non-union) accounting for 23%. Post-amputation rates of phantom limb pain, re-operation and phantom limb pain were 53%, 19% and 12% respectively. Infection was reported at a rate of 33%. Mean follow-up from time of amputation was 128 months.
Conclusions Chronic infection and chronic pain are the most common reasons for proceeding to elective amputation of a previously traumatised lower limb. The rates of re-operation, neuroma and phantom limb pain following elective amputation due to trauma are in keeping with those published for amputations secondary to diabetes or vascular disease. We report a higher rate of infection, likely attributable to chronic infection as a leading cause for amputation.

140 An analysis of colorectal cancer surgery waiting times during and after COVID-19 lockdown in a regional tertiary centre

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Introduction COVID-19 pandemic has impacted cancer treatment pathways nationally and globally at unprecedented scale. Recent literature demonstrates waiting times in the NHS for key diagnostic tests in cancer treatment being among the worst on record with significant delays in decision to treat and start of treatment. This retrospective cross-section analysis evaluates waiting times in a regional tertiary centre for elective colorectal cancer resection during and after COVID-19 lockdown.
Methods A retrospective analysis was performed on elective colorectal cancer surgery between February 2020 and August 2022. Data was obtained for dates of initial referral, diagnostic scans, and endoscopy. Data was analysed to calculate the average time of wait for scanning and endoscopy from time of referral.
Results A total of 528 patients underwent surgeries during this period and 409 patients were included in the study. 190 patients were referred during lockdown (Group A) and 219 patients had surgery after lockdown (Group B). Average time of wait for endoscopy was 20.6 days for Group A and 19.6 days for Group B. Average time of wait for CT-scan was 17.4 days for Group A and 15.6 days for Group B.
Conclusions Data obtained demonstrates an average delay in 1-day for endoscopy in staging during lockdown, and 1.8-days for diagnostic scans. This data will be valuable in colorectal cancer management pathways in planning for future pandemics and crises.

141 Factors influencing Novosorb integration and complications in non-burn wound reconstruction: retrospective observational study

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Introduction This study serves as an extensive case series, presenting foremost exploration of BTM (Novosorb) utilisation in non-burn wound reconstruction. Our primary objective is to evaluate the rates of successful BTM integration within real non-burn wound scenarios, coupled with a comprehensive analysis of post-BTM complications and their associated determinants.
Methods Retrospective observational study analysed data from 37 patients who underwent non-burn wound reconstruction using Novosorb (BTM) between January 2020 and September 2022. Patient demographics, wound relevant and outcomes such as complete wound healing and complications, with BTM loss defined as partial or complete removal.
Results n=37. Wound aetiology was as follows: acute trauma (51.4%), chronic wounds (24.3%), infections with tissue loss (16.2%), and soft tissue or skin cancer (8.1%). TBSA was 1%, most frequent wound site was lower limb (56.8%), whereas wound bed was muscle/fascia (48.6%). Median time to BTM was six days, with a successful integration rate of 74.3% (average time to integration 53 days). Time to complete wound healing was 101 days. Complications rate - 45.9% of patients: highest rates seen in cases involving malignancy (66.7%) and chronic wounds (55.6%). Age, gender and smoking history were not significantly associated with BTM loss. BTM loss rate in active smokers was 33.3% (n=4), whereas in non-smoking patients this was 36% (n=9).
Conclusions This study underscores Novosorb as a valuable addition to non-burn wound management, even in challenging clinical scenarios. Vigilant clinical monitoring and meticulous wound bed optimisation are essential, especially for elderly, diabetic, or co-morbid patients with chronic or malignant wounds.

142 The change in practice of aortic procedures following the introduction of hybrid theatre in a tertiary centre

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Background Hybrid theatres allow for a combined theatre and interventional imaging suite, facilitating higher quality angiography, the conversion of endovascular procedures to open and the simultaneous employment of open and endovascular technique. We compared treatment approaches and exposure to radiation following introduction of our hybrid theatre.
Methods 6-year retrospective review of all aortic interventions between January 2015 and March 2021 at a single tertiary vascular unit, using a prospective operative database were included. Medical records and imaging were manually screened to confirm the aortic procedures performed.
Results 3885 vascular procedures were conducted over 6 years. 184 aortic cases were performed in the pre-hybrid period while 886 were performed after the introduction of hybrid theatre.

The proportion of endovascular procedures performed increased from 61% in the pre-hybrid theatres, to 97% in the new hybrid theatres. Within main theatres (c-arm) in the post-hybrid period there were 369 aortic cases, with 94% (347) open and 6% endovascular or combined. Complex procedures such as TEVAR, FEVAR and ChEVAR/ChEVAS shifted to hybrid theatres while 95% of endovascular procedures were EVAR/EVAS in main theatres in the post-hybrid period. Average FEVAR DAP (Gy cm^2) vastly reduced (403 vs 233 (p<0.005)) suggesting benefit from radiation exposure with more complex endovascular procedures.

149 Review of natural history and management of gallstone ileus: case series

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Introduction It is an uncommon cause of small bowel obstruction, presents 1%–5% of adult population. It is a rare complication of chronic cholecystitis which leads to cholecysto-enteric fistula and impaction of gallstone in GI tract leading to mechanical bowel obstruction. Our aim is to report the natural history and management of this condition in the District Hospital.
Methods Retrospective 10 years of data was collected with CT findings of intestinal obstruction with gallstone ileus. It included 10 patients over 10 years whose medical records were evaluated retrospectively.
Results Majority of patients were female (90%, n=9) with mean age of 81.3 years (range 61–96) although 90% of population were above 70 years. Presenting complaints were mostly pain and vomiting (n=10). Onset of symptoms between 3–5 days. The site of obstruction was mostly terminal ileum (n=9) with exception of one case in sigmoid proximal to stricture and size of stone was ranging from 1.2 to 3.8 cm (n=6). Moreover, most of the patients had previous history of gallstone (n=7) with one post cholecystectomy status. During routine investigations 30 % of patients had deranged LFT and 60% had raised inflammatory markers (WBC, CRP). Intervention as enterolithotomy was the preferred approach (n=8, 1 lap, 7 open) and conservative treatment was performed in two cases.
Conclusions Elderly female patients are more prone to have gallstone ileus particularly with a past medical history of gallstone and the preferred management option is enterolithotomy which could be open or laparoscopic depending on expertise of the surgeon.

163 Predicting difficult laryngeal exposure (DLE) during operative microlaryngoscopy: evaluating the predictive value of Laryngoscore in a single centre UK population in a Scottish teaching hospital

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Introduction Evaluating the predictive value of Laryngoscore in a single centre UK population in a Scottish teaching hospital.
Methods 356 patients undergoing elective microlaryngoscopy were assessed pre-operatively using a standardised assessment protocol called the Laryngoscore in which patients are given a score based on the score the patients were categorised into five classes (Class I to

Class IV) that were based on the anterior commissure (AC) visualisation to distinguish between good and difficult laryngeal exposure; where Class I–II were identified to be Good Laryngeal Exposure (GLE) and Class III-IV were identified to be Difficult Laryngeal Exposure (DLE).
Results The mean score for GLE was calculated to be below 5, therefore this was taken as the cut-off point to predict DLE. When the Laryngoscore was <5, GLE was observed in 71.1% of our patient population.
Conclusions Laryngoscore is a good predictor for difficult laryngeal exposure. This information can help clinicians during surgical planning and patient counselling pre-operatively to evaluate if surgery is possible. Additionally, if difficult laryngoscopy can be predicted, the surgical team can anticipate the appropriate instruments required which ensures patients safety and positive outcomes for patients as well.

165 Laparoscopic management of adhesional small bowel obstruction: Is it feasible?

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Introduction Laparoscopic adhesiolysis for adhesional small bowel obstruction (aSBO) is being performed more frequently. However, there is limited evidence on application and outcomes of management of aSBO.
Introduction The aim of this study is to investigate the feasibility and outcomes of laparoscopic adhesiolysis (LA) for aSBO.
Methods This was a retrospective cohort study conducted in a single large laparoscopic centre over the period of three years, using electronic-record data of patients admitted with aSBO. Non-adhesional SBO, large bowel pathology, SBO managed solely conservatively or laparotomy, were excluded from this study. Outcomes include rate and reason for conversion to laparotomy, rate of enterotomies, complications and length of stay (LOS). LOS was compared using Kruskal-Wallis test.
Results 74 patients undergoing LA for aSBO were included. 69(81.2%) of patients with CT-proven aSBO were operated by laparoscopic approach. The conversion rate to laparotomy was 32%, due to inability to proceed (59.1%), planned 'laparoscopy first' (22.7%) or due to intra-operative emergency (18.2%).

Patients undergoing LA had a reduced LOS compared to the converted subgroup (p=0.04). The reported intraoperative complications included enterotomy (32%) where 14.5% of those required a bowel resection. Postoperatively, 20.3% patients had prolonged ileus, 5.8% anastomotic leak, 5.8% required re-operation, 8.7% of patients were re-admitted with disease recurrence and 7.4% in-hospital mortality.
Conclusions This study indicates that laparoscopic adhesiolysis could be safe and feasible in certain situations for selected group of patients with CT-proven single transition point. Future research in laparoscopic units is required, directly comparing with laparotomy and converted subgroups.

167 Follow-up after successful Pavlik harness treatment for DDH: Is two years enough?

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Introduction There is a lack of clarity regarding the optimum duration for following up children treated successfully for developmental dysplasia of the hip in a Pavlik harness. The purpose of this study was to examine whether children with normal clinical and radiological findings at 2 years of age, ever show deterioration by 5 years of age.
Methods Data was collected prospectively on all babies treated in Pavlik harness at our institution over an 18-month period, with follow-up to 5 years. Standard anterior-posterior radiographs of both hips were taken at 1, 2 and 5 years of age. A normal hip radiograph was defined as acetabular index (AI) within normal range adjusted for age, symmetrical and adequately sized ossific nuclei, and an IHDI grade of 1; plus, a centre-edge angle greater than 20° on the radiograph taken at 5 years of age.
Results There were 170 hips (in 101 babies) successfully treated with a Pavlik harness and had radiographs available for analysis. Of these, 92% of hips were radiologically normal at 2 years of age and 100% were radiologically normal at 5 years of age. Every child who had normal radiographs at age 2 years, had normal clinical and radiological examination at 5 years, with none having any intervention.
Conclusions This study supports the BSCOS consensus that, following successful treatment with Pavlik harness, it is safe to discharge at 2 years of age. Longer follow-up is not necessary if clinical and radiological parameters are normal at 2 years of age.

168 Shenton's line in DDH: Useful or useless?

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Introduction The purpose of this study was to explore whether a broken Shenton's line does truly indicate underlying pathology in children with developmental dysplasia of the hip (DDH).
Methods Data was collected prospectively on all babies treated solely in Pavlik harness at our institute over an 18-month time frame. Babies were included in the study if they were clinically and radiologically normal at 5 years of age and had had anterior-posterior radiographs available from three time points: 1, 2, and 5 years of age.
Results There were 101 children with full imaging available for inclusion in this study. 55 (54%) of these children had a broken Shenton's line(s) on radiographs at 1 year of age, 27 (26%) at 2 years of age, and 13 (13%) at 5 years of age, despite all children being clinically and radiologically normal, with all other radiological parameters within normal range. 14 (44%) of the 32 children with unilateral DDH had a broken Shenton's line in the contralateral, non-diseased hip, at one or more time point.
Conclusions Using Shenton's line to interpret normality or pathology in paediatric hips is no better than flipping a coin. It should be interpreted with caution in the radiological assessment of children with DDH. A broken Shenton's line appears to be a normal radiological variant in this age group.

171 Meta-analysis of randomised controlled trials comparing laparoscopic with open mesh repair of recurrent inguinal hernia

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Background Recurrent inguinal hernia repair accounts for 15% of cases. Laparoscopic procedures are preferred for their pain reduction and simultaneous repair of contralateral herniation. However, open repair under local anaesthesia is still favoured by some surgeons. The ideal technique for recurrent hernia repair is still debated.
Introduction Compare the outcomes of open tension-free repair and laparoscopic repair for recurrent inguinal hernia following a previous mesh repair. The key factors include operative time, infection rates, postoperative pain scores, recurrence, and chronic pain.
Methods A meta-analysis was conducted on prospective randomised controlled studies published from 2008 to 2018, focusing on open tension-free and laparoscopic (mainly TAPP) repair for recurrent inguinal hernia after prior mesh repair. PubMed/Medline and ScienceDirect databases were searched using relevant keywords for studies that provided data on operative time, infection, postoperative pain scores, recurrence, and chronic pain. Only studies providing data on at least one of the primary outcome measures were included.
Results The meta-analysis revealed that the laparoscopic group had significantly lower postoperative pain scores. Although laparoscopic repair took longer, the difference in operative time was not statistically significant. The re-recurrence rate was significantly lower in the laparoscopic group. However, there was no significant difference in chronic pain. Two studies discussed wound infection, but no statistically significant difference was observed.

Conclusions Laparoscopic repair offers the advantage of reducing recurrence risk and postoperative pain scores. However, there was no significant difference in outcome regarding chronic pain, surgical site infection, or operative time.

177 Improving the detection of low-grade appendiceal mucinous neoplasms (LAMNs) to reduce pseudomyxoma peritonei (PMP) risk

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Introduction Low-grade appendiceal mucinous neoplasms (LAMNs) are extremely rare tumours found in the appendix. The incidence rate is around 0.7-1.7%. They are characterised by circumferential, low-grade, proliferating mucinous epithelium. Focal loss of the lamina propria and muscularis mucosa are key to diagnosis. Lack of lymphoid tissue, a 'pushing' pattern of growth, and submucosal fibrosis are also often seen. Due to the rare nature of LAMNs, their diagnosis is often missed until surgery. LAMNs have a risk of rupturing and disseminating mucin and neoplastic cells intraperitoneally. This can lead to a condition called pseudomyxoma peritonei (PMP) which is associated with high mortality. Thus, early detection and appropriate management are key.
Methods LAMN cases over the last ten years were assessed to ascertain means to improve detection and outcomes. The presentation, radiological findings, and histology were assessed. Methods to improve detection were implemented.
Results Four cases were identified. Three had presented to A&E with sudden onset RIF pain, and two of them had accompanying pyrexia. Their initial indication for surgery was acute appendicitis with the LAMN only discovered during surgery and diagnosed post-operatively.

The fourth case was a suspected mucocele due to chronic symptoms and multiple scans. CTAP for all patients had showed dilated appendices.
Conclusions Pre-surgery identification of LAMNs was difficult in three of the four cases. This was due to low suspicion for LAMNs, non-unique presentations, and unclear radiological findings. This increases the risk of PMNs, thus highlighting the need for increased awareness and improved early detection techniques.

179 Effectiveness of mini-laparotomy vs laparoscopic cholecystectomy: an updated meta-analysis of 2,964 cholelithiasis patients

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Introduction This study aimed to update the evidence regarding the comparison between mini-laparotomy cholecystectomy (MC) and laparoscopic cholecystectomy (LC) as treatment options for cholelithiasis.
Methods An updated systematic review and meta-analysis were conducted, utilizing PubMed (MEDLINE), Scopus, Web of Science, Embase, and Cochrane Library databases up until May 25, 2023. Eligibility criteria, quality assessment, and data extraction were performed, followed by statistical analysis using RevMan version 5.4. The study included 14 records encompassing 2,964 participants, with MC (n=1,458) and LC (n=1,506) groups.
Results LC demonstrated significantly longer operation times compared to MC (MD=8.77, p=0.03), along with reduced hospital stay (MD=-0.39, p=0.02) and shorter time to return to normal activity (MD=-2.41, p=0.01). However, no significant difference was observed in the time to return to work or recreational activity (MD=-1.55, p=0.13). LC exhibited higher rates of conversions to open laparotomy (RR=1.13, p=0.61), bile leaks (RR=0.45, p=0.02), infectious complications (RR=0.64, p=0.03), and postoperative pain (RR=0.77, p<0.00001) compared to MC.
Conclusions This study underscores the multifaceted nature of both LC and MC procedures, emphasizing their respective benefits and potential complications. These findings offer critical insights for clinicians in determining the optimal approach for cholecystectomy patients.

211 COALA Trial: changing outcomes after low anterior resection in colorectal cancer by anal sphincter prehabilitation prior to reversal of ileostomy – a parallel explanatory (COALA-1) and pragmatic trial (COALA-2) protocol

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Introduction Low Anterior Resection Syndrome (LARS) significantly impacts quality of life in rectal cancer survivors and can be complex to treat. Prehabilitative programmes incorporating preoperative education and pelvic floor muscle training (PFMT) may decrease incidence of major LARS. This trial aims to investigate its role and introduce a pragmatic mode of delivery using an electronic application.
Methods COALA-1: Standardised assessment and goals-based intervention was developed through consensus meeting between pelvic floor clinicians from multiple centres. Prior to receiving intervention, participants will undergo risk stratification using POLARS, then randomised to PFMT vs standard care. Targeted sample size of 104.

COALA-2: Participants will be randomised to PFMT will be delivered through an electronic application vs standard care. Sample size calculation was based on a halving of above effect. Targeted sample size 450.
Outcome Measures Incidence of major LARS will be measured at 4 weeks, 6 months and 1 year post reversal of ileostomy using LARS score. Secondary outcome of quality of life will be measured using the eQ5D-5 L at the same time points. Adherence is monitored through physiotherapy assessments (COALA-1) and monitoring use of the app (COALA-2).
Conclusions Although recent studies have shown improvement in LARS symptoms with PFMT, there are few trials assessing PFMT in a preventative context. The CARRET study and PARiS trials are in progress, involving multimodal interventions which may affect participant adherence. The novelty of COALA is its focus on pragmatism to develop an intervention widely applicable to clinical practice.

ANZCTR Registration ACTRN12623000774628p & ACTRN12623000775617p.

231 Evaluation of use, cost, and carbon footprint impact of routine histopathological analysis of anastomotic doughnuts following colorectal surgery: a 3-year review

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Introduction This study aimed to assess the impact of routine histological examination of stapled colorectal anastomotic doughnuts in patients undergoing Rectal Cancer Surgery (RCS). Justification of biopsy examination could form part of the strategies of NHS net zero practice with effort to reduce wastage and carbon footprint.
Methods A data analysis of all patients undergoing RCS during 2019–2021 at our institute was performed. We also analysed the cost of preparing and reviewing histology slides.
Results 52 patients underwent anterior resection during the aforementioned period. Doughnuts were sent in 37 (71%) patients. 23

(62%) patients were male, and 14 (38 %) were female. The median age at diagnosis was 68 (range 54-84) years. All resected specimens were reported as adenocarcinomas.

Of the 37 patients, 18 (49%) underwent low anterior resection and 19 (51%) underwent high anterior resection. Proximal doughnuts were sent in 26 (70%) patients whereas distal doughnuts were sent in all cases. Mean distal resection margin from tumour was 22 mm (range 6-45 mm) and the shortest distance from the tumour to resection margin was 6mm. Each doughnut required 3 slides, each costing £50 and requiring 82 minutes to fix and read. This incurred a cost of £13,650 and required 19,656 hours of preparation time. All of the doughnuts as well as resection margins were negative for malignancy.

Conclusions Routine histopathological examination of doughnuts is time and cost-intensive; however, it provides little or no clinical value (particularly analysis of the proximal doughnut). Distal doughnuts should only be sent for histological examination in exceptional circumstances.

239 Outcomes of dual mobility bearings in revision total hip replacements: a consecutive single-surgeon case series

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Introduction The aim of this study was to evaluate the use of dual mobility bearings in revision total hip replacement. The primary outcome was the rate of dislocation. Secondary outcomes included the rate of re-operation for any reason, surgical complications, medically related adverse events, 90-day mortality rate, and radiographic cup abduction and anteversion angles.

Methods A retrospective single-surgeon case series of 51 consecutive operations in 46 patients that underwent revision total hip replacement using dual mobility bearings with a minimum follow-up of 6 months.

Results Early dislocation occurred in 1 case and there were no intra-prosthetic dislocations at a mean follow-up of 18 months. The rate of re-operation for any reason was 6/51 cases and the post-operative infection rate was 2/51 cases. Medically related adverse events occurred in 3/51 cases. The 90-day mortality rate was 1/51 cases. Four cases had cup abduction and anteversion angles outside of the safe zones. There were no dislocations in these patients.

Conclusions This case series demonstrates a low dislocation rate in the early postoperative period for dual mobility bearings in revision total hip replacement. Dual mobility bearings show promise as an early low dislocation implant in revision total hip replacement. It remains to be determined whether dual mobility bearings are low-wear implants in the long term.

245 Fracture-related infection in the NHS: an analysis of healthcare utilisation and costs

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Introduction A consensus definition of fracture-related infection (FRI) has been created with the aim of standardising diagnosis and eliminating heterogeneity that prevents accurate comparison between existing studies. FRI remains one of the most challenging complications in musculoskeletal trauma surgery and carries a significant cost burden. A review of UK finances has not been completed utilising consensus diagnostic criteria. The goal of this study was to investigate the hospital-associated healthcare cost related to the treatment of FRI within an NHS major trauma centre.

Methods Through retrospective case-control analysis, 1,240 patients with close fractures were identified. Of those, 21 patients with FRI were compared to 63 uninfected patients. Patients were matched based on fracture location, type of procedure and proximity in age. The costs assessed included hospitalisation, imaging, outpatient consultation, pharmaceuticals and procedure charges. Cost data was retrieved from healthcare resource group (HRG) guidelines, NHS Business Service Authority's (NBSA) prescription rates and internal costings.

Results The FRI group were found to incur a 2.51 increase in total medial healthcare cost compared to the control group (£22,058 vs £8,798 [$p<0.001$]), which was primarily due to increased procedural costs (£13,020 vs £6,291 [$p<0.001$]) and length of hospital stay (£7,552 vs £2,124 [$p<0.001$]).

Conclusions While diagnosis of FRI has a more rigorous definition following the new consensus, prevalence and cost outcomes are similar to previous studies. Given the deficiency in funding and ongoing challenges of resource allocation to the NHS, it is prudent to incorporate studies such as this into stratifying departmental budgets and quality improvement.

246 Segmentectomy or wedge resection in pulmonary metastatectomy

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Introduction Wedge resection is the most common operation for pulmonary metastases. Segmentectomy can be used when a wedge will not provide complete oncological clearance. We reviewed pulmonary metastatectomy practices and outcomes in our unit.

Methods Our study included 104 patients who underwent segmentectomy (n=14) or wedge resections (n=104) without preoperative chemotherapy for pulmonary metastases from a distant primary between January 2015 and December 2019.

Results Patients who underwent segmentectomies were similar in age (mean 69 years) to those who had wedge resection (mean 61 years), with no significant difference in disease (n=2 vs n=36, p=0.07), diabetes (n=2 vs n=10, p=0.5) and COPD (n=1 vs n=2, p=0.36). Patients who had segmentectomy had longer average length of in hospital stay (4 days) compared to those who had a wedge resection (mean=3 days). There was a higher average blood loss with segmentectomies (82ml) than wedge (40ml) P<0.05. Reviewing survival, there is an apparent advantage with segmentectomy, particularly in the midterm follow-up, although this did not reach statistical significance.

Conclusions Wedge resection is the mainstay of pulmonary metastatectomy. Segmentectomy seems to confer a survival benefit compared to wedge resection, although this was not statistically significant.

248 Replantation of amputated right ring finger secondary to avulsion injury: a unique case exploring microsurgical principles in hand trauma

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We report the case of a right-hand dominant, 48-year-old Irish male who sustained a traumatic amputation of his right ring finger, to the level of the middle phalanx with extensive soft tissue degloving categorised as an Urbaniak class III injury. The patient attended the emergency department by ambulance an hour after the incident with the amputated finger kept on ice. He underwent a replantation procedure involving K-wire stabilisation, flexor digitorum superficialis to profundus tenodesis, digital nerve repairs, and radial digital artery and dorsal vein anastomoses. He received leech therapy to manage post-operative venous congestion and had excellent results. This case demonstrates the complexities of hand trauma management, novel revascularisation, and reconstructive techniques, and highlights the importance of rapid and accurate evaluation of avulsion injuries to obtain the good functional outcomes for patients. Moreover, it sheds light on challenges in deciding when to replant and when to pursue digit terminalisation.

250 Topical tranexamic acid wash to reduce blood in total hip arthroplasty - do the NICE guidelines work?

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Introduction Many randomised controlled trials and meta-analysis studies have presented the efficacy of tranexamic acid (TXA) without an increase of complications. Two of the surgeons adopted the NICE guidelines on topical TXA relatively early in our Trust and report the blood loss, drop in Hb, transfusion rate, length of hospital stays and occurrence of DVT/PE using this protocol in hip replacements.
Methods 100 total hip replacements performed by two arthroplasty surgeons using both IV and topical tranexamic acid wash were included in the study. No revision joint replacements were included. Data was collected on total blood loss, hidden blood loss, transfusion rate, haemoglobin drop, length of hospital stay and the occurrence of deep venous thrombosis (DVT)/pulmonary embolus (PE). Data was also collected on any readmissions related to the formation of haematoma or increased bleeding from the wound site.
Results TXA leads to statistically significant reduction of peri and postoperative bleeding and in that way decreases blood transfusion rates and the infection risk. Topical and intravenous (IV) use of TXA revealed similar results, with no increase of deep venous thrombosis.
Conclusions Blood loss control with TXA, a synthetic analogue of the amino acid lysine, may be an excellent and safe alternative to allogeneic blood transfusion after total hip arthroplasty with no haematoma formation or increased risk of DVT/PE.

253 Predicting rotator cuff tears in patients with shoulder dislocations combined with an isolated fracture of the greater tuberosity by means of radiographic characteristics

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Introduction To assess whether radiographic characteristics of the greater tuberosity fragment can predict rotator cuff tears in patients with anterior shoulder dislocations combined with an isolated fracture of the greater tuberosity.
Methods A retrospective single-centre case series of 61 consecutive patients that presented with anterior shoulder dislocations combined with an isolated fracture of the greater tuberosity between January 2018 and July 2022. Inclusion criteria: patients with a traumatic anterior shoulder dislocation associated with an isolated fracture of the greater tuberosity with a minimum follow-up of 3 months. Rotator cuff tears were diagnosed using magnetic resonance or ultrasound imaging. Greater tuberosity fragment size and displacement was calculated on radiographs using validated methods.
Results The case series was composed of 22 men and 39 women with a mean age of 65 years (29–91 years). The mean follow-up was 15 months (3–60 months). A rotator cuff tear was diagnosed in 14 patients (23%). The mean greater tuberosity fragment length was 23.4 mm in rotator cuff tear patients vs 32.6 mm in patients without a tear (p=0.006). The mean greater tuberosity fragment width was 11.1 mm in rotator cuff tear patients vs 17.8 mm in patients without a tear (p=0.0004). There was no significant difference in the supero-inferior and antero-posterior fragment displacement between the two groups.
Conclusions In patients with shoulder dislocations combined with an isolated fracture of the greater tuberosity, rotator cuff tears are associated with a smaller greater tuberosity fragment size.

274 Assessing the feasibility and outcomes in laparoscopic nephrectomy of large renal masses in complex patients treated with renal artery pre-embolisation

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Introduction High bleeding risk can preclude a minimally invasive approach to large renal masses in complex patients. Renal artery pre-embolisation can reduce this risk to enable a laparoscopic approach. This case series aims to assess the feasibility and outcomes of laparoscopic nephrectomy in complex patients treated with pre-embolisation.
Methods A prospective database of patients treated with renal artery pre-embolisation from January 2021 to December 2022 at a single tertiary urology unit was analysed. The selection criteria were large renal mass with complex vascular anatomy along with patient factors e.g. Jehovah's Witness. The outcome measures were length of stay (LoS), and post-operative morbidity and mortality. Patient and disease factors were recorded.
Results 7 patients were identified with a mean age of 59. Average tumour size was 11.5cm. Average Co-Morbidity Index was 4.9 (2–9) and average ASA was 2 (1–3). Mean surgical time was 3.25 hours (2–4.75). Average LoS was 7 days (4–21). The 21-day LoS was due to respiratory complications in a heavy ex-smoker, otherwise average LoS was 5 days. Average blood loss was 247mL (0–1000). The 1L blood loss likely represents a case of failed embolisation. The patient however did not require blood transfusion and LoS was only 4 days. No patients required blood transfusion. No 30-day mortality or re-admissions was recorded.
Conclusions As demonstrated in prior studies, pre-embolisation would allow safe minimally invasive surgeries on complex patients, resulting in lesser morbidity and quicker discharge.

277 How safe is it to follow-up Bosniak 2 cysts?

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Introduction The follow-up of Bosniak 2 cysts is controversial due to their malignant potential. This is compounded by the paucity of published data on the long-term follow-up of these cysts. We present our series of patients who have been under follow-up.
Methods This is a retrospective analysis of 57 patients who were followed up for incidentally detected Bosniak 2 cysts over the period of January 2007 to December 2014 at a single tertiary urology unit. Of the 57 patients, 36 patients were included in the analysis as 7 patients were lost to follow-up and 12 patients have died within less than 5 years of diagnosis. 2 patients died after 5 years of follow-up and have been included in the study. All the patients had an initial CT followed by 6 monthly ultrasound scan for 2 years and thereafter annual ultrasound.
Results Mean age was 69 years (Range: 40–94 years). 20 were male and 16 female patients. Average follow–up was 4.7 years (range: 1–5 years). 34 patients have completed at least 5 years of follow-up. Cysts in 29 patients have remained stable with no change in their dimensions or Bosniak classification. There was a slight increase in the cyst dimensions in 4 and decrease in 2 patients. In one patient, the cyst progressed from Bosniak 2 to 3 after 4 years.
Conclusions Bosniak 2 cysts can safely be followed up as long as they are regularly imaged. Larger studies with more patients and longer follow-ups are required to support our findings.

Collaborative research

126 Assessing the impact of a collaborative online teaching series by students and surgeons on enhancing clinical anatomy proficiency among medical students

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Background In clinical anatomy, online education has been studied for its role in teaching anatomical concepts to students. Yet, the collaborative potential of staff-student synergy in delivering clinical anatomical education remains unexplored. This study investigates a novel approach in clinical anatomy education by exploring the collaborative engagement between academic staff and students,

aiming to enhance the delivery of anatomical education within a clinical context.
Methods 193 participants from 61 institutions across 20 countries, consisting of 184 medical students and 9 junior doctors, participated in at least one of eight surgical specialty sessions. These sessions encompassed various fields such as neurosurgery, orthopaedics, maxillofacial, general surgery, cardiothoracic surgery, vascular surgery, obstetrics & gynaecology (O&G), and ENT procedures. Sessions integrated student-led anatomical insights and surgeon-led procedural discussions with visual aids. Pre- and post-conference questionnaires, along with anatomical quizzes, gauged participant interest and knowledge. Statistical significance was determined via independent *t*-tests.
Results Post-session, substantial quiz performance improvements were evident across all sessions, with an average improvement of 45.6% (range: 13%–102%). Furthermore, the post-session findings unveiled an elevated interest in specialty across all disciplines, with a mean rise of 14.25% (range: 7%–31%). 99.2% of participants expressed their intent to recommend this teaching format to others.
Conclusions Collaborative staff-student engagement significantly enhances anatomical knowledge and specialty interest, emphasizing the unexplored potential of staff-student synergy in clinical anatomical education. Subsequent research should explore the enduring knowledge retention resulting from this approach.

210 Developing a prehabilitative pelvic floor muscle training programme for prevention of low anterior resection syndrome in rectal cancer patients

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Introduction Prehabilitative physiotherapy have been shown to improve post operative outcomes in hip, knee, and spinal surgery. Pelvic floor rehabilitation has been shown to decrease the incidence of major low anterior resection syndrome (LARS). However, its role in prehabilitation has not been well established. This study aims to develop a protocol which can be applied to all patients undergoing sphincter sparing surgery for rectal cancer.
Methods A virtual consensus meeting was held between pelvic floor clinicians (including physiotherapists, surgeons, and gastroenterologists) from multiple centres in the UK and Australia. Procedure and aims of each physiotherapy appointment were discussed in detail to obtain consensus regarding patient assessment, advice given, goals of prescribed exercise regimen, adjuncts used and duration of treatment.
Results A standardised history and assessment protocol was developed, involving 6 face to face appointments in 12 weeks perioperatively. Pertinent dietary and lifestyle advice was also standardised, based on specific patient symptoms of either incontinence or urgency.

While the exercise regimen is tailored to each patient's individual needs, goals of treatment, which included improvements in the following domains strength, endurance, relaxation, proprioception and coordination should be stated.

Adjuncts of electromyography or transperineal ultrasound should be used to provide biofeedback, in addition to assessment by anal palpation.
Conclusions While complete uniformity of a pelvic floor prehabilitation protocol is neither pragmatic nor applicable to clinical practice, standardisation of assessment, advice and treatment goals allows consistent delivery of what should remain an individualised intervention. This concept will be further assessed in an upcoming clinical trial.

Early-stage innovation

4 The role of three-dimensional printing in person specific implants following traumatic injury

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Introduction Trauma is one of the leading causes of disability following injury in the UK and often requires extensive surgery and revisions to counter the injury. Injuries sustained are complex and current orthopaedic implants cannot always account for the fracture injury. Three-dimensional printing is a novel technology that allows for the patient's anatomical variance and fracture to be accounted for. Several benefits have been suggested including reduction in total theatre time, reduction in revision surgery, reduction of intraoperative fluoroscopy use, as well as reduction in total blood loss. This systematic review aims to illustrate the feasibility of three-dimensional printing technologies to produce person specific implants (PSI) following traumatic injury.
Methods Several scientific databases were used in the acquisition of literature relevant to the aims of this systematic review. Initial search criteria including language, research after 2010, and human or cadaveric type were imposed before additional search tags were used along with Boolean operators such as surg*, trauma, three-dimensional, and print*.
Results Six papers were selected, and data extracted as to the feasibility of the technology's use in trauma surgery. Secondary data was also extracted where possible pertaining to elements such as production materials, adequacy of implants compared to commercial implants, and manufacturing process.
Conclusions Three-dimensional printing of person specific implants is possible and feasible in the realm of trauma surgery, however, given the small sample sizes and the heterogeneity of data at present, further research must occur on a larger scale to fully cement the technology in the surgical field.

58 Ethics and AI in surgery: unveiling ChatGPT's promise and perils – a comprehensive review

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Introduction To analyse the ethical dimensions surrounding the incorporation of ChatGPT within surgery. The review further examines the ethical challenges and potential risks arising from the integration of artificial intelligence (AI) and Large Language Models (LLM) technologies in surgical practice, underscoring the importance of ethics as a guiding framework.
Methods A search on PubMed identified eight articles meeting predefined criteria for significance and relevance. Each article underwent thorough examination to extract crucial details concerning research objectives, methodologies, key findings, and limitations of the respective studies.
Results Among the total of eight studies, generative AI's potential in neurointerventional surgery was examined, revealing promises and perils. Another study delved into generic medical knowledge, highlighting its benefits, risks, and ethical dilemmas.

In aesthetic medicine, a paper explored LLMs realm, spotlighting patient consultations, educational value, and the ethical discourse it engenders.

The ophthalmology domain showcased ChatGPT and DALL-E 2, underscoring the trade-offs between scientific robustness and image quality. Meanwhile, Cheng *et al.* meticulously dissected GPT-4's viability as an AI surgical assistant for joint arthroplasty, uncovering its multifaceted roles.

Another study introduced ChatGPT's prowess in plastic surgery, shedding light on its human-like responses and potential benefits. In Gynaecology and Colorectal surgery, findings remained relatively sparse.
Conclusions ChatGPT holds tremendous promise for enriching surgical practices, its ethical integration mandates rigorous contemplation. Collaborations between medical practitioners, AI developers and regulatory bodies are indispensable for leveraging AI's benefits, ensuring patient welfare, upholding ethical standards and preserving the integrity of surgical practice.

100 ERCP and plastic biliary stenting for choledocholithiasis: an assessment of outcomes

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Introduction The purpose of this study was to compare Trust practice with international guidelines, identifying potential causes for prolonged stent placements among patients with biliary calculi, and to provide a possible solution.
Methods Patients were selected across a 3-year period from NHS secure server records. The indications for ERCP were analysed and cases with temporary plastic stenting inserted for ductal disease were scrutinised. Out of the 1,118 ERCPs performed within the Trust, 281 patients had undergone plastic stenting. In some cases, patients were not deemed to be suitable for a cholecystectomy, and therefore plastic stents were accepted as the ceiling of their care.
Results Following analysis, we identified 29 patients who had plastic biliary stents in situ for a period of over 6 months, while awaiting their definitive treatment, a cholecystectomy. 75 individuals had undergone their cholecystectomy following stent insertion, of which 57 patients had their stents removed, either by ERCP or OGD. 18 patients, therefore, still had their plastic stents in situ. A closer scrutiny of these cases found a multifactorial blend leading to these delays in the next step, including cases of incomplete or forgotten follow-up wherein the stent remains *in situ*.
Conclusions This first-cycle audit has identified that the Trust is not meeting recommendations in terms of indwelling biliary stent duration, a likely issue affecting many sites across the UK recommendations of a national stent register is put forth to keep track of inserted stents as well as modification to the surgical operation note proforma to include 'Stent Status' as a reminder.

106 Grade II and grade III oligodendroglioma and astrocytoma – peripheral blood profiling

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Introduction Low-grade oligodendroglioma (LGO) and diffuse astrocytoma (DA) are adults' second most common gliomas with high disease progression. Inflammation in the tumour microenvironment (TME) can affect tumour progression.

Previous studies have demonstrated the potential of liquid biopsies. Inflammatory cytokines in glioma TME may have induced systemic inflammation. Nevertheless, the applicability of monitoring glioma TME by testing the peripheral cytokines was not previously explored.
Methods IL-1α and IL-1β data were obtained from our pilot study using immunology multiplex assays. CRP was assayed with an enzyme-linked immunosorbent assay (ELISA). Immunohistochemistry (IHC) was utilised to localise IL-1α and IL-1β in tumour tissues and quantify glioma-associated microglia/macrophages (GAMMs) with ImageJ. RNAseq data from The Cancer Genome Atlas and Chinese Glioma Genome Atlas datasets were used to validate our findings.

Statistical analyses: Unpaired t-tests, Welch's t-tests, Mann-Whitney U-tests, Pearson and Spearman correlation analyses.
Results A total of 21 patients and 14 controls were included. Plasma IL-1α levels were significantly higher in all the patients (n=21) than all the controls (n=14), and IL-1β levels were significantly higher in patients with primary LGO and DA (n=9) than in the age and gender-matched controls (n=8). There was no positive correlation between plasma IL-1α and IL-1β and peripheral inflammatory cells. The RNAseq datasets validated the production of IL-1α and IL-1β in the tumour. IHC localised IL-1α and IL-1β production in vascular endothelium and neoplastic cells.
Conclusions Glioma TME causes systemic inflammation. Plasma IL-1α and IL-1β are originated from vascular endothelium and neoplastic cells in the tumour.

132 Use of sensors and their role in orthopaedics

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Introduction The number of medical sensors has significantly risen globally in the last several years and demand is expected to continue rising. The purpose of this article is to review the literature on sensors used within orthopaedics and identify any procedures which would benefit from their use.
Methods The following electronic bibliographic databases were used as sources: Medline, Embase, Web of Science Core Collection, The Cochrane Library and Google Scholar.
Results Recent advances in 2019 in gait analysis technology include use of small and portable sensors such as pressure sensors, electrogoniometers, gyroscopes and accelerometers. Secondly, fiber Bragg gratings and strain gauges have been helpful when studying the effects of fracture fixation plates, thus determining the strains in synthetic femurs. Thirdly, the use of sensors for soft tissue balancing includes radiofrequency-based electronic load sensors used in total knee arthroplasty to correct knee load balancing instantly. Finally, sensors have been used to improve treatment protocol compliance e.g., electronic sensors implanted into compressive stockings to identify the wearing times following foot and ankle surgery.
Conclusions Many studies have shown sensors used to improve gait parameters, knowledge of biomechanical behaviour of the musculoskeletal system, soft tissue balancing and compliance to treatment protocols. Research is currently being investigated for the use of nanomaterial-based strain sensors to monitor mechanical forces of tendons in real time after surgical repair and allow for more individualised rehabilitation programmes.

134 Enhancing non-burn wound management with Novosorb: a comprehensive case series

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Introduction This case series explores the application of Novosorb, a biodegradable temporising matrix (BTM), in non-burn wound reconstruction. The primary objective is to evaluate BTM integration rates within non-burn wound scenarios and comprehensively analyse post-BTM complications and their determinants.
Methods In this retrospective observational study, data from 37 patients who underwent non-burn wound reconstruction using Novosorb (BTM) between January 2020 and September 2022 were analysed. Data included patient demographics, wound characteristics, BTM integration rates, complications, and outcomes. Statistical analysis used SPSS software. Significance levels set at p<0.05.
Results Among the 37 BTM-reconstructed wounds, the median patient age was 52 years. The study revealed 74.3% success rate in achieving Novosorb integration. Patients aged 65 and above experienced higher complication rates (72.7%), while younger patients exhibited significantly lower complication rates (34.6%). Factors such as wound bed characteristics, and diabetic status showed no substantial influence on either integration or complication rates. Notably, all patients achieved complete wound healing, with a median time to complete wound healing on follow-up of 101 days (range 41–418 days). Further analysis being carried out in terms of long-term scarring effects using Vancouver scar scale.
Conclusions This study underscores Novosorb as a valuable addition to non-burn wound management, even in challenging clinical

scenarios. Vigilant clinical monitoring and meticulous wound bed optimisation are essential, especially for elderly, diabetic, or co-morbid patients with chronic or malignant wounds. Despite potential complications, Novosorb consistently proves to be a robust and reliable choice for enhancing patient outcomes in non-burn wound reconstruction.

136 Objective measurement of fluid extravasation following hip arthroscopy

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Introduction Hip arthroscopy surgery is one of the most rapidly evolving procedures used for the treatment of various pathologies in the young adult hip. It is generally considered to be a safe procedure (3.3% complication rate). Fluid extravasation is a recognised complication and has been associated with e.g., prolonged operative and hip traction times and elevated fluid-pump pressures. It can also lead to increased postoperative pain potentially delaying discharge and recovery. The aim of this research article is to (a) review the current literature for methods of fluid extravasation measurement and (b) propose a more accurate method of measurement.
Methods A systematic search of PUBMED was performed using search terms 'fluid extravasation' and 'measure' to identify studies that have measured fluid extravasation and those proposing new techniques for measurement.
Results Following systematic search, the following methods of measurement were identified; thigh circumference, ultrasound, occlusion pressure systems, CT, photoplethysmography and strain gauge sensors.
Conclusions Our systematic search identified that some methods currently used have low sensitivity, low accuracy, unnecessary radiation exposure, are expensive and do not provide real-time monitoring. Working in collaboration with the engineering department we propose the concept of a real-time extravasation monitoring device which can generate quantitative data. We propose a nanomaterial-elastomer sensor patch capable of measuring high strain and a model to calibrate the strain measurements to volumes of fluid.

178 Building a digital clinical community in UK hospitals for collaboration, networking and peer support

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Introduction As clinicians we rotate across hospitals and regions frequently and often find ourselves disconnected from our social support network. There are also limited opportunities to get to know people working in the same hospital, outside of our immediate clinical teams. Moreover, as part of our training we are required to complete a number of portfolio-building activities. However, finding these opportunities can be difficult, time-consuming and luck dependent.
Methods As a medical student on clinical placements in Derbyshire and Nottinghamshire hospitals I was in a good position to speak with clinicians at different levels, from medical students to consultants, about their social and professional experiences in the NHS. This resulted in an initiative to build an app that aims to connect clinicians based in the same hospital for social and networking purposes. The app currently has 40 users from three hospitals (QMC, Royal Derby, King's Mill) acquired via word-of-mouth.
Results This is the first report assessing the ongoing pilot project: developing and implementing a digital peer platform for clinicians. Feedback received from early users and prospective users of the app resulted in initial findings:

- Consultants want to connect socially with other consultants in their hospital.
- Registrars want to find and post about research projects and other portfolio-building opportunities.
- Foundation doctors want to find and post about local social events.

Conclusions There is potential to foster a culture of networking, collaboration and peer support in the NHS using technology. This is an ongoing project and further research, and development of the platform is needed.

192 Critical analysis of GPT-4's ability to pass the MRCS Part A examination

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Introduction OpenAI's GPT-4 has demonstrated proficiency against professional examinations like the USMLE and the FRCS. However, GPT-4's capability with the MRCS Part A has not been investigated. MRCS Part A is a postgraduate medical examination with a pass mark around 70%, consisting of 300 questions across two papers: Applied Basic Sciences (ABS) with 180 questions and Principles of Surgery in General (POSG) with 120 questions. The examination utilises a single best answer format and successful candidates must pass both papers.
Methods A representative MRCS Part A examination that was prepared and provided by TeachMeSurgery based on the MRCS Intercollegiate Curriculum was used to assess GPT-4's performance. A specialised prompt was iteratively developed on a preliminary test of sample questions to prep GPT-4. Each question was processed individually to ensure reliability and facilitate an analysis of the responses.
Results GPT-4 scored 86% on ABS (154/180) and 87% on POSG (104/120), cumulating an overall score of 86.3% (255/300), above the passing threshold. GPT-4 scored 100% in four of the eleven predefined curriculum areas, which included: pharmacology, microbiology, data interpretation and audit, and the surgical care of children. GPT-4's weakest performance was in the medico-legal aspects of surgical practice (33.3%).
Conclusions GPT-4 is trained until September 2021 which may account for its lack of ability to correctly answer questions based on up-to-date medical guidelines. Nonetheless, GPT-4 successfully passed the examination without specialised preparatory training. GPT-4 could also be investigated for generating new questions; however, its validity would need robust testing.

240 Uncommon peritoneo-thoraco-cutaneous fistula post complex cholecystectomy surgery: a case report

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Introduction Peritoneocutaneous fistulas are rarely linked to gall bladder surgery, especially due to spilled gallstones. We present a complex case of peritoneo-thoraco-cutaneous fistula emerging 3–4 months post-laparoscopic subtotal cholecystectomy complicated by biliary leak and subsequent laparoscopic washout. The patient initially presented with cellulitis and abscess on the lower right chest wall back, initially aspirated but persistently discharging infective material, prompting referral for surgical evaluation. Clinical suspicion of a fistula led to computed tomography and magnetic resonance cholangiopancreatography investigations, revealing inflammation in the perihepatic region, lower thoracic area, and right lower back. Upper gastrointestinal and hepatobiliary multidisciplinary meetings (MDM) recommended peritoneal exploration for possible retained gallstones.
Methods Diagnostic laparoscopy uncovered two abscess cavities: around the gall bladder stump and between liver segment VI, the lower thoracic region, and the lateral abdominal wall, forming a

peritoneo-thoraco-cutaneous fistula. Stump cholecystectomy and both abscess drainage was performed. The intraperitoneal fistula segment was managed laparoscopically in addition to retrieving a 1x1 cm^2 gallstone. The external part was excised via elliptical incision, extracting two 1x1 cm^2 and 0.5x0.5 cm^2 gallstones from the subcutaneous plane.
Results The patient recovered well and was discharged on the second post-op day.
Conclusions Retained gallstones are an unusual cause of peritoneo-thoraco-cutaneous fistula post-complex cholecystectomy. A high index of suspicion is vital in managing persistent cellulitis.

244 Same day hip arthroplasty: a reality

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Introduction The evidence-based literature identifies total hip arthroplasty (THA) as a day case procedure to be safe and financially efficient. We aimed to attempt and adapt a previously published day-case total hip arthroplasty (THA) pathway to an orthopaedic unit in district general hospital, presented through the cases of our first 10 patients. We also commented on the feasibility of implementing such a protocol and its potential impact on orthopaedic services across the country.
Methods We adapted the protocol set out in previous literature to the service provision in our trust. We then consented 10 suitable patients for day case THA, who were chosen based on inclusion criteria previously. We focused on aspects which were more likely to provide a successful outcome such as patient education, spinal anaesthesia, non-fentanyl analgesia, minimally invasive piriformis sparing posterior approach and good out of hospital support.
Results We successfully performed 5 day-case hip arthroplasties, through which we further validated the efficacy of such a protocol in our unit. The aspects mentioned in our methodology were contributors of success.
Conclusions The implementation of a day case THA protocol was successful. Further use on a mass scale has the potential for huge financial benefit While providing safe and effective patient outcomes. The protocol needs to be used in a multi-centre trial, to further demonstrate successful factors and factors influencing failed same day discharges. We believe that using this protocol along with a minimally invasive total hip arthroplasty we could potentially do 5%–10% of hip replacements as day case procedures.

259 Advanced preoperative planning techniques in the management of complex proximal humerus fractures

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Introduction As surgical procedures continue to evolve, so too must our approach to preoperative planning. Proximal humerus fractures (PHFs) have historically relied on 2-dimensional imaging, presenting a challenging landscape for surgeons due to their intricate anatomy. This literature review delves into the revolutionary advancements of Computer-Assisted Virtual Surgical Technology (CAVST) and 3D printing in the realm of PHFs, highlighting their groundbreaking potential in the surgical arena.
Methods A comprehensive exploration of medical databases and journals was executed to collate pivotal studies evaluating CAVST and 3D printing for PHFs. The prime focus was on parameters like operative time, blood loss, quality of preoperative planning, and post-operative outcomes. In addition, an in-depth comparison between these cutting-edge technologies and traditional methods was undertaken.
Results Both CAVST and 3D printing offer transformative 3-dimensional preoperative visualisation, providing surgeons with unparalleled precision. CAVST excels in time efficiency, while 3D printing offers potential for implant customisation and enhances patient-doctor communication. The superiority of these technologies over conventional methods is underscored by their patient-specific anatomical accuracy and dynamic interactive capability. While the initial results are encouraging, there's a clear call for further high-quality research, especially in cost considerations.
Conclusions CAVST and 3D printing herald a revolution in preoperative planning for PHFs. Their assimilation into standard clinical practices can redefine future surgery, signalling a new epoch of surgical precision and efficiency. More robust research and randomised control trials will illuminate their definitive roles and advantages, promising a brighter future for both patients and practitioners.

266 Rethinking knee osteoarthritis treatment: efficacy and cost of PRP vs corticosteroids in the NHS context

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Introduction To evaluate and synthesise the existing body of literature comparing the therapeutic effects and safety of platelet-rich plasma (PRP) injections vs corticosteroid injections in knee osteoarthritis patients.
Methods Pertinent articles were sourced from multiple electronic databases (PubMed, Embase, Scopus). The selection was based on qualitative and quantitative discussions of efficacy, patient outcomes, costs and potential complications related to PRP and corticosteroid treatments.
Results The prevailing sentiment in the literature is the promising efficacy of PRP in providing sustained pain relief and improved joint functionality. While many papers noted the immediate relief associated with corticosteroid injections, they also referred its transient nature. The literature showcased PRP's potential in tissue regeneration, presenting a stark contrast to corticosteroids' short-term anti-inflammatory effects and potential long-term degenerative repercussions. A significant advantage of PRP is its cost-effectiveness once equipment has been purchased, making it an economically viable option. Side effects for both treatments remained generally minimal, but occasional skin discoloration and thinning were associated with corticosteroids.
Conclusions Emerging from the literature is the portrayal of PRP as an innovative, therapeutically efficacious, and cost-effective treatment for knee osteoarthritis. This once controversial treatment is now gaining mounting evidence of its advantages both in clinical outcomes and cost, as such there is a compelling case for its adoption and integration within the NHS's treatment paradigm for knee osteoarthritis.

Global surgery (at least one author from a low- and middle-income country (LMIC))

21 A scoping review on management of male infertility in Africa

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Introduction Male infertility is responsible for 20% of infertility cases. There is a noticeable knowledge gap regarding male infertility in Africa, perhaps due to socio-cultural reasons. In this study, we explored the various causes of male infertility in Africa and its surgical management. We hope to bridge the knowledge gap on male infertility in Africa and create enthusiasm for more research.
Methods We employed the PRISMA checklist, the study's scope focused on management of male infertility in Africa. A thorough literature search was performed, and articles were assessed based on their relevance to male infertility. We reviewed all pooled papers, scrutinised them following the inclusion and exclusion criteria, Finally, relevant data were extracted from the studies that met the inclusion criteria.

Results A total of 852 patients were included in the study. Varicocele was by far the commonest cause of male infertility at 73.4% with primary infertility (54.2%) occurring more than secondary infertility (45.8%). Semen analysis was the most common investigation done and most of the infertile patients were found to have abnormal semen analysis (92%). This review showed that medications and herbal treatments were commonly employed in management. However, the preference for surgical management was evident, with varicocelectomy being the most frequently performed procedure. 72.8% of men had an increase in their semen parameters following their procedure with studies reporting positive pregnancy outcome.
Conclusions This scoping review sheds light on the current landscape of male infertility management in Africa, revealing a complex interplay of diagnostic, cultural, societal, and treatment-related factors.

27 A rare presentation of intestinal intussusception in a child with Peutz-Jeghers syndrome

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Introduction Peutz-Jeghers Syndrome (PJS), an uncommon inherited autosomal-dominant disorder is distinguished by mucocutaneous pigmentations, many gastrointestinal hamartomatous polyps, and a higher incidence of gastrointestinal tract (GIT), genitourinary and extracolonic malignancies. Recurrent acute intestinal obstruction (AIO), in particular intussusception in the young, is a serious sequalae of PJS.
Case Presentation A clinical observation of a 5-year-old patient with a complicated course of PJS is presented. Emphasis on recurring episodes of acute abdomen, clinical diagnosis including polyp histopathology, and surgical management is emphasised.
Clinical Findings and Investigations While an inpatient, bloodwork demonstrated severe iron deficiency anaemia (Hb 72 g/l, er. 3.1x1012/l) and multiple melanin pigmentations measuring 2–4 mm in size on the lip mucosa during a physical examination. Erosive duodenopathy and polyposis of the stomach were discovered via fibro-oesophago-gastro-duodenoscopy (multiple gastric polyps 5–10 mm in size). Acute intussusception of the intestine was discovered by ultrasonography.
Interventions and Outcome A mid-median laparotomy was performed alongside manual desinvagination with gut viability intact. Histopathology of excised polyps revealed smooth-muscle hyperplasia and Ki67 protein (MIB-1) positivity with small intestinal hamartomatous polyps seen macroscopically. Conservative management was initiated for standard postoperative care and intestinal motility. Patient was discharged nine days postoperatively.
Relevance and Impact On the basis of literature data, modern ideas about the aetiology, diagnosis and methods of managing patients with PJS are considered. Attention is focused on the high risk of developing cancer of various localisation in PJS, recommendations are given for cancer screening and clinical observation of patients with hereditary gastrointestinal syndromes in childhood.

48 Neuroendoscopy and global neurosurgery: a narrative review of the diversity of minimally invasive procedures in pituitary surgery

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Introduction Neuroendoscopy has grown rapidly as a modality to treat a variety of brain disorders. While this minimally invasive procedure is praised for successful patient outcomes and low complication rates, the reports are skewed towards HICs. Our aim is to address the state of this procedure in global neurosurgery, focusing on LMICs.
Methods A literature search was performed on Medline, PubMed and Google Scholar databases.
Results Thematic analysis highlighted a call for collaboration between neurosurgeons and otolaryngologists. Interdisciplinary approach in Nepal allowed a 90% surgical cure rate for pituitary adenoma resection, reduced time taken and incidence of intraoperative nasal complications. In absence, increased surgical experience correlated with higher cure rates in Iranian acromegalic pituitary adenoma patients. Separately, the efficacy and complication rates of neuroendoscopic pituitary surgery were diverse. One Chinese single centre study reported 80% Gross Total Resection while another South African one reported 12.8% in pituitary macroadenoma patients. Rare postoperative complications and a higher quality of life was reported in Russian suprasellar craniopharyngioma patients undergoing neuroendoscopic pituitary surgery while a West African institution reported 20% of patients experiencing CSF leaks, 12.5% diabetes insipidus and death in 3.57% from carotid injury.
Conclusions The general focus of identified papers pertained to resection rates, operative complications, and collaborative efforts. There is little research output from African institutions and none from South America. When considering surgical outcomes, African countries fared less favourably than Middle Eastern, Asian or Eastern European LMICs, perhaps due to poor treatment access, physician education, interdisciplinary or surgical availability, patient advocacy and disease awareness.

146 Advancing awareness: examining the impact of gender equity conferences in global surgery communities

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Introduction Our study aimed to analyse the perspectives and educational outcomes of the participants of a gender equity and global surgery conference.
Methods We analysed pre- and post-conference survey responses from attendees of the May 2023 Gender Equity Initiative in Global Surgery General Assembly (GEIGS GA) to assess knowledge, awareness, and perceptions related to gender equity and global surgery. We employed a 5-point Likert scale and utilised descriptive, qualitative, and quantitative analyses, including logistic and linear regression and Wilcoxon ranked tests as needed.
Results A total of 197 responses. Post-conference, differences emerged in global surgery knowledge, perception of gender disparities, and familiarity with barriers faced by women in surgery. Participants reported increased confidence in discussing gender equity strategies, recognizing gender biases, and integrating gender equity into surgical education. Knowledge and attendance at previous global surgery events showed no gender, age, income, or profession-based variations. HIC participants were 27.99 times more familiar with women's leadership barriers, while cisgender men had 0.31 times lower odds. LICs origin independently predicted interest in the "Youth in Global Surgery" session. Key suggestions for future events included enhancing discussions, mentorship, and networking opportunities.
Conclusions Our study highlights the role of events like GEIGS GA in fostering an inclusive platform for disseminating knowledge and catalysing global collaboration. The insights from this study emphasise the significance of gender equity initiatives to drive impactful change.

164 Gastroschisis in sub-Saharan Africa: a scoping review of the prevalence, management practices, and associated outcomes

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Introduction Gastroschisis is a congenital defect of the anterior abdominal wall characterised by a periumbilical abdominal wall defect with associated bowel protrusion. Limitations in the diagnosis and management of gastroschisis in sub-Saharan African countries contribute to the high mortality rate. Few studies have been published despite its significant contribution to neonatal mortality in sub-Saharan Africa. This review study explores the prevalence of gastroschisis, likewise the management and clinical outcomes.
Methods Full-text articles reporting the prevalence, management, and associated outcomes of gastroschisis in sub-Saharan Africa were included. Data were extracted from databases such as PubMed, Google Scholar, and AJOL following a systematic search.
Results The study was reported following the PRISMA-ScR guideline. A total of ten articles, which included studies conducted from 1999 to 2022, fulfilled the criteria. The prevalence of gastroschisis varied widely, ranging from 0.026 to 1.75 with an overall mortality rate of 62.48%. Young maternal age is strongly associated with the incidence of gastroschisis. The study showed a slight male preponderance with a M: F ratio of 1.12:1. Staged closure with silos is the preferred method of management, it is explicitly linked to improved clinical outcomes.
Conclusions The prevalence rate and associated mortality of gastroschisis remain alarmingly high in most of the studies. There is a need for advanced diagnostic and management practices as well as increased awareness of gastroschisis to reduce mortality and improve survival outcomes.

180 Biliary reconstruction in paediatric living donor liver transplantation: a systematic review and meta-analysis

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Introduction With an incidence exceeding 30%, biliary complications after paediatric liver transplantation remain a great challenge. In addition to that, the database includes numerous controversial papers about the safety of duct-to-duct anastomosis in comparison to Reux-en-Y hepaticojejunostomy for paediatric LDLT. Our aim is to compare the two techniques in paediatric LDLT by conducting a systematic review and meta-analysis.
Methods PUBMED, Web of Science, Scopus and Cochrane Library were searched for eligible studies from 1989 to October 2022.
Results According to our eligibility criteria, 7 articles (561 paediatric LDLT) were included in our study. On one hand, DD anastomosis is associated with a higher rate of biliary stricture in comparison to RYHJ. (OR:2.47, 95% CI=1.20–5.09, p=0.01; I2=12%). On the other hand, the incidence of cholangitis was more in RYHJ (OR: 0.10 95% CI=0.01–0.84, p=0.03; I2=0%). However, there was no significant difference in the overall incidence of complications, leakage, and mortality between the two groups (overall incidence of complication OR:1.12, 95% CI=0.34–3.68, p=0.86; I2=62%), (Leakage OR: 2.22, 95% CI=0.79–6.23, p=0.13; I2=18%) and (Mortality OR:2.53, 95% CI=0.61–10.57, p=0.30; I2=0%).
Conclusions With a lower incidence of cholangitis, an equal overall incidence of biliary complication and the possibility of RY conversion in case of stricture, DD anastomosis offers a feasible, safe, and more physiological alternative to RYHJ for paediatric LDLT.

181 Hepatic artery anastomosis in living donor liver transplantation: systematic review and meta-analysis

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Background Hepatic artery thrombosis (HAT) is the most serious vascular complication after LT. Moreover, in comparison to DDLT, HA anastomosis is more challenging in LDLT With a lot of controversial topics about the use of microscopic surgery in LDLT. We aimed to Compare the use of microscopic and loupe surgery in hepatic artery anastomosis in adult and paediatric LDLT to decrease the incidence of vascular complications.
Methods PubMed, Scopus, Web of Science, and Cochrane Library were searched for eligible studies from inception to April 2023 and a systematic review and a meta-analysis were done.
Results According to our eligibility criteria, 10 studies with a total of 1939 patients were included. In comparison to microscopic surgery, loupe anastomosis has a similar incidence of Hepatic artery thrombosis. (Thrombosis, RR=0.96, 95% CI=0.26–3.48, p=0.95). In addition to that, no significant difference was detected between the two types in terms of stenosis, decreased blood flow and hospital stay. (Decreased blood flow, RR=0.68, 95% CI=0.01–86.65, p=0.88), (Stenosis, RR=1.81, 95% CI=0.19–17.21, p=0.60) and (Hospital stay, MD=1.16, 95% CI=-3.79–6.11, p=0.65). However, the operative time was longer in the case of microscopic surgery (Anastomotic time, MD=24.09, 95% CI=7.79–40.39, p=0.004)
Conclusions With an equal incidence of complications and shorter operative time, Loupe anastomosis offers a great alternative to microscopic surgery in HA anastomosis.

200 Computerised tomography scan in acute appendicitis: a diagnostic necessity or first world privilege?

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Introduction In developed countries, computerised tomography (CT) imaging is almost always used in the management of acute appendicitis in adults. However, in low- and middle-income countries, the diagnosis of acute appendicitis is mainly a clinical one with the aid of ultrasonography if readily available. Scoring systems such as Alvarado score is used to further justify the clinical diagnosis.
Methods A review of past literature on the use of CT scans in diagnosing acute appendicitis in adult patients in high-income and low- to middle-income countries. We included studies that looked at CT results and outcomes in adults with suspected acute appendicitis. We excluded studies that are focused on pregnant women, studies where patients had non-specific abdominal pain, and with no differential of acute appendicitis.
Results When comparing significance, pre-operative CT scan shows significant improvement in the diagnosis of acute appendicitis as compared to using ultrasound and clinical scoring. Preoperative CT scan in patients with suspected appendicitis is associated with lower negative appendicectomy rate (NAR), shorter hospital stays and

lesser surgical complications. The studies however did not state regarding delay in the decision to operate While patients wait for a CT scan.
Conclusions CT scan plays a vital role in diagnosis of acute appendicitis. However, in low- to middle-income countries, ultrasound remains the first line of imaging as CT scan is expensive and is not readily available in all health centres. A CT scan may not be a necessity but is definitely a resource that patients of a high-income country can benefit from.

212 Working together to achieve more than surgical procedures. a longstanding collaboration with a single centre in rural Ghana

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Introduction Utilising existing surgical mission structure to improve services and education of local and visiting staff in rural Ghana.
Methods Operation International UK provides regular surgical support to Holy Family Hospital, Techiman, Ghana. 7-day missions bring surgeons, nurses and anaesthetists to perform procedures patients would otherwise be unable to fund.

2022 focused on greater integration of local and visiting teams, providing reciprocal training, and improving quality of care.

Local interns assisted at every surgery. Dual surgeon operating in bilateral cases allowed one local and one visiting surgeon to operate simultaneously. Training in spinal anaesthesia was delivered to UK anaesthetists by Ghanaian practitioners.

2023 mission planning in close consultation with local surgical consultants and hospital management considered local needs. Structured surgical training, equipment, and a sustainable solution to providing surgical mesh are planned.
Results One of 6 local interns assisted at all 168 surgeries. All showed improvement in surgical skills with three performing inguinal hernia repair with minimal supervision. Simultaneous bilateral operating improved knowledge exchange between senior surgeons. Surgical safety checklist was integrated into existing systems. Collaboration with Ghanaian consultants and hospital management revealed detailed needs of the department and areas for improvement.
Conclusions Ongoing surgical education and teaching provides the skills and means for local surgeons to perform mesh inguinal hernia repair independently at low cost. Improved techniques in spinal anaesthesia were gained by UK anaesthetists. Regular support of a single centre provides more than surgical procedures, meaningful development of that centre with local engagement provides improved healthcare tailored to the population.

224 Incidence of burst abdomen and associated patient factors in Bangladesh – a multicenter study

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Introduction Our study aims to identify the incidence, presentation, and associated factors of burst abdomen (BA) and how it influenced hospital stay and mortality in Bangladesh.
Methods Initially, data collection involved multiple private and the largest tertiary public centre of Bangladesh. All patients with suspicion/ diagnosis of BA from private hospitals were transferred to tertiary public centres for further management so our study later focused to the largest tertiary centre. Data was collected prospectively from June 2023 to August 2023.
Results Among 2,300 attendances (over 3 months) into acute surgical admission unit, 43 patients were presented with/developed BA. Incidence was more than 3 times higher among male (76.7%) than female (23.25%). 95.34% were aged between 20–60 years. 81.4% patients developed initial sign/symptom of BA on post-operative day (POD) 3 to 5. However, 93% BA was diagnosed in POD 6 to 8. Incidence of BA was slightly higher in elective (N22) than emergency (N21) cases. Among all BA patients, 46.5% (N20) underwent laparotomy for cancer operations, 7% for trauma to abdomen, 14% for peptic ulcer/tubercular ulcer/diverticular/toxic megacolon perforation. 16.28% were diabetic and 14% were on steroid. Length of hospital stay after diagnosis of BA ranged from day 9 to 21 with median of 15.4 days. Mortality rate was 14% and day of death from diagnosis of BA ranged from day 10 to 20 with median of day 15.
Conclusions The most significant associated factor of BA was found to be cancer. Incidence was higher among male and in elective cases.

255 A systematic review and meta-analysis on outcomes of valvular heart surgery in Africa

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Introduction In Africa, the prevalence of valvular heart diseases remains high, due to the high incidence of rheumatic heart disease, thus, increasing the demand for valvular heart surgeries. While there are several studies reporting data on perioperative outcomes following heart valve surgery in the developed countries, there is a staggering paucity of data and evidence reporting the outcomes in Africa. The aim of this study is to report the perioperative outcomes following valvular heart surgery in Africa.
Methods The Preferred Reporting Items for Systematic Reviews and Meta-analysis guideline was utilised for this study. Electronic searches were performed using three online databases, PubMed, African journal online and Research gate from inception to June 2023. Relevant studies fulfilling predefined eligibility criteria were included in the study. The primary endpoints were overall mortality and 30-day mortality, and secondary endpoints included postoperative complications, length of hospital and intensive care stay. The outcome data was pooled together and analysed with random effect model for proportions and mean for meta-analysis using the R software.
Results 31 studies that fulfilled the study eligibility criteria, were identified in the following African countries, South Africa, Ethiopia, Egypt, Mali, Rwanda, Nigeria, Cameroon, Ghana, Senegal, Tanzania, and Kenya. Statistical analysis reported a pooled overall mortality of 10.48% and a pooled early mortality of 4.79%.
Conclusions These results show that early mortality is much higher compared to the developed nations. Future studies need to focus on identifying factors associated with this poor early mortality in other to develop interventions to mitigate them.

258 E-cigarettes (vaping) and peripheral vascular disease: a literature review and recommendations

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Introduction Vaping is gaining popularity as a perceived safer alternative to conventional smoking, prompting significant discussion on its potential health implications regarding the development of peripheral vascular disease (PVD).
Aim To highlight latest available evidence in regard to safety of vaping and its relation to worsening peripheral vascular disease outlook.
Methods PRISMA flow chart was performed, articles were screened by title and full paper. Analysis was performed via SPSS. Primary outcome was change in blood pressure (BP), arterial stiffness and endothelial damage.

Results The systematic review yielded 11 studies with a total 258 patients and average age of (40±20). There was significant increase in heart rate, and BP (p=.001) immediately after vaping, no immediate effect on endothelial damage (p=0.25), and overall decrease in arterial wall stiffness in previous smokers (p=0.004). Correlate with de novo e-cigarette users could not be calculated as sample size was too small. One RCT, suggested possible impairment to endothelial wall (n=9) in young de-novo e-cigarette users, which should prompt a larger study.
Conclusions Conventional smoking is an established risk factor for PVD. Despite the promotion of vaping as a safer alternative, caution is needed to thoroughly evaluate its potential long-term impact on peripheral vascular health.

264 Predictors of catastrophic cost of motorcycle-related road traffic injuries: experience from a major trauma reference centre in a lower-middle income country

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Introduction More than 90% global burden of road traffic injuries (RTIs) is borne by low- and middle-income countries (LMICs), where motorcycles have evolved to become a common cause of road traffic crashes (RTCs). Our study evaluated the cost implication of motorcycle RTIs among road crash victims managed at a major trauma reference hospital in Nigeria.
Methods This is a prospective cohort study conducted among patients involved in motorcycle RTCs presenting to the Emergency Department of the University College Hospital, Ibadan. For each patient, all medical expenses from time of injury (T_0) to 30 days after injury (T_{30}) or Time to death (T_D), were valued in. Catastrophic expenditure was defined as expenditure >25% of the patient's annual household income.
Results 112 consecutive motorcycle crash victims were managed during the study period. The average monthly household income for the cohort was $121.40 with 75% of them earning less than $180. Only 14.3% had health insurance coverage while others made out-of-pocket (OOP) payment for healthcare services. The overall expenditure was catastrophic for 45.5% of the patients. Monthly household income of <$180 (AOR=17.46; 95% CI=3.98-76.71; p value<0.001), absence of health insurance coverage (AOR=10.55; 95% CI=1.12-99.58; p value<0.040), and prolonged hospital stay above 14 days (AOR=14.56; 95% CI=2.83-75.01; p value=0.001) were predictors of catastrophic expenditure.
Conclusions The direct medical cost of motorcycle RTIs is catastrophic for nearly half of the victims. This study identified the need to implement effective financial protection mechanisms against the high OOP expenditure faced by crash victims.

265 Outcomes of coronary artery bypass graft surgery in Africa: a systematic review and meta-analysis

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Introduction In the last decade, there has been a 154% increase in the burden of atherosclerotic diseases including coronary artery disease (CAD) in Africa. This has led to a directly proportional increase in the demand for CABG across the continent. With CABG already established as an effective treatment of advanced CAD in developed regions, it is important that data across African countries be analysed to demonstrate not only its clinical effectiveness but also its public health importance.
Methods Electronic searches were performed using three online databases, PubMed, African journal online and Research gate from inception to June 2023. The preferred reporting items for systematic reviews and meta-analysis (PRISMA) guideline was utilised for this study. Relevant studies fulfilling predefined eligibility criteria were included in the study. The primary endpoint assessed was perioperative mortality, and secondary endpoints included postoperative complications, length of hospital and intensive care unit stay. The data was pooled together and analysed with random effect model for proportions and mean for meta-analysis with the R software.
Results This systematic review identified 42 studies that fulfilled the study eligibility criteria. Meta-analysis reported a pooled early mortality and pooled overall mortality of 3.51% and 3.73% respectively for the total cohort of patients. The result of this meta-analysis suggests that mortality outcomes following CABG in Africa are relatively higher to those in the developed nations.
Conclusions Though there were some limitations to the study, the result from this meta-analysis can serve as a benchmark for future studies until more relevant data is reported.

275 Disparities in the clinical profile of spinal tuberculosis in Africa: a scoping review of management and outcome

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Introduction Spinal tuberculosis (STB) is a significant contributor to non-traumatic myelopathy. It remains a public health problem in Africa where there is rising incidence, in parallel with the high prevalence of human immunodeficiency virus. We conducted a scoping review to characterise the management strategies and outcomes of STB in Africa.
Methods AJOL, Embase, MEDLINE, Google Scholar, and Cochrane CENTRAL were searched from database inception to October 31, 2022. Studies reporting the management and outcomes of spinal tuberculosis in Africa were included. Pooled statistics were estimated using measures of central tendency and spread.
Results Out of 2,960 studies identified, 60 were eligible for inclusion, comprising data from 3,416 patients with age range of eight months to 89 years (median, 32 years). Thoracic and lumbar segments were the most commonly affected vertebral. The most common clinical features were back pain, spinal deformity, paravertebral swelling, and neurological deficits. Many patients were 'clinically diagnosed' due to lack of essential laboratory and imaging diagnostic infrastructure. Patients received antitubercular therapy (ATT) for varying durations and only 18.3% underwent surgery. Full or partial functional recovery was achieved in 77.63% patients, 20.3% developed permanent disability, and mortality rate was 2.07%.
Conclusions ATT remains the mainstay of treatment, however, the duration of treatment varied widely among studies. Treatment outcome is adversely affected by high rate of late presentation and treatment default. Further research is required to explore the feasibility and efficacy of short and ultra-short course ATT in the treatment of STB in African population.

280 Perforated peptic ulcer disease: a scoping review of the Nigerian experience

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Introduction We sought to review the trends in Nigeria, to learn from the experiences. Perforated peptic ulcer disease, presents as a serious complication of PUD, with significant morbidity and mortality. This burden would undoubtedly be felt worse by a developing country like ours.
Methods We followed the PRISMA protocol in selecting the articles. Search was conducted on two databases: Medline and Embase between 1948 and 2023 with 149 articles reviewed after removing duplicates. Inclusion criteria were: 1. studies in humans, studies in Nigeria, studies on perforated peptic/duodenal ulcer disease. We excluded Case Studies, Commentaries, Letters to Editors and Reviews. 19 studies met the criteria.
Results The burden of disease was mostly among the age group 30–50, main repair used in recent studies were omental patch repair. In older studies, vagotomy and simple closures were attempted.

The general well known aetiological factors of H pylori, NSAID abuse are well replicated in the Nigerian studies. Other identifiable aetiological factors were herbal concoctions and alcohol abuse. The affected segments were also predominantly duodenal. Radiological investigations used was mainly plain abdominal roentgenograms.
Conclusions The Nigerian situation and surgical experience has caught up with current global best practise, and while their burden of disease might be different and the resource limited, the morbidity and mortality is well catered for.

QI and audit

2 Can we improve the emotional support provided to FY1 doctors?

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Introduction To establish the effects, opinions, and experiences that FY1 doctors in SHSCT have with regards to dealing with difficult and emotional situations within the workplace.
Methods A qualitative analysis of the data gathered from an anonymous voluntary online survey available to current FY1 doctors working in the SHSCT.
Results Nineteen FY1 doctors' responses were gathered, all responses included in results. Questions focused on undergraduate preparedness for dealing with emotional situations, verification of death, how this affected them, did they speak to someone after this (with only 5.3% discussing with a senior member of the team), and if they knew how to access support if it was required. The themes emerging showed a lack of preparedness for dealing with emotional situations prior to starting work (84.2% did not feel prepared), as well as a lack of easily accessible emotional support (94.7% of participants did not know how to access anonymous emotional support).
Conclusions This study found that for the majority of FY1 doctors based in SHSCT, the availability and signposting of emotional support after difficult or emotional events in the workplace has area for improvement. The results highlighted an under-utilisation of educational and clinical supervisors as an avenue for emotional support. Improving this may work to improve the welfare of newly qualified FY1 doctors. This could be implemented by providing early education to new FY1 doctors on the support available.

6 Transmetatarsal amputation: a chart review of its outcome over the past eight years

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Introduction Trans-metatarsal amputations (TMA) preserve patients' ability to walk but are associated with poor healing rates. This study aims to evaluate the clinical outcome following TMA and associated factors affecting the prognosis.
Methods A single-centre, retrospective study was conducted in all patients who underwent TMA over an 8-year period. The primary endpoint was a composite of major limb amputation and all-cause mortality. Prior revascularisation and routine blood tests on the day of surgery were also studied.
Results Out of 24 patients, three-quarters (n=18) retained their limb post-TMA. Two-thirds (n=16) of the patients underwent prior revascularisation. After 82 months follow-up period, one-third (n=7) had major amputation and mortality rate of 16% (n=4) reported. No significant difference in outcome between patients requiring revascularisation and those with well-perfused feet was observed, however our sample size was small. Lower albumin levels (p=0.069) and higher white cell count (p=0.009) were associated with progression to major limb amputation.
Conclusions Our findings suggest that, in appropriately selected patients, TMA is associated with a higher limb preservation rate than previously reported. Low albumin and high white cell count were potential prognostic factors for limb loss.

7 Developing a structured digital proforma to improve documentation standards in general surgery ward rounds

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Introduction To design and implement a bespoke digital proforma to improve documentation during general surgery ward rounds after recent migration to an EPR system.
Methods One week of ward round entries were collected for each audit cycle. Entries were appraised manually for documented details including admission diagnosis, relevant investigations, and specific plan (antibiotics, fluids, analgaesia, diet etc).

A structured digital proforma was then designed, using drop-down fields enabling selection of common management plans and free-text editing. Macro-enabled buttons were implemented to quickly copy entries to EPR and reset the proforma between patients.
Results A comparable number of ward round entries were observed per patient in each audit cycle:

Cycle 1: 84 entries for 29 patients – 2.8/patient
Cycle 2: 98 entries for 35 patients – 2.9/patient

Proforma adherence was 52% in Cycle 2 (53 of 98 entries). Documentation in every domain assessed improved following proforma implementation, with notable increases including admission date (26 to 64% of entries), diagnosis or operation (57% to 77%) and relevant investigations such as recent bloods & imaging (30% to 60%). The proforma also helped to improve the documentation of a plan for antibiotic regime (50 to 65% of entries), IV fluids (23% to 56%) and dietary instructions (35% to 82%) amongst others.
Conclusions Adopting a structured digital proforma improved the overall standard of documentation of ward round reviews of general surgery inpatients, providing clearer plans for other MDT members and promoting continuity of care. We hope to continue to develop this proforma and encourage its wider implementation in the department.

9 A closed-loop audit of diabetic medication and GKI prescriptions for surgical patients in a general surgery service

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Introduction The Centre for Preoperative Care estimates that roughly 15% of patients admitted for surgery would be diabetic. This is significant, as poorly controlled diabetes contributes to a higher incidence of preoperative risks and poorer patient outcomes postoperatively. This closed-loop audit aims to identify the adequacy of diabetic and glucose-potassium infusion (GKI) prescriptions in surgical patients in the General Surgery service, followed by interventions and a reaudit in a month to assess the progress.
Methods A retrospective review of the prescriptions for diabetic medications and GKI for 18 patients admitted to the general surgery wards over 1 month was carried out. Based on the trust and NICE guidelines on diabetes, surgery and medical illness, the prescriptions were graded as 'adequate' or 'inadequate' according to their prescription timings in relation to surgery, indications, and management. A re-audit on 16 patients was conducted after a 1-month intervention.
Results Overall, a general improvement was seen in prescribing practices. Insulin prescriptions improved from 40% to 50%, While oral diabetic medication prescriptions improved from 75% to 93%. The appropriateness of GKI prescriptions also improved massively from 17% to 75% after the interventions were introduced.
Conclusions Interventions included conducting a teaching session targeting foundation doctors frequenting the general surgery wards, and the creation of a flowchart to help prescribing practices. These

were integral in improving the adequacy of diabetic medication and GKI prescriptions and played a significant role in improving the quality of care for patients. A second reaudit has been planned to ensure the quality of prescriptions produced.

10 A closed loop quality improvement project: the pain ladder and the scalpel

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Introduction It is common practice for patients to have adequate pain control following general surgery procedures. The World Health Organisation (WHO) pain ladder provides a useful framework for analgesic agent of choice to minimise adverse post-operative outcomes. We sought to audit and potentially improve rates in our department of adherence to the WHO pain ladder in prescribing practices.
Methods This quality improvement project included all patients who underwent a general surgery procedure at a single district general hospital during a thirty-day period. Prescription charts of 34 patients were screened in the first loop to monitor adherence to the WHO pain ladder. This was followed by educating colleagues in departmental teaching and clinical governance meetings. Prescription charts were then screened in the second loop to assess for an improvement in adherence to the WHO pain ladder.
Results In the first loop of the audit 14 out of 34 prescriptions (41.2%) were classed as adhering to the WHO pain ladder. In the second loop, this increased to 38 out of 48 prescriptions (79.2%) constituting an improvement of 38%. For all 48 patients who underwent general surgery procedures, the most commonly prescribed analgesic was paracetamol (43.8%), while 14 (29.2%) were prescribed morphine or oramorph.
Conclusions The WHO pain ladder is important to avoid inappropriate opioid analgesia, but also to ensure those patients who need opioids receive them appropriately. Simple departmental education and governance can massively improve rates of compliance and in turn result in better postoperative care as per Enhanced Recovery After Surgery (ERAS) protocol.

20 An audit of bone protection prescribing in patients with fragility fractures in the primary care setting

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Introduction Fractures which have resulted from a low energy trauma, such as a fall from standing height are termed 'fragility fractures' and often signify underlying osteoporosis.

Following one fragility fracture, patients are at significantly increased risk of subsequent fractures. With an estimated 500,000 fragility fractures annually in the UK, these fractures represent a significant public health issue. Current guidelines recommend the prescription of a bone protective agent as a means of reducing future fracture risk.
Methods A search of patients on System One with the diagnosis of 'fragility fracture' was conducted for the period April 2019 to April 2023 inclusive. We retrospectively audited the records of these patients to identify (i) fracture type and date, (ii) osteoporosis prescriptions, (iii) vitamin D/calcium supplementation and (iv) bone densitometry scans- Dual-energy X-ray absorptiometry (DEXA).
Results 47 patients were identified with a coded diagnosis of a 'fragility fracture', of which there were 36 females and 11 males. The average age of the patients was 76.89 with a range of 50 to 97. 49 fractures were identified in total. More than two-thirds of the fractures identified were either distal forearm or neck of femur (18 and 15, respectively).

26 had a bone protecting agent prescribed. 25 bisphosphonate prescriptions were identified and 1 biological agent (Denosumab). 70% of patients had some form of vitamin D/calcium supplementation prescribed. 12 of the 47 patients had neither.
Conclusions Starting effective treatment and preventive strategies in a timely fashion could be key to the prevention of secondary fractures.

23 The neck of femur fractures admission pathway: improving patient safety and flow

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Introduction Improve compliance of the neck of femur fracture (NOF) pathway in Royal Blackburn Hospital.
Methods For cycle 1 we collected data by reviewing the pathway checklist for all admissions starting 28/07/2021 until 27/09/2021 for patients identified to have NOF as the primary concern consisting of 93 data points. This was repeated in cycle 2 wherein we collected data from 01/03/2022 until 28/04/2022. This consisted of 92 data points. Primarily we checked if the protocol was used, and whether it was completed thoroughly. In between cycles, we had teaching sessions with the A&E team raising awareness and we put up posters of a novel management flowchart around A&E reminding them of the protocol.
Results In cycle 1 we found the protocol was used in 79% of cases and was completed in 86%. In this cycle, we found that the common parts of the protocol which was missed were documentation of a pain score on passive and active movement, taking a group & save and documentation of escalation if NEWS>3. In the second cycle, the bundle was used in 87% of cases and was completed in 91% of cases.
Conclusions We were successful in improving the completion rate of the bundle which may be attributed mainly to the teaching sessions. However, the use of the bundle decreased. Perhaps there was pressure to complete the bundle, deterring ED clinicians from using it at all.

24 Sweet spot or blind spot? A review of diabetes detection in anorectal abscess patients

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Introduction Anorectal abscess (AA) is a common condition managed by general surgeons. In 2021, consensus guidelines on anorectal emergencies were published by WSES-AAST, which included recommendations to check serum glucose, haemoglobinA1c (HbA1c), and urine ketones to identify undetected DM in all patients with suspected AAs. We conducted a single-centre, retrospective observational study to assess this.
Methods We included all patients that had an I&D for AA, in a single centre from 1 August 2022–31 July 2023. Patients with known DM were excluded.
Results 100 patients were included. Mean age was 42 and 65% were male. Perianal abscesses were commonest (n=89). 27 patients had their HbA1c checked peri-operatively, 5 results were abnormal. 1 patient was started on metformin, after the abnormal HbA1c.1 result was rechecked and normal. 1 patient was diagnosed with non-diabetic hyperglycaemia. 2 abnormal results were not followed up. Two patients had their serum glucose checked, one had an abnormal random glucose level, not actioned further. No patients had their urinary ketones checked. 5 patients had more than one admission for I&D in our pool, only one had their HbA1c checked.
Conclusions Current practice in our centre does not comply with the WSES-AAST recommendations to biochemically assess for DM in patients with AAs. Patients with suspected AAs should be assessed for DM and early detection will allow for optimisation of glycaemic control peri-operatively, decreasing complications and recurrence. We aim to improve adoption in our centre through education, local SOP introduction, and will evaluate the real-world impact of this prospectively.

26 A retrospective investigation on the relationship between PCNL waiting times and the likelihood of kidney stone complications and the impact of the COVID-19 outbreak on PCNL waiting lists

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Background The urology surgical waiting list was significantly impacted by the COVID-19 outbreaks suspension of the majority of elective procedures. The study's objectives are to establish the safest and most efficient PCNL waiting period and to assess if a protracted waiting period increases the likelihood of a kidney stone complication prior to surgery.
Methods From November 2018 to November 2019 (pre-COVID-19) and November 2021 to November 2022 (post-COVID-19), our hospital treated 96 patients with kidney stones using PCNL. Age, gender, waiting time at the PCNL, preoperative decompression, stone size, number of hospital admissions, history of sepsis, and information from urine cultures were among the parameters that were looked at.
Results The mean waiting period for the pre-covid cohort (n=51) is 86.7 days. 11 patients (21.6%) had at least one UTI history with only 3 patients (6%) presented to hospital, to which only 1 patient was treated for sepsis. For post-COVID-19 cohort (n=45), mean waiting time is 288.8 days. With 15 patients (33%) presenting to the hospital and 5 patients (11%) receiving sepsis treatment, there were 22 patients (45%) with at least one history of UTI. Waiting time of more than 120 days was associated with increased risk of UTI (44.7% vs 24.5%) and sepsis (8.5% vs 2%).
Conclusions The urology surgical waiting list was significantly impacted by the COVID-19-related suspension of the majority of elective procedures. Given that the risk of UTI approximately doubles with each additional 120 days of waiting, PCNL is safer when done during this period.

31 Simulation-based teaching to bridge the gap between IMGs and UK graduates - a QIP

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Introduction There is a clear discrepancy in simulation exposure between International Medical Graduates (IMGs) and UK graduates. Therefore, we designed a simulation-based teaching programme to help flatten these differences.
Methods Four sessions were conducted, each representing a PDSA cycle, consisting of six medical emergency cases. The programme was advertised to all the junior clinical fellows. Course moderators adopted patient and facilitator roles While a senior trainee was lead assessor. Each candidate performed one scenario that ran over 30 minutes with 15 minutes dedicated to debriefing using the plus-delta tool. Pre-simulation and post-simulation questionnaires evaluated confidence in A to E assessment, clinical management and handover.
Results Improvements were observed in self-reported confidence across all sessions. 88% of the participants felt that the course was useful to their clinical practice and all of them (100%) reported that it facilitated the recognition of the right person to escalate to. Before the course, only 0.9% of the participants felt confident in managing medical emergencies. After the course, 82.3% reported confidence in their management skills. The majority of the participants did not feel confident handing over using SBAR (45.5%) before the course, but 88.2% reported feeling confident after. Following cycle 1, we implemented new advertisement methods to increase participation. Based on participant feedback, the role of nurse facilitator was introduced.
Conclusions Simulation-based learning replicates real-life scenarios and provides an immersive yet safe learning environment to develop clinical competency. We believe this form of learning is the solution to help bridge the gap between IMGs and UK graduates.

34 Improving length of stay following transurethral resection of bladder tumour in a local urology unit

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Introduction Only 5% of NHS trusts run transurethral resection of bladder tumours (TURBTs) as day cases according to Urology GIRFT Programme National Specialty Report. However, the British Association of Day Surgery (BADS) recommends about 60% of TURBTs to be performed as day cases.

To assess length of stays for TURBTS and develop recommendations to improve length of stay following elective TURBTs.
Methods A retrospective snapshot audit of TURBTs over a period in 2019 (period A), followed by implementation of recommendations and a re-audit of TURBTs cases in 2020 (period B). A total of 91 patient hospital records in a district general hospital were reviewed.
Results Patient demographics were similar in both periods A and B. Mean age was 73 and 74 years respectively. There was a total of 31 and 60 patients in period A and B, respectively. The average length of stay in the initial period was 1.48 days and only 3% of cases were carried out as day cases. 68% of patients were discharged the next day. Following concurrent implementation of recommendations, the re-audited period had an improved 31% same day discharge rate. 40% of TURBT patients had overnight stays. Importantly both groups had similar histopathologic characteristics allowing for standardised comparison.
Conclusions TURBTs are yet to be generally accepted as day cases. We did not achieve the recommended threshold by BADS, but we demonstrated improvement and showed that with awareness and focused recommendations, same day discharge rates can be improved across local units.

36 H. Pylori eradication therapy for the patient who underwent emergency surgery for perforated peptic ulcer disease

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Introduction Perforated peptic ulcer (PPU) is a serious complication of PUD and patients often present with an acute abdomen that carries a high risk for morbidity and mortality. The annual incidence of peptic ulcer perforation is estimated to be 3.8%–14% per 100,000 individuals.

NICE recommendations: Patients presenting with peptic ulcer should undergo a review of their NSAID use, H. Pylori status tests and eradication antibiotic therapy.
Aims This audit aims to ensure that patients presenting to EKHUFT with perforated peptic ulcer disease are managed according to the national guidance.
Methods This was a retrospective audit including 35 patients. The audit was conducted over the period between May 2020 and March 2022. Audit department approval was obtained before starting the data collection. We included patients presenting to QEQM and WHH.
Results We found no evidence that any of the 35 patients admitted with perforated peptic ulcer received any H. Pylori testing during their admission. There was evidence that 10 (29%) patients received eradication therapy during their admission. Only 15 (43%) of the patients had their follow-up OGD organised. Out of 7 patients who underwent follow-up OGD, only 3 (50%) underwent H. Pylori testing.
Conclusions In patients who underwent surgery for perforated PUD, there is evidence to suggest that we are not following the national guidance regarding H. Pylori testing; empirical H. Pylori eradication therapy and follow-up endoscopy. Reasons could be that the staff is unaware of the guidelines. Raising awareness and change of practice is required.

37 Introduction of ambulatory USS slots for patients attending the surgical admissions unit

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Introduction To assess the waiting times of patients and impact on patient-flow, for patients attending the Surgical Admissions Unit (SAU) for ambulatory ultrasound of the Right Upper Quadrant (RUQ) and/or Right Inferior Fossa (RIF).
Methods Retrospective chart review of all ambulatory patients presenting to SAU with RUQ and/or RIF pain in a single centre. Collation of time between patient arriving and time scan performed in January 2023, for each individual patient. Introduction of two daily slots, specific for RUQ and RIF USS imaging in mid-February. Further review of patients presenting in July requiring RUQ/RIF USS. Statistical analysis was performed.
Results In January 2023, 13 patients returned to SAU for USS. The minimum waiting time for this cohort was 59 minutes and the maximum waiting time was 3 hours and 39 minutes. The median was 2 hours and 15 minutes. In July 2023, 18 patients returned to SAU for USS. The minimum waiting time for this cohort was 4 minutes and the maximum waiting time was 2 hours and 20 minutes. The median was 1 hour and 5 minutes. There was an average reduction of 1 hour and 10 minutes.
Conclusions The introduction of two fix time slots per day for USS of RUQ and/or RIF has resulted in a 48% reduction in waiting times for patients. This significant reduction in waiting time allows for better turnover, and improved patient flow. It has also resulted in increased patient satisfaction, as waiting times are at the forefront of patient concerns.

40 NELA postoperative geriatrics review audit

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Introduction The National Emergency Laparotomy Audit (NELA) guidelines recommend geriatric medicine review for elderly or frail patients during the perioperative period. A closed-loop audit was conducted to determine the adherence to these guidelines. During the audit cycle, the guidelines were updated from all patients aged 65+, to patients aged 80+, or aged 65+ and frail (clinical frailty score (CFS) of 5+) being referred for geriatric review. The audit data was reviewed for adherence to the prevailing guidelines.
Methods During the first cycle, data was collected for a three-month period in 2023. 16 patients were identified. During the second cycle, data was collected for another three-month period after recommendations and interventions from the first cycle were implemented. 10 patients were identified — 2 patients were excluded (due to an intraoperative decision to palliate, and a postoperative mortality during ITU stay, respectively). With the prevailing guidelines, the second cycle data was reviewed — same 10 patients were identified, and 2 patients excluded as above. 2 further patients were excluded as their CFSs were between 1 and 3. To increase adherence, NELA Geriatric Review Posters were created and displayed, and an audit presentation delivered.
Results The first cycle showed an adherence of 6.25% (1/16 patients reviewed by geriatricians). Post-intervention, the second cycle showed an adherence of 75% (6/8 patients reviewed). With the updated guidelines, there was 100% adherence (6/6 patients reviewed).
Conclusions Given the interventions to promote the NELA guidelines, we were able to satisfactorily increase adherence. Future studies will look at qualitative data on postoperative geriatrics review.

42 "Hip Hip Hooray": Ensuring sufficient analgesia and bone protection for patients with hip fractures

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Background Managing acute hip fractures involves preventing their recurrence, which is crucial. This is because fragility fractures can elevate the likelihood of subsequent fractures, with as many as 11% of patients experiencing a second fracture within the first year. It has been extensively researched and proven that the use of bisphosphonates can reduce the recurrence rate by a significant 36%. The aim is to ensure that patients with hip fractures receive appropriate investigations and management for bone health in a timely fashion.
Methods This retrospective project involved all patients admitted to a district General Hospital with traumatic femur and peri-prosthetic fractures between 01/11/2022 and 01/03/2023. All patient demographics, investigations and management data were collected electronically using eTrauma, System C (care flow) and clinical notes.
Results From a total of 105 patients, only 26% of patients had a Bone profile, 6% had B12 and folate, and 5% had vitamin D levels checked on admission. Thus, if clinically indicated, only 67% of patients received high dose vitamin D, with the median for starting intervention being 6th of admission. 26% of patients received Bone protection.
Conclusions It's concerning that 75% of patients with hip fractures aren't receiving the required investigations and treatment for Bone Protection, which is critical in preventing more fractures. We must take prompt action to create and release an internal protocol to guarantee these patients receive the necessary care. Additionally, we need to prescribe adequate analgesia upon admission.

43 The impact of the COVID-19 pandemic on the management of hip fractures against best practice tariff key criteria a retrospective study

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Background Hip fractures are common, with over 60,000 recorded in 2021. In the UK, the best practice tariff (BPT) outlines the expected management of hip fracture care. COVID-19 significantly impacted patient care, the long-term sequelae are not yet fully understood, and whether hospitals have recovered to pre-pandemic performance.
Methods Retrospective study of patients admitted between 2019–2022 with a hip fracture comparing time to surgery, time for ortho-geriatrician review, delirium assessment on admission and length of hospital stay pre (before 20/03/20), during (21/03/20–20/07/21) and post (after 20/07/21) COVID-19. Analysis done using binomial testing, t-test, and statistical significance estimated with Bonferroni correction.
Results 1,402 patients identified with a statistically significant effect ($p<0.05$) on compliance for delirium assessment on admission, ortho-geriatrician review in <72hours, and time to surgery in <36hours with a 4.9%, 8.9%, 6.3% drop during the pandemic respectively. The rate of ortho-geriatrician reviews returned to pre-pandemic levels but delirium assessments and time to surgery didn't, with the latter dropping a further 5.7%. There was a statistically significant ($p<0.05$) increase in length of stay during the pandemic which persisted post-pandemic.
Conclusions Hip fractures are common and indicate fragility and higher mortality risk. BPT improves care by ensuring timely surgery and involving ortho-geriatrics. COVID-19 impacted BPT in different areas, with some improving and others declining. Time to surgery was a specific area of needed improvement. We have therefore introduced an extra trauma list and prioritised hip fractures when possible and will re-evaluate our current practice moving forward.

47 Introduction of an ENT admission proforma to improve documentation and provide quality patient care

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Introduction The GMC stipulates that doctors must keep clear, accurate, and legible records. The absence of a formal admission

proforma may lead to unclear, incorrect, or absent documentation, which can compromise care and lead to patient harm. The British Association of Otorhinolaryngology subscribes to the Academy of Medical Royal Colleges' 'Standards for the clinical structure and content of patient records'. Our aim was to evaluate the standard of written clerking documentation within our department and assess whether a clerking proforma would improve the quality of written documentation.

Methods We retrospectively audited ENT admissions in August 2022 against a standard of inclusion set by the Academy of Medical Royal Colleges. We re-audited our practice in April 2023 following the introduction of a 2-page clerking proforma in September 2022.

Results Introduction of a proforma led to an overall improvement in documentation, with enhancement in the recording of past medical history (71% to 94%), medication history (25% to 90%), and allergy status (71% to 97%). There was also significantly more documentation of social history.

Conclusions The implementation of an ENT admission clerking proforma has led to greater quality and clarity of admission documentation. When the proforma is not used, key clinical information may be missed. A printed and diagrammatic proforma provides guidance to clinical staff and promotes a culture of safety among rotational doctors, many of whom are new to the specialty. We hope to further develop this proforma to include treatment escalation plans and VTE prophylaxis to maintain adequate standards for our patients.

51 Reducing on the day elective plastic surgery theatre list cancellations

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Introduction To identify the rate of on-the-day cancellations, the proportion of these due to non-adherence to pre-operative fasting, and other reasons for on-the-day theatre cancellations among elective plastic surgery patients.

Methods The previous 30 consecutive elective patients on a single surgeon's elective operating list were reviewed using patient records, admissions team patient lists, and surgeon recall for on-the-day cancellations and reasons for cancellations. The standards used were the 'Perioperative fasting in adults and children: Guidelines from the European Society of Anaesthesiology' and the trust 'Pre-op feeding guideline'. After the first audit, a pre-operative fasting information sheet, developed with input from patients, the surgical and nursing teams, and service management team, was sent to patients ahead of surgery. A re-audit was then performed of the following 30 consecutive patients scheduled for elective surgery on this surgeon's list.

Results During the first audit, three (10%) patients were cancelled on the day. Two of three (67%) were due to non-adherence to pre-operative fasting, and one (33%) was due to wanting to defer the operation until the patient was older. The re-audit after implementation of the pre-operative fasting information sheet found one (3.3%) patient was cancelled on the day of the operation, due to testing positive for COVID. Zero (0%) cancelled on the day due to non-adherence to pre-operative fasting.

Conclusions This sustainable intervention successfully eliminated on-the-day cancellations for elective plastic surgery patients due to non-adherence to pre-operative fasting and will continue to be used in this department.

53 The journey to surgical sustainability: assessing the impact of green theatre practice through carbon footprint analysis

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Introduction Climate change is an era-defining concern. The NHS contributes 5% of the UK's carbon footprint, with operating theatres a recognised carbon hotspot. To align with targets of Net Zero by 2024, we assessed sustainable theatre practices against the Intercollegiate 'Green Theatre Checklist' and evaluated the impact of our practices by mapping carbon emissions.

Methods Practice in a single-centre general surgery department was compared to the Royal College of Surgeons' 'Green Theatre Checklist', focusing on the 'preparing for surgery' and 'intraoperative equipment' subsections. Carbon emissions were mapped using the Life Cycle Assessment approach.

Results This study included 46 cases: open (n=22), laparoscopic (n=24), elective (n=17) and non-elective (n=29). Positive practices were observed in reusable gowns (70.9%), drapes (95.7%), and trolley covers (87.0%), while reusable hat usage was low (9.7%). Water consumption totalled 2776L, with low use of alcohol-based scrubbing techniques (15.9%). Unnecessary non-sterile glove use occurred in 39% of cases, 25 opened sutures went unused, and antibiotic usage was unclear in 4 cases. No unnecessary catheter use was identified, and loose skin preparations were universally employed. All laparoscopic ports and scissors were single use. The cumulative carbon footprint was 246kg CO2e (mean 5.4kg CO2e per case). With full optimisation of sustainable changes, this is projected to reduce to 101kg CO2e (mean 2.2kg CO2e per case).

Conclusions This project evidences commendable sustainable practices while outlining future priorities. Effective procurement, education, and a cultural shift are crucial in driving engagement and empowering clinicians to make locally relevant changes a reality.

54 Quality and readability of online information and materials on seromas

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Introduction Breast cancer is the most diagnosed cancer worldwide with seroma formation being the most common complication following breast surgery. Despite them being the most prevalent complication following breast surgery, and NHS Digital Toolkit advising that medical pages should aim for a reading age of 9–11 years, there is little evidence on the quality and readability of online patient education materials on seromas.

The purpose of this study was to examine the readability of online materials about seromas and assess their suitability for the general population with varying levels of health literacy.

Methods 36 English-language websites were identified using two different search terms on Google related to seromas. The readability of each article was assessed using the Flesch Reading Ease Formula, Flesch-Kincaid Grade Level, Coleman-Liau Index, Gunning-Fog Index, and Simple Measure of Gobbledygook Grade Level (SMOG).

Results The average Flesch-Reading Ease score for all patient education materials was 53.9 (±21.9), suggesting that they were 'fairly difficult' to read. The average Flesch-Kincaid reading grade level was 7.80 (±3.1), which is higher than the recommended reading level for patient education materials.

Conclusions Online patient education materials regarding seromas are at a higher-than-recommended reading grade level of the general public. Improvement would allow all patients, regardless of literacy level, to access and utilise such resources to aid decision making around undergoing breast surgery.

55 The age of quilting: a retrospective study investigating seroma formation following a mastectomy with quilting

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Introduction Breast cancer is the most diagnosed cancer worldwide with 1 out of 3 patients undergoing a mastectomy with or without axillary lymph node dissection. The most common complication

following a mastectomy is seroma formation. One factor in reducing seromas is quilting – where dead space left after surgery is minimised by fixation of the skin flaps to the underlying skin.

The purpose of this study was to investigate the incidence rate of seroma formation following a mastectomy, with and without quilting, and identify the risk factors that influence seroma formation.

Methods 60 patients undergoing mastectomy with or without quilting were identified in this retrospective study. The primary outcome measured was seroma formation, with secondary outcomes being volume of fluid and number of aspirations and tumour biology compared against risk factors in a multivariate analysis.

Results The incidence rate of seroma formation was significantly higher in the non-quilted group compared with that in the quilting suture group (70% vs 0%). The type of tumour was associated with an increased incidence of seroma formation, with lobular carcinomas more likely to develop a seroma compared to ductal (p=0.034). There was no significance between grade or weight of tumour in development of seroma in either group.

Conclusions The type of tumour is an important prognostic factor in influencing seroma formation in patients undergoing mastectomy +/- quilting. Quilting reduces the incidence of seroma formation, and factors that increase incidence rates should be used to identify high risk patients who should undergo mastectomy with quilting.

62 Adhesional small bowel obstruction (ASBO): Is it time to change our practice?

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Introduction To figure out how we compare nationally with other centres by comparing key areas such as CT on admission, use of Gastrograffin (GG), time to theatre, length of stay and operative vs conservative management and mortality.

Methods The medical records of all ASBO patients admitted to Ipswich Hospital NHS trust between 1 April 2019 and 1 August 2023 were screened. All patients above 16 years of age and with a clinical diagnosis of ASBO were included in the audit.

Results 183 patients were diagnosed with ASBO.114 patients (62.2%) were treated conservatively, while 69 patients were taken to theatre patients who were managed conservatively, were given Gastrograffin, which caused resolution of the obstruction in 95 patients (83.3%), while the rest were taken to theatre. 47 (68.1%) and 22 (31.9%) patients were operated by open and laparoscopic approach respectively. Patients in the laparoscopic group were younger (p<0.001), had lower ASA grade (p<0.001) and less complex adhesions (p=0.001).Operative time was longer in the open group (p=0.004). Laparoscopic adhesiolysis was associated with a lower overall complication rate (36.3% vs 65.4%, p<0.001), lower mortality (p=0.029), earlier oral intake (p<0.001) and shorter hospital stay (p<0.001). The average time to theatre was 4 days (96 hours).

Conclusions The use of a water-soluble contrast should be used more regularly in the conservative management of ASBO. The laparoscopic approach improves postoperative outcomes and functional recovery and should be considered in patients in whom simple band adhesions are suspected. A step-by-step ASBO flow chart is created to help the admitting surgical team follow the appropriate steps for the better management of ASBO.

63 Testicular torsion in a district general hospital, a 5-year review

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Introduction Recognition and treatment of testicular torsion is imperative as salvage rate decreases significantly after 6–8 hours of symptom onset. This audit aim to review the pathway and quality of care provided to patients aged between 2–24 who presented to a district general hospital with testicular torsion.

Methods Patient aged between 2–24 who presented acutely with scrotal pain from 2018–2022 were included for screening. Only those with proven testicular torsion were included. Data collected included patient demographics, time of presentation, first doctor review and knife to skin time.

Results A total of 264 patients presented acutely with scrotal pain over the last 5 years. 27 patients (10.2%) were diagnosed as true testicular torsion. The orchidectomy rate is 33.3% (n=9), of those 5 were delayed presentation >12 hours and 3 were missed torsion. If presented on time, the average time taken from symptom onset to knife to skin is 6 hours 4 minutes. Among the 3 that torsion was missed on initial presentation, orchidectomy rate is 100% (n=3). Each of the patient in this category has unique characteristics, two has language or learning difficulties, and one was imprisoned. Within the 5 patients who had learning/hearing/language difficulty in this audit, orchidectomy rate is 80% (n=4).

Conclusions Testicular torsion is an important differential diagnosis in young patients presented with abdominal pain, particularly those with learning difficulties or language difficulties. This cohort of patients are at risk of missed torsion and clinicians should be vigilant when taking history and examining this cohort of patient.

64 PIRADS mpMRI: positive predictive value of pre-biopsy prostate MRI

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Introduction One in eight men will be diagnosed with prostate cancer in their lifetime. Multi-parametric magnetic resonance imaging (mpMRI) has revolutionised the diagnostic approach of prostate cancer by using Prostate Imaging-Reporting and Data System (PI-RADS) scoring to detect clinically significant prostate cancer for biopsy. However, there is known variability in performance of prostate MRI across centres. This retrospective audit aims to investigate and compare the positive predictive value (PPV) of the local prostate MRI reporting using PI-RADS to the international cohort.

Methods All prostate MRI performed between November 2022 to March 2023 were screened. Active surveillance of known prostate cancer patients and benign conditions such as prostatitis were excluded from the study. Data collected included prostate specific antigen density, PI-RADS score, and Gleason score. PPV was calculated by defining clinically significant prostate cancer as Gleason score greater than or equal to 3+4.

Results A total of 159 patients were included in this audit. The mean age was 66.3 years old, mean PSA 11.8 and mean prostate volume of 50mls. In this cohort of patients, 23% has PIRADS 3, 38% PIRADS 4 and 34% PIRADS 5. The calculated PPV of PIRADS 3, 4, 5 and > 4 are 24%, 47%, 67% and 56%, respectively.

Conclusions The PPV of the local pre-biopsy mpMRI for PIRADS > 4 was low at 56%. However, this is comparable within 10% of the PPV by Westphalen *et al*'s international cohort, with PPV of PIRADS 3, 4, 5 and > 4 quoted as 15%, 39%, 72% and 49%, respectively.

66 Assessing serum calcium and uric acid level in patients with ureteric stones

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Introduction Ureteric calculus are common, affecting about 1 in 10 people. Majority of patients present with acute abdominal pain. NICE guideline recommends serum calcium and urate acid levels are checked when assessing these patients. However, this is often missed at presentation as these parameters are not routinely checked in emergency departments.

This QI project aimed to improve best clinical practice in assessment of patients with ureteric stone.
Methods Retrospective data collection from electronic clinical records for patients who had a flexible ureteroscopy (FURS) and laser to stone at a district general hospital. Following initial audit findings and implementation of recommendations, a re-audit was carried out from August to September 2020.
Results During the first audit cycle, 20 patients had FURS within a month, and on review of their journey from initial presentation until surgery, only 15% of patients had a calcium/uric acid serum assay.

Recommendations for improvement included information posters at emergency departments and urology/general surgery offices, incorporating serum calcium/uric acid assays as part of routine FRUS pre-assessment clinic and an email to the general urology team.

17 patients had FURS during the re-audit cycle (August–September 2020). 65% of these patients had a serum calcium/uric acid assay. Notably, all the assays were requested in the pre-assessment clinic.
Conclusions There was at least a threefold improvement in calcium assays on the second cycle, especially via clinics. However, there are still avenues for improvement in checking serum calcium/urate level following diagnosis with ureteric stone during an acute admission.

68 No teaching today – no surgeons tomorrow: structured tutorials improve medical students' confidence and competence in specialist surgical fields

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Introduction There has been a notable decline in medical students interested in pursuing surgery as a future career option. Analysis of UK undergraduate surgical curricula has demonstrated that insufficient teaching and clinical exposure to surgical specialties diminishes students' confidence in the subject, deterring future applicants. Final year students at a London medical school reported variable experiences and exposure particularly to urology, breast, and vascular surgery – with only half of students feeling confident in relevant consultation skills.
Aim To provide standardised teaching for students on specialty surgical placements at a London teaching hospital. To improve understanding of common surgical presentations as well as relevant history and examination skills.
Methods A prospective analysis of final-year medical students' experiences on surgical placements this academic year. Small group tutorials covering key surgical presentations were delivered through the lens of an A&E consultation, aligned with the local and national Medical Licensing Assessment curriculum. Student feedback was collected anonymously post-tutorial to rate various aspects of the session and suggest improvements.
Results Cycle 1: Confidence in consultation skills increased from 52% to 97% following tutorials. Feedback emphasised the request for multiple cases and supplementary learning resources. Cycle 2: Cases per tutorial increased to 2–3 and one-page summaries covering key surgical presentations were developed and distributed to attendees. 100% of students reported an increased confidence in skills and appreciated the condensed summaries to aid revision.
Conclusions Structured tutorials supplementing clinical exposure boost students' confidence and engagement in specialist surgical fields. Future plans involve expanding tutorials to encompass other surgical specialties.

69 Outcomes following hemithyroidectomy and exploring factors that may contribute to length of stay

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Introduction Same-day discharges in patients undergoing primary hemithyroidectomy have been shown to be safe. However, nationwide rates remain at 10%. We audited our trust's outcomes and explored factors that might contribute to length of stay.
Methods Retrospective analysis of adults who had undergone hemithyroidectomy was carried out over a 9-month period. A combination of U and TIRADS grading was used for pre-operative imaging. Those with retrosternal goitres or undergoing completion thyroidectomies were excluded. Statistical analysis was conducted on variables to assess for predictors of length stay.
Results Total of 32 patients were included (25 female, mean age=47.5 ± 13.9). Fifty-six percent underwent surgery for diagnosis (n=18) with the remainder due to compressive symptoms. U2 (n=8) and TIRADS 3 (n=9) accounted for majority of pre-operative assessments. 44% percent had Thy3a (n=11) on FNA cytology. Mean diameter of largest nodule 4.31 ± 1.64 cm. Two patients returned to theatre post-operatively for haematoma evacuation and high drain output. Two patients had vocal cord palsies. Median length of stay was 2 days (range 1–5). There was no statistically significant relationship between hospital stay and sex or age. There was also no statistically significant relation between drain output, radiological classification, size of nodule, cytology, histopathology, or indication for surgery.
Conclusions We found no significant links between demographic, radiological, or pathological factors and postoperative hospital. A day case protocol has been proposed in line with national guidelines for low-risk patients.

72 How efficient are we when it comes to the use of incentive spirometry across the surgical floor?

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Introduction To assess the knowledge of the healthcare team in the use of incentive spirometry. To assess whether patients receive the correct information on how to use the incentive spirometer.
Methods Snapshot audit of all patients and medical staff present between (25/05/23–28/05/23) using two questionnaires, one for staff and one for patients.
Results 18 out of 76 patients and 52 healthcare staff (including doctors, nurses, and allied health professionals) participated in this audit. The majority of the health professionals had provided a patient with an incentive spirometer (71%). However, 73% of them had not read the instructions and 84% had not been trained in how to use an incentive spirometer. Most (75%) said patients should lift three balls and 19% said patients should exhale (blow into the device) to lift the balls. Most patients (83%) were not given the correct instructions as they were told to try to lift all three balls and about 16% of patients were told to exhale (blow into the device).
Conclusions The lack of training of the health professionals led to incorrect instructions being given to patients undergoing spirometry. This was supported by the fact that only one profession (1.85%) answered all the questions correctly. As most healthcare team members had not read the instructions and had not been trained to give instructions to patients, there was considerable confusion among patients about how to use spirometry. There were several reasons why patients did not use spirometry correctly. Firstly, patients were not taught the correct technique and secondly, they were not regularly assessed.

77 Audit of the quality of consent form completion for cholecystectomies performed at a tertiary centre in the UK

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Introduction To assess the quality of consent form completion for cholecystectomies undertaken at a major tertiary hospital in Wessex. Cholecystectomy is a commonly performed general surgical procedure, associated with general and serious complications. Informed consent prior to surgery is essential to avoid misunderstanding of risk and subsequent litigation. All complications listed on the NHS website for cholecystectomy should be the minimum standard of information discussed, with the consent form

often utilised as a uniform document to confirm that a discussion has taken place.
Methods We retrospectively analysed written consent forms for elective cholecystectomies (laparoscopic and robotic) between June-October 2022. In total, 40 consent forms were analysed against national standards to assess completeness. A score was assigned to each consent form, with a maximum score of 17 (1 for each of the 15 complications and an extra point if the complication rates of bile leak and bile duct injury were listed).
Results The average score was 8/17. No consent form included all 15 risks. 35/40 consented for bile duct injury, 39/40 for bile leak and 38/40 for damage to bowel/vessels, which are all serious complications associated with major morbidity. Only 2/40 included the associated complication rates. Less major complications ranged from being included in 5% to 100% of forms.
Conclusions There is a wide degree of variability in the consenting documentation for cholecystectomies at our trust. In response, we have implemented a procedure-specific consent form to ensure complete documentation (and to prompt discussion) of recognised complications and mortality rates.

80 An audit on improving compliance of oxygen prescribing in the ENT department

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Introduction Oxygen should be regarded as a drug. According to local and national guidelines, oxygen must be prescribed on admission with correct target saturations to prevent iatrogenic hypercapnia. With the recent transition to electronic prescribing (June 2023) at our trust oxygen prescription was found to be inadequate.
Aim To improve compliance with electronic oxygen prescribing in the ENT department.
Methods Two PDSA cycles were undertaken between June–August 2023. Retrospective data of 50 patients who were discharged from the ENT ward were collected for both cycles. Patients admitted via the emergency care pathway who already had oxygen prescribed were excluded. Interventions included: a) department email to clinicians and allied healthcare professionals; b) reminder posters in the doctor's office.
Results Pre-intervention (cycle 1): 76% of admissions were via the emergency care pathway. 24% of patients had oxygen prescribed on admission. Of these, all patients were elective admissions and oxygen was prescribed by the anaesthetic team. There was 0% adherence to oxygen prescribing by ENT clinicians. Post-intervention (cycle 2): 58% of admissions were emergency admissions. Oxygen prescription on admission had improved to 56%. Adherence by the anaesthetic team was sustained at 100% for elective admissions and increased to 16% by ENT clinicians for emergency admissions.
Conclusions The interventions have been found to make little difference. Further recommendations should be focused on ENT clinicians and HCPs and this includes: raising awareness at our local meeting, informal communication with nursing staff to prompt doctors and adding a permanent reminder on our electronic patient handover lists.

82 An audit on improving documentation of management in patients presenting with otitis externa to the ENT emergency clinic

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Background Otitis Externa is infection of the outer ear, with otic antibiotics being the mainstay of treatment. According to national guidelines, management should also be centred around instruction to our patients, which encompasses a) water precautions, b) minimising trauma (avoid use of cotton buds/earphones and c) technique of drop administration (lying flat with affected side up for 3 minutes) (as only 40% self-medicate properly). Quality of documentation was found to not adhere with national guidelines.
Introduction To improve documentation of management in patients presenting with otitis externa to e-clinic.
Methods Two PDSA cycles were undertaken between July–August 2023. Retrospective assessment of clinical notes of 50 patients that presented to e-clinic were undertaken for both cycles. Notes were assessed to see if instructions had been documented. Parameters assessed: a) water precautions, b) minimising trauma and c) technique of drop administration. Intervention included teaching sessions via the ENT induction BEST course for new SHOs.
Results Compliance with parameters before intervention (cycle 1) were: water precautions (44%), minimising trauma (22%) and technique of drop administration (8%). Post intervention (cycle 2): water precautions (60%), minimising trauma (38%) and technique of drop administration (26%).
Conclusions Although the intervention accounted for a positive change, compliance with all three parameters was found to still be inadequate. Without accurate documentation, there is no way to retrospectively gauge if tasks are being actioned. Further recommendations include formal teaching sessions and posters in the e-clinic room as reminders.

84 Evaluation and improvement of TURBT operation notes in a district general hospital

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Introduction Retrospective study of urological practice and management of NMIBC (Non-Muscle Invasive Bladder Cancer). Primary objective was to determine if audit and feedback can improve the quality of TURBT surgery and reduce early recurrence rates. Secondly, the effect of introducing a TURBT specific operation note is being evaluated.
Methods As a part of the multicentre observational study of TURBTs (RESECT), four key indicators were used to assess the quality of TURBTs: 1) Detrusor muscle in specimen 2) Single instillation of intra vesical chemotherapy (SI-IVC) within 24 hours 3) Documenting completeness of resection 4) Documenting tumour size, number, and location. Initial evaluation was based on the study chart provided by RESECT. Based on data, an op-note specific to TURBTs was made. For re-evaluation, a tailored study chart was created. Hospital records, operation notes and radiology reports were analysed.
Results 58 cases were evaluated from September 2022 to February 2023. 78.9% of cases had detrusor muscle in specimen and 73.3% received SI-IVC. 22.2% of notes documented completeness of resection and 77.78% documented tumour numbers, size and location. After introducing the operation note, 8/15 (53.3%) cases till now have used the new proforma.
Conclusions Our initial analysis revealed that only one indicator (giving SI-IVC) was reaching target. Guidelines strongly recommend documenting the tumour location, size, multifocality and completeness. Introducing an op-note with these indicators allows these factors to be considered. Ensuring the proforma is filled out for all cases will allow for better documentation to improve quality of TURBT surgery and reduce recurrence rates.

89 Factors affecting ileostomy reversal time at ELHT – 5-year observational study

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Introduction Temporary loop ileostomy is commonly used after low anterior resection to mitigate consequences of potential anastomotic leak, but time to reversal can be variable. Late reversal can result in poorer outcomes. We sought to evaluate the factors which affect to time to reversal and identify if this was affected by the COVID-19 pandemic.
Methods We performed a retrospective review of all patients who had undergone anterior resection with a covering loop ileostomy between

2018–2022. Prospectively collected routine data and clinical notes were reviewed.

Results A total of 62 patients were included off which 38 were male and 24 females. 46 patients underwent reversal of ileostomy. Median time to reversal was 357 days after index operation (range 46–994)and 263 days after completion of chemotherapy (range 41–878 days).

Comparison was made between those who had reversal pre-COVID-19 pandemic with a median of 289 days pre vs 364 days post pandemic, but this was not significant (p=0.58). Most common reason for delay in reversal was adjuvant chemotherapy (15 patients) patient choice (8 patients) and COVID-19 (7 patients) among others.

Conclusions Patients have significant waits prior to ileostomy reversal, however, COVID-19 did not appear to directly affect this. Delays may be due to logistical factors with follow-up investigations and the use of a standardised follow-up protocol may help to ensure timely investigations and planning in these patients. We suggest establishing strict line pathway to reduce ileostomy reversal time after AR like early consideration of requesting contrast enema, sigmoidoscopy.

92 Intraoperative use of tourniquet in trauma and orthopaedics

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Introduction Intraoperative tourniquets are widely used in trauma and orthopaedics surgery. The British Orthopaedic Association and The British Society for Surgery of the Hand published a guideline on safe intraoperative tourniquets in 2021. This clinical audit investigated practices of tourniquet use in a district general hospital.

Methods All patients who underwent limb surgery that involved the application of a tourniquet from April 2020 to November 2021 were included. Data was collected retrospectively from operation notes. Interventions to improve safety use of tourniquet were implemented and operation notes were reviewed again retrospectively from April 2022 to October 2022 for the second audit cycle.

Results In the first cycle, duration and pressure of tourniquet applied were documented in 98% and 90%, respectively. In contrast, only 10% had documentation of tourniquet site. There was no record of the exsanguination method and isolation method.

The following interventions were applied:

1. Educating orthopaedic surgeons about BOAST guidelines to increase awareness.

2. A template was developed and incorporated in operation notes to ensure that surgeons will include essential tourniquet details.

After the intervention, a further 40 operation notes were reviewed. A significant improvement is noted as documentation of exsanguination method, isolation method, and tourniquet site increased to 77%, 74%, and 92%, respectively.

Conclusions This audit has successfully improved the safety use of intraoperative tourniquets after two audit cycles in Weston General Hospital with more than 50% improvement. Continuous safe practice of safe use of intraoperative tourniquets is mandatory to adhere to national guidelines and to decrease tourniquet-related injuries.

93 A multi-cycle closed loop audit looking at the documentation and positioning of intercostal chest drains (ICD's) in trauma patients presenting to a major trauma centre

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Introduction Assess documentation of ICD's in major trauma patients. Assess the positioning of ICD's.

Methods A multicycle closed loop audit was performed on the documentation of ICD insertion in major trauma patients. The criteria for adequate documentation were taken from LocSSIP. Each cycle covered a 2-week period looking at major trauma patients requiring drain insertion. Following the first cycle a reminder at handovers to document insertion was given. The third cycle looked at the documentation of, and the placement of drains. If the drain required adjustment determined the correct placement. A formal teaching session on ICD insertion and demonstration of the LocSSIP proforma was the intervention between the 3rd and 4th cycle.

Results Each cycle had an average of 22 patients (+-4). Prior to the first intervention adequate documentation was present in 33% of cases. This increased to 58% after the brief intervention. The third cycle (6 months later) showed 77% complete documentation and 46% requiring adjustment. After the formal teaching session, the 4th cycles the documentation was at 100% with only 6% requiring adjustment.

Discussion ICD insertion remains a common intervention, which carries a potential risk. Adequate documentation is required to fully assess progress and any movement of the drain. it is a procedure than often requires sedation and is uncomfortable for the patient; for this ideally the drain should be placed correctly first time not only to give the best treatment for the condition, but to reduce the distress for the patient.

98 Optimising perioperative management of microvascular breast free flaps: a closed-loop audit

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Introduction Microvascular breast free flaps are fundamental in postmastectomy reconstructive surgery. This study aims to assess and improve outcomes by implementing an enhanced perioperative care pathway for the management of microvascular breast free flaps.

Methods A single-centre closed-loop re-audit analysed microvascular breast free flap cases from March to May 2023 and compared them to the previous audit period. Data collected included unplanned returns to theatre (RTT), readmissions, and overall length of stay (LOS), excluding local/regional flaps and other anatomical sites. We compared our current practice against the ABS/BAPRAS 2021 Guidelines to ensure adherence to established best practices. An improved care pathway was implemented for the perioperative management of microvascular breast free flaps in accordance with the MDT including surgeons, clinical nurse specialists and the anaesthesia team.

Results Data from a total of 49 flaps were collected. In the current audit round, mean LOS decreased from 5.86 to 5.47 days, and complications decreased from 48% to 26%. No readmissions occurred within the 3-month audit. We established and implemented an enhanced perioperative care pathway for microvascular breast free flaps.

Conclusions Positive outcomes of the current audit period include shortened LOS and a reduced number of total complications, along with zero readmissions. Opportunities for enhanced patient care persist. We have devised an enhanced, evidence-based pathway for the perioperative management of microvascular breast reconstruction patients.

99 Consent in hand trauma surgery

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Introduction To understand if the consent process for hand trauma surgery patients was sufficient at our centre.

Methods Montgomery vs Lanarkshire stated that patients need to understand effects and risks specific to them, and alternative treatments. A questionnaire investigated whether patients undergoing hand trauma operations understood risks, benefits, alternatives, follow-up and effect on daily life.

Results Thirty patients completed the questionnaire following consent. While 93% stated they fully understood the risks, only 40% and 23% could state how long the injury would affect their ability to work and engage in usual hobbies, respectively. 60% understood their surgery would affect their ability to drive, and 43% (37% not applicable) and

63% (17% not applicable) had been explained to about the effect of comorbidities and lifestyle affecting the healing process, respectively. While 73% stated they had the post operative management explained to them, 63% did not know when they would be followed up, 46% were not sure who they would be followed up by. 70% were not sure how long they would need to keep their wound dry, and of those patients undergoing tendon repair (n=14) only 14% understood approximately how long they would need a splint.
Conclusions Generally, patients undergoing hand trauma surgeries did not understand the timings of post operative management and how their injury and surgery would affect their day-to-day life. Remediating this could improve patient satisfaction, compliance and patient-healthcare provider interactions. We have developed patient information leaflets with full stakeholder involvement to help disseminate this information and will perform a re-audit.

102 Improving staff knowledge of the penetrating neck trauma guideline at a major trauma centre: a quality improvement project

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Introduction Penetrating neck trauma (PNT) comprises approximately 10% of all trauma and is associated with a 10% mortality rate. International guidelines on PNT assessment are lacking. This project was undertaken at a London leading trauma centre. The local PNT guideline follows a traditional approach, dictating management based on the zone of the neck implicated.

The aim was to increase trauma staff knowledge of the PNT guideline, to 100% in the disseminated questionnaire for 6 months.
Methods A standardised online questionnaire was used to assess the trauma staff knowledge at baseline and following each cycle. Cycle 1 involved the guideline display in poster form in all relevant areas and delivery of small group teaching for 1 month. Cycle 2 assessed recall at 3 months to determine the sustainability of the interventions.
Results A total of 114 responses was collected. Mean scores increased significantly from 31±18% at baseline to 84±10% after Cycle 1 (t=16.1, p<0.001). However, Cycle 2 showed that the improvement was not sustained at 3 months, with scores returning to 33±27% (t=0.4, p=0.685).
Conclusions Display of posters, combined with small-group teaching are effective in transiently increasing trauma staff knowledge of the PNT guideline, but fail to result in sustained improvement. The main barriers identified, include the frequent turnaround of staff and the lack of familiarity with the traditional zonal approach to PNT assessment, which is not an integral part of undergraduate medical training. The latter has also been highlighted in literature and a move towards an ATLS-based approach has been proposed.

103 Vacuum-assisted mini-percutaneous nephrolithotomy (Mini-PCNL) with ClearPetra sheath: initial experience and outcomes

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Introduction EAU Guidelines recommend percutaneous nephrolithotomy (PCNL) for renal stones larger than 2cm or staghorn calculus. Miniaturisation of PCNL has facilitated safer surgery by reducing complications associated with standard PCNL but have new challenges including deficient vision, increased intrarenal pressure, finer fragmentation requirement and longer operating times. At our institution, 16.5Fr ClearPetra sheaths have been introduced, which provide concurrent suction While irrigation fluid is applied during vacuum-assisted Mini-PCNL.
Methods Data was collected retrospectively from all mini-PCNL cases over a six-month period using hospital theatre system, operative notes, discharge letters. Information gathered included operative time, number of punctures, stone size and size, admission length and stone-free status. Complications of intraoperative and postoperative bleeding, urine leak, sepsis, injury to surrounding structures were collected.
Results 7 patients were identified. 6 were for renal stones and 1 for stent encrustation. Mean age was 58.14. Mean stone size was 2.24cm. Mean operating time was 209mins. All cases used 1 puncture. Only one patient required 2 days hospital stay due to post-operative haematuria. Remaining 6 cases were discharged subsequent day. There were no other post-operative or intraoperative complications reported. 2 patients were stone-free at 3-month follow-up scans. 5 patients do not have follow-up imaging yet. 1 patient had a residual upper ureteric stone after treatment for stent encrustation. The operation was halted due to prolonged procedure from marked stent encrustation, unrelated to vacuum sheaths. Intraoperative fluoroscopic stone-free rate was 85.71%.
Conclusions Our experience of vacuum-assisted Mini-PCNL with ClearPetra sheath has been largely positive and shown to be safe with minimal complications.

104 Ureteric stent passport: improving patient stent knowledge and care

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Introduction Prolonged ureteric stent indwelling time can lead to encrustation, obstruction, and sepsis. Encrustation is a recognised complication associated with ureteric stents with serious implications including loss of renal function, and additional invasive surgery for stent removal. Patient's understanding of stents as an intermediate step before definitive stone management can help prevent stents being 'forgotten' and reduce stent indwelling time. Our previous audit findings demonstrated a notable lack of patient knowledge regarding stents. A stent passport was designed to be given to each patient, with indication, maximum duration of stent, timing of stent removal and who to contact to arrange stent removal. This study re-assessed understanding after mandatory stent passport was implemented.
Methods A prospective single institution study was conducted over 1-month period for all patients undergoing ureteric stent insertion. A questionnaire was given to patients to assess their understanding and knowledge of their stent. This was compared to data collected in the pre-stent passport period. Chi-Square test of independence was used for statistical analysis for nominal variables.
Results 19 patients were detected having emergency stent insertion in the pre-stent passport period. In the post-stent passport period, the stent passport was given to 8 patients. Post-stent passport, 76% knew the maximum stent duration (cf. 63% pre-stent passport). 88% knew the timing of removal (cf. 21% pre-stent passport). 71% understood who to contact for removal (cf. 0% pre-stent passport). X^2 was 19.25 and p=0.001725.
Conclusions The introduction of ureteric stent passport has improved patient stent knowledge and care at our institution.

105 Ventriculoperitoneal shunt dysfunction in children with constipation

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Introduction To assess whether constipation significantly contributes to paediatric patients presenting with symptoms of VP (ventriculo-peritoneal) shunt under drainage dysfunction, in cases where no subsequent revision is performed.
Methods We identified all shunt series performed at the East of England Regional Neurosurgery Centre between 23/02/2019 and 23/02/2022. Next, we interrogated electronic patient records for a history of constipation or radiograph evidence of faecal loading. Faecal loading was defined as increased colon/rectum density, distension, or stool in the rectum.

Results 123 shunt series were taken, of which 60 showed no evidence of shunt dysfunction or revision. Of these 60, 50% showed evidence of radiographic faecal loading or clinical constipation ($p<0.01$).
Conclusions A 50% constipation rate was observed where shunt revision was not performed. Approximately 24% of paediatric cases with shunt under-drainage dysfunction had concurrent constipation ($p<0.01$), inferring constipation may affect the shunt's pressure gradient and contribute to under-drainage dysfunction. One case demonstrated symptomatic improvement after a bowel movement.
Key recommendations Implement high-fibre diets and regular disimpaction regimes for all paediatric patients with a VP-shunt in situ to reduce the risk of re-admissions from presumed underdrainage.

107 Clinical audit to improve the current practice management of discitis

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Introduction To assess the implementation of the trust protocol on management of discitis and its outcome.
Methods Retrospective clinical audit conducted over January 2020–August 2022 in Ashford and St. Peter's Hospital. All patients with symptoms of discitis and positive MRI spine findings were included in the study. Excluded old cases of discitis with no active intervention or resolved discitis.
Results 12% of cases were diagnosed with discitis after MRI spine out of 420 suspected cases. 62.7% of the patients had classical clinical features of discitis. Most common site was found to be lumbar with single disc involvement (66.6%). Most common organism involved was staphylococcus aureus (44%) and most common antibiotic used was flucloxacillin. 39.2% of cases were associated with spinal canal stenosis. Most common co-existing infection was found to be paravertebral abscess, urosepsis and infective endocarditis. 49% and 19.6% had blood culture and CT-guided biopsy done, respectively. 60.8% received long-term intravenous antibiotics for an average duration of 6 weeks and 78% of these patients improved. Follow-up MRI was done in 31%.
Conclusions Discitis is a rare and serious condition. Early diagnosis and timely management with long term antibiotic is important for optimal outcome to prevent long term complications like paralysis, kyphosis, persistent back pain. The choice of antibiotic is to be discussed with the microbiologist and adequate analgesia and physiotherapy is required. Most of the cases were failed to follow-up for long term outcome. Repeat MRI spine and inflammatory markers are required at the end of long-term antibiotics.

111 Does Liquiband skin adhesive offer a safe and effective alternative to traditional suturing in the closure of paediatric circumcision wounds?

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Introduction To determine if there is a difference in the rate of postoperative complications in boys who have undergone circumcision with sutured wound closure compared to those who have undergone closure with the skin adhesive Liquiband.
Methods Patients who had undergone circumcision between 7 June 2018 and 18 May 2023 were identified using surgical records on eLogbook. Corresponding hospital numbers were then searched on the local electronic record system to review the operation note and to assess if the patient had any postoperative complications. Postoperative complications were defined as attendance to the emergency department with treatment for a surgical complication such as bleeding or infection within the following 3 weeks.
Results 150 patients were identified. 73 underwent circumcision with sutured wound closure while 76 patients' wounds were closed with the addition of Liquiband. 1 patient was excluded as the operation note was not available. Postoperative complications were recorded in 8 patients who received the traditional closure method and 12 patients who received Liquiband. Chi squared and Fisher's exact test were performed with p values of 0.3872 and 0.4738, respectively. There is no statistically significant difference in the rate of postoperative complications.
Conclusions Liquiband skin adhesive is an effective and safe method of closing paediatric circumcision wounds. It is a suitable alternative to traditional sutured closure, with no evidence of increased postoperative complications.

114 Adherence of trauma and orthopaedics operative notes to the RCS Good Surgical Practice Guidelines

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Introduction Auditing the adherence of trauma and orthopaedics operative notes to the RCS Good Surgical Practical Guidelines.
Methods Clinical audit conducted on 150 operative notes over a period of 2 months April–May including emergency and elective surgeries performed in Ashford and St. Peter's Hospital. The RCS Good Practice Surgical Guidelines for an ideal operative note was used to compare.
Results Date of procedure and signature of surgeon were mentioned in all the notes by default in the electronic template used. Title of the operation performed and elective or emergency were mentioned by 92% and 45%, respectively. Name of theatre anaesthetist and operating surgeons were mentioned by 73% and 93%, respectively. Time of surgery mentioned by 26%. Operative findings and diagnosis mentioned by 83% and 53%, respectively. Incision and complications of surgery mentioned in 80% and 53%, respectively. Details of tissue added/altered/removed mentioned by 46%. Information on prosthesis or implant used is mentioned by 54%. Details of closure and anticipated blood loss mentioned in 91% and 45%, respectively. Antibiotic prophylaxis and VTE prophylaxis mentioned in 63% and 84%, respectively but most of the notes lack the type of prophylaxis and duration.
Conclusions There is more room for improvement in the operative notes for better continuity of care. Recommended to follow standardised guidelines by all surgeons to prevent any room for confusion and proper documentation according to the guidelines. Recommended to conduct similar audits across all the trusts nationwide and a standard template to be followed by all.

117 'Home in Time' early surgical discharge quality improvement project

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Introduction 'Home in Time' project to facilitate early surgical discharges and alleviate bed capacity challenges.
Methods An audit over three weeks in October 2022 revealed that 80% of the delays were due to late 'To Take Away advise' (TTAs)/discharge summaries, 20% due to change in clinical status and transport delays. Challenges faced by the nurses and doctors were collated. Existing ward round and discharge process were reviewed; an early surgical discharge plan was formulated. Potential patients for discharge in the next 24hrs were identified by doctors and nurses. TTAs and discharge summary drafted in advance. The following day the 'Golden discharge patients' were reviewed by the registrar at 08:00am, discharge plan communicated to nurses and FY1 completed the summaries early.
Results This was implemented in the pilot phase in November 2022. During this period among the 17 identified 'Golden discharge patients', 59% of the discharge summaries were completed by 11:00am. During the same trail week when all discharge times were analysed, 40% were completed by 11:30am, and only 10% were completed after 2pm, this was a significant improvement compared to the 44% late discharge summaries.
Conclusions A proactive approach to identifying potential discharges, good communication and a change from the conventional ward round pattern to a flexible one to see the golden discharge patients

first and allowing the FY1 to complete the discharge summaries, patients can be discharged in time and bed space is available early for use by the bed managers for patients waiting to be admitted.

118 Audit of compliance of VTE prophylaxis guidelines (NICE and ACPGBI) after colorectal cancer resections

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Introduction Venous thromboembolism (VTE) occurs in 2–3% of patients undergoing colorectal cancer resections. A compliance audit of adherence to NICE and ACPGBI guidance to VTE prophylaxis (in-hospital and 28-day extended VTE prophylaxis) was undertaken.
Methods Twenty-six elective cancer colorectal resections over a 10-week period were retrospectively reviewed; type of surgery, VTE risk assessment, postop VTE prophylaxis and at discharge were analysed.
Results The resections were for adenocarcinoma (8 right hemicolectomy, 11 anterior resection, 1 APER) and NET-neuroendocrine tumours (5 enbloc mesenteric nodule and right hemicolectomy, 1 anterior resection). More than two-thirds were done via laparoscopic approach. All patients had VTE risk assessment done and prophylaxis prescribed. 30% had low molecular weight heparin (LMWH) given on the day of surgery. Prophylactic LMWH was withheld in four patients (two patients for 24 hours due to bleeding p/r, two patients refused the injection for 1–3 days).

All patients had extended VTE prophylaxis prescribed at discharge (two who did not had been in the hospital for 28 days). Two patients needed escalation to treatment doses of LMWH in the postoperative period (left portal vein thrombosis in a liver transplant patient following anterior resection, superior mesenteric thrombus in a patient undergoing enbloc mesenteric nodule resection and right hemicolectomy for NET tumour).
Conclusions Overall, the compliance for both in-hospital and extended VTE prophylaxis was good. Majority of patients did not receive LMWH on the day of surgery due to various factors (increased oozing intraoperatively, surgeon's preference, late in the day finish of case).

119 Acute uncomplicated diverticulitis – do we treat it right?

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Introduction Acute diverticulitis is a condition where there is microscopic or macroscopic perforation of a diverticulum due to diverticular inflammation and focal necrosis. The treatment of acute uncomplicated diverticulitis (AUD) has been studied but there is still conflict in the surgical community regarding the use of antibiotics. We aim to compare our practice with the ACPGBI, WSES and NICE guidelines on the management of AUD.
Methods The medical records of all adult patients (>16 years) admitted to Ipswich Hospital with AUD between 1 April 2020 and 1 April 2023 were screened and included in this retrospective study.
Results 209 patients were diagnosed with AUD. CRP was detected less than 100 mg/l in 155 patients (74.2%), however only 107 (51.2%) were discharged home the same day. 179 (85.6%) patients with AUD were treated with antibiotics, while only 30 patients (14.4%) were treated without antibiotics. The patients in the non-antibiotics group were younger ($p<0.001$), had fewer comorbidities ($p=0.001$) and lower ASA grade ($p<0.001$). Treatment with antibiotics was associated with a borderline lower mortality ($p=0.001$) and longer hospital stay ($p<0.003$). Only 2 (11.7%) patients treated without antibiotics were re-admitted. In the multivariate analysis, the treatment without antibiotics was an independent risk factor for overall complications compared to the antibiotic approach (odds ratio=2.76; 95% CI 1.2–7.4; $p=0.026$).
Conclusions The majority of the patients with AUD could have been managed successfully without antibiotics in the outpatient setting without compromising their treatment. A step-by-step AUD flow chart is created to help the admitting surgical team follow the appropriate steps for the better management of AUD.

122 Routine pre-scheduled 'Case of the Week' surgical teaching improves confidence of foundation trainees in management of surgical patients: a completed audit cycle

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Introduction A 'Case of the Week' teaching programme was designed and piloted at Royal Stoke University Hospital in 2023. The aim was to assess whether the addition of departmental teaching can provide a high impact surgical experience to foundation doctors.
Methods We ran a 'Case of the Week' teaching programme over 3 months to foundation doctors in general surgery, vascular and urology rotations. We used a survey before and after to assess multiple aspects: prior experience to surgery, current level of teaching on surgical pathologies within the foundation programme and overall confidence in managing common presentations in Surgical Assessment Unit (SAU). Core surgical trainees were responsible for delivering teaching sessions, and topics that doctors lacked confidence in were used to create a curriculum for the programme.
Results The qualitative analysis of the results before and after the programme showed there was a significant improvement of confidence in all basic surgical topics, and they were able to apply what they had learnt during their SAU shifts. 100% of doctors felt this programme was helpful and should be continued.
Conclusions This teaching programme led to an improvement in foundation doctors' confidence in basic surgical topics. It has also reinforced the value of departmental teaching through case-based learning and how it can be an essential tool in maximising exposure to surgical training.

123 Audit on compliance of LAOPS checklist in minor operations in the plastics surgery department of lister: to prevent zero events

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Introduction Three 'never events' were reported in the Lister Hospital Plastics Surgery Department. Wrong skin lesions were excised or biopsied in minor operations by plastic surgery registrars, and complaints were made against the department in PALS.
Intervention We modified the LAOPS checklist. We added four different methods of identification of lesions, added space for both doctors and nurses working in the case to sign, and made it mandatory for both to sign. We expected at least one method of lesion identification to be chosen before proceeding with surgery, and it was made clear not to proceed if otherwise. We audited to find out the compliance of the LAOPS checklist in the department.
Methods Nurses in minor operations collected the LAOPS checklist from 22 May to 2 June. A total of 75 patients were identified.
Results The compliance with the LAOPS checklist was not 100%, as 3 of 75 (4%) of the checklist had no methods of identification chosen, and yet the registrar proceeded with the surgery. We re-audited on 07/23 to see the compliance, which was found to be 100%, and no 'never events' have been reported so far.
Conclusions 'Never events' are defined as serious incidents that are wholly preventable because guidance or safety recommendations that provide strong systemic protective barriers are available at national level and should have been implemented by all healthcare providers. Basic steps such as compliance with the LAOPS checklist, adapted

from the WHO surgical checklist, could prevent financial loss in terms of compensation and aid in patient safety.

124 Spontaneous stone passage of ureteral stones in patients with a percutaneous nephrostomy for acute ureteric obstruction

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Introduction Percutaneous nephrostomy (PCN) insertion for urinary diversion in acute ureteric obstruction has become a common procedure. Current research evidences its high success rates and acceptable complication rates, but there is limited research on its effect on spontaneous stone passage. The purpose of this study is to explore the clinical outcomes of ureteroscopy after nephrostomy insertion.
Methods All patients who had nephrostomy, retrograde ureteroscopy and laser lithotripsy between June 2017 and June 2023 were identified retrospectively. Patient and stone demographics, procedural and postoperative details, and complications were collected and analysed. The primary outcome was successful spontaneous stone passage confirmed endoscopically.
Results 104 patients were identified during this time. The median stone size was 8mm (IQR 6–10mm) and 27% (n=28/104) of patients presented with culture positive sepsis. 34% (n=35/104) of patients re-presented due to nephrostomy complications. For 9% (n=9/104) of patients at ureteroscopy, no stone was found, and it was concluded that the stone had spontaneously passed. In this group, the average time for ureteroscopy after PCN was 68 days, and stone size and location were not found to be significant predictors of successful spontaneous stone passage.
Conclusions The rate of spontaneous stone passage of ureteral stones after nephrostomy insertion was 9%. As ureteroscopies are an invasive procedure with associated morbidity, we recommend the use preoperative imaging for all patients to confirm stone position and reduce preventable surgical complication rates.

125 Residual volume and DRE/PV documentation in patients presenting with urinary retention – a closed loop audit

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We conducted a retrospective primary audit which included 20 patients who presented with retention of urine between 30 August 2022 and 4 October 2022. We looked at the documentation from A&E and admitting team to see whether a residual volume was documented at the time of catheter insertion and whether these patients have had a DRE/PV examination during their inpatient stay.

We found that only 9/20 patients had residual volume documented despite having catheters inserted mainly in the A&E setting by clerking SHO's from the admitting team. Only 3/20 patients had clearly documented DRE/PV examination findings during their inpatient stay.

We introduced interventions in the form of raising awareness and educating the teams who would encounter these patients during their admission or are the people who would see them at admission.

We re-audited this by looking at 19 patients retrospectively who were admitted with retention of urine between 13 October 2022 and 17 November 2022. 15/19 patients had residual volumes documented at the time of catheter insertion. 10/19 patients had clear documentation of DRE/PV findings during the admission. This showed an improvement in compliance with guidelines, however, highlighted areas for further improvement as we should have 100 percent compliance.

127 ReSPECT form compliance in a major trauma centre's orthogeriatric cohort - a closed loop audit

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Introduction BOAST guidelines regarding the care of older or frail trauma patients suggest that the ceiling of treatment, escalation, and appropriateness of cardiopulmonary resuscitation should be discussed with all patients, with decisions made at a consultant level. The aim of the audit was to investigate current ReSPECT form practices in orthogeriatrics in regard to timing, completeness, and senior oversight.
Methods A retrospective electronic review of 4 weeks of admissions to the orthogeriatric ward was performed. Patients' clerking notes and discharge summaries were reviewed for presence of a recorded ReSPECT form, including time to completion from admission date, and seniority. The results of the audit were presented at the departmental doctor's induction in person and electronically, while simultaneously raising awareness of the subject and posing suggestions on how to improve compliance.
Results Our initial audit included 93 consecutive orthogeriatric patients admitted over a 4-week period. Of these, 68.8% of patients had a valid ReSPECT form either completed on admission, or pre-existing on the hospital system, with 50% of these having been completed or verified by a consultant. Our re-audit three weeks post intervention found that ReSPECT form completion rates increased to 87.5%, with 87.5% of these reviewed by a consultant. The completeness of individual ReSPECT forms recorded was excellent across both audit cycles.
Conclusions Treatment escalation planning, including appropriateness of cardiopulmonary resuscitation, is imperative in the orthogeriatric patient cohort. Our closed loop audit demonstrates how using simple measures to raise awareness and depict current practices can have significant impact on ReSPECT form compliance.

128 A review of emergency general surgery (EGS) admissions via the direct access pathway (DAP) in a district general hospital

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Background Patients presenting with emergency general surgical (EGS) conditions require urgent management – however, increased waiting time in A&E often leads to delayed diagnosis and subsequently delayed management. Having a direct access pathway (DAP) to surgical emergency assessment unit (SEAU) helps minimise these delays and leads to better outcome in management of these patients.
Methods A retrospective observational study of EGS admissions in May 2023 was performed. Structured DAP referral proforma was implemented for patients to be directly referred to SEAU from A&E triage. Factors taken into consideration were initial presentation, source of referral, time of initial assessment and patient outcome.
Results A total of 188 referrals were made to SEAU, of which 46 (24.5%) were DAP referrals. The average number was 18 over weekdays and 10 over weekends. Of these, 97.8% of referrals were appropriate with correctly filled out proforma, whereas 2.2% were inappropriate referrals. 33% patients were discharged, 10% were admitted, and 10% were planned to return for investigations the following day. The median waiting time for initial assessment was 1.5 hours. The most common presentations were RUQ Pain, subcutaneous abscess and RLQ pain which correlated with the final diagnosis. It was also noticed that when compared with May 2022 (176 patients during the same 2-week period), there was 6.8% increase in referral since commencement of DAP.

Conclusions The DAP for EGS admissions has been seen to have improved patient outcome as a result of avoiding unnecessary steps and delays before being reviewed by the surgical team through A&E pathway.

131 Colonoscopy audit – are we collecting the correct biopsies?

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Introduction The British Society of Gastroenterology (BSG) states that patients presenting with chronic diarrhoea should have a colonoscopy and biopsy of right and left colon to exclude microscopic colitis (lymphocytic colitis and collagenous colitis). This is a form of inflammatory bowel disease with several causes including autoimmune, genetics and bile acid malabsorption. The aim of this audit is to analyse if biopsies are taken as per BSG guidance.
Methods For the first audit cycle the Unisoft database at the West Suffolk Hospital was used to study all patients who had a colonoscopy between 3 January 2020–12 May 2021. As an intervention all endoscopy users within the hospital were identified and emailed directly summarising the BSG guidelines. The Unisoft database for all patients who had a colonoscopy between 23 September 2021–30 October 2021 were investigated.
Results For the first audit cycle 249 colonoscopy cases for chronic diarrhoea were analysed. In 53 cases, an alternative diagnosis was reported e.g. polyps, diverticulosis, ulcerative colitis. 161 cases out of the 188 (86%) cases remaining had biopsies obtained as per BSG guidance. For the second audit cycle 37 colonoscopies for chronic diarrhoea were analysed. 19/20 (95%) cases had correct colonic biopsies taken as per BSG guidelines.
Conclusions As per BSG guidance it is important to take biopsies from the left and right colon to ensure you exclude microscopic colitis as a diagnosis. Interventions such as presenting guidelines to specific users of endoscopy is effective in communicating the latest evidence and can improve biopsy technique for more accurate diagnosis.

133 Audit to improve Lister Hospital's performance on National Hip Fracture Database (NHFD) in regard to the operative management of extracapsular neck of femur fractures

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Background The NHFD shows Lister Hospital has not been managing extra-capsular NOFs according to NICE guidelines, with only 74% compliance for A1/2 and only 88.4% compliance for A3 fractures in September 2022. But when we looked retrospectively at the last 50 patients with extra-capsular NOF (September–November 2022), we found out that 94.5% of A1/2 extra-capsular NOF were treated with DHS, and 100% of A3 fracture types were treated with IM nails, which was according to NICE guidelines.

Therefore, we did an audit to find out the reason why Lister's performance in NHFD was not in accordance with our findings and proposed a solution for the problem.
Methods We looked retrospectively at the last 50 patients with extra-capsular NOF (September–November 2022) and correlated the findings with the NHFD form for each individual.
Results Out of 37 A1/2 NOF, only 18 were documented as correct, the rest 13 as intracapsular NOF, and 6 of the forms were left incomplete.
Discussion The reason for this was that forms are filled out postoperatively by NOF nurses; they don't have access to view the images. They rely on radiographer reports, which can be incorrect sometimes. They ask doctors in the office to classify the type of NOF (unsure of experience). There is no documentation about the type of NOF in the operation notes.
Recommendations Clear documentation of the fracture site in the 'findings' section of the operation note to be recorded by the operating surgeon. NOF nurses should look only here for information to submit to NHFD.

135 A closed-loop audit to improve compliance with the liver shrinkage diet in elective cholecystectomy patients with high BMI

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Introduction The liver shrinkage diet is a pre-operative intervention that reduces operative time and blood loss and improves ease of dissection in laparoscopic cholecystectomies. This project aimed to evaluate and improve compliance with the utilisation of the liver shrinkage diet in patients with a BMI ≥ 35 undergoing elective laparoscopic cholecystectomy in line with trust guidelines.
Methods A two-cycle closed-loop audit was performed. The first cycle evaluated baseline compliance by reviewing electronic health records of 150 eligible patients. Findings were discussed at a local governance meeting, leading to targeted interventions: remodelling of booking forms to include diet guidelines, educational posters in clinical areas, training sessions for junior medical staff, and collaboration with the preoperative team. Data was again prospectively collected to re-audit and re-evaluate adherence to protocol.
Results The initial cycle revealed a 60% adherence rate to trust guidelines, with 10% of surgeries being cancelled due to non-compliance with the diet. Post-intervention, the second cycle has demonstrated a preliminary significant improvement of 90% adherence rate.
Conclusions The audit successfully increased compliance with the liver shrinkage diet by 30%, achieving a 90% adherence rate among high-BMI patients undergoing elective cholecystectomy. The results underscore the efficacy of multi-faceted interventions in improving adherence to clinical guidelines, thereby optimizing patient outcomes. Future research should focus on the long-term sustainability of these interventions and their direct impact on clinical outcomes.

138 Assessing effect of surgical skills teaching on clinician morale

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Introduction In the world of ever-changing medicine, often the clinical expertise of a department fails to be reflected in teaching to their fellow juniors. In a busy orthopaedic department of a major trauma centre, we offered free plastering workshops to interested clinicians. This explores the effect of practical skills teaching on clinicians' morale.
Methods Pre-workshop questionnaires were circulated to participants identifying baselines in terms of confidence with plastering, views on formal teaching of practical skills and workplace morale. Following the workshop, a further feedback questionnaire looked at the subjective difference felt by participants, commenting on their perspective of morale in the workplace and the lack of mandatory core procedures as part of the foundation year programme portfolio.
Results The workshop registration prompted a waiting list due to capacity not being able to meet demand. A significant number (91%) of participants agree that practical skills teaching boosts morale at the workplace. Formal teaching in surgical specialties that was desirable among attendees include plastering, suturing, ultrasound and fracture management. 100% of respondents desire more formal teaching on practical skills and think that it would be beneficial in their development as clinicians. 73% of respondents that are foundation year trainees feel that mandatory core procedures should be reinstated.

Conclusions The questionnaire shows a boost in clinical morale when learning practical skills relevant to their workplace. Improvement in the education aspect is needed to improve the knowledge and skills of fellow clinicians with a budding interest in surgery.

139 Investigating the accuracy of electronic patient record systems in general surgery operations – a tertiary centre audit first phase quality improvement project

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Introduction Over the last decade, electronic patient record systems (EPRs) have gained widespread adoption across numerous NHS trusts. In the constantly evolving healthcare environment, the implementation of these systems has been deemed crucial for improving patient care and operational efficiency and this trend is expected to continue as such technologies improve. There are however very few studies that have investigated EPR data quality. This study presents the findings of a quality improvement project, conducted in a tertiary centre, aimed at assessing the accuracy of EPR systems in the context of general surgery operations.
Methods The CEPOD and elective theatre lists at Manchester Royal Infirmary and Trafford General Hospital were interrogated over one month. EPR documentation and historical archived notes were reviewed by two independent reviewers. Operation note documentation was compared to the RCS England and the Getting it Right First Time (GIRFT) Operation Note Guidelines and then subsequently compared to the operation filed in the patient notes.
Results 186 patients were included across the two sites. 92% of operation notes met the GIRFT criteria, although surprisingly, the operation recorded in the patient's EPR diverged from the operation note in a substantial 48% of cases.
Conclusions EPR recording of general surgery cases in this two-centre first phase quality improvement project were inaccurate and comparable to that of handwritten operation notes. This has implications for postoperative care of patients and coding processes which affect remuneration for NHS trusts. Development of digital EPR systems or alternate digital solutions may be required to improve this.

151 Paperless handover: an effective measure worth taking

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Introduction Effective handover is an essential tool for a safe transfer of patient care from one team to another. However, handover is still internationally recognised as a high-risk area for medical errors, and it remains one of the top five priorities for the WHO. T&O department at Morriston Hospital had relied on using a paper-based handover which was used by the orthopaedic, spinal and orthogeriatric teams to hand over weekend jobs to ward cover SHO. This form of handover was associated with a high number of clinical incidences and complaints.
Methods All weekend handover sheets for September 2022 were audited against the minimum standards of the Royal College of Surgeons of England (RCS England) for safe handover. There were also electronic surveys that explored the T&O SHOs' perspective of the weekend handover system and proposed a new intervention using the available health board Microsoft OneDrive system.
Results An overall poor compliance rate with RCS England guidelines was detected (0% for orthopaedics, 70% for OG & 90% for spinal). Surveys showed that 100% of the SHOs did not find the handwritten handover a safe tool and, unsurprisingly, 100% of them were in favour of using Microsoft OneDrive. The QIP which involved using the virtual system was introduced in October 2022 and resulted in a reduction of Datixs from 4 in September 2022 to zero.
Conclusions Using a paperless handover that utilises the available electronic local health system is a cost-effective and efficient way of providing a safe handover within the T&O department.

152 Surgical site infection after hip fracture surgery: a prospective follow up audit of monocryl wound closure

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Background Hip fracture is a common traumatic injury that has a UK incidence rate of 76,000 cases every year and makes around 25% of all fractures in geriatric population. 60% of those patients also have a minimum of one medical comorbidity which makes them vulnerable to develop a surgical site infection (SSI). Developing SSI in case of single hip replacement surgery is linked with increased morbidity, mortality and can incur extra financial cost of $28,000.
Methods This is the third cycle of a prospective follow-up annual audit which focuses on all hip fracture cases that have been admitted to Morriston Hospital (MH) in the period between March to September 2022. Inclusion criteria involved all adult patients who were admitted with NOF fracture, but we excluded all periprosthetic, femoral shaft and distal femur fracture cases.
Results Total sample size was (n=373) but only (n= 356) involved. The mortality rate was 31/356 (8.7%) of which (non-operative n=4 & SSI n=2). SSI incidence rate was 12/356 (%3.4) (hemiarthroplasty 58% and intramedullary nail 42%). 94% of all cases had chlorhexidine as skin preps while 6% had betadine solution. The ration of operating surgeon on this audit was 2:10. (Consultant/SpR).
Conclusions Current SSI rate in hip fracture surgery at MH is higher than national and published standards. Hemiarthroplasty and IMN surgeries carry high risk of SSI while no infection cases with DHS or THR in this audit. MH current practice for extracapsular NOF involves using more IMN (96/356) than DHS (73/356) which require reviewing.

155 Using artificial intelligence models to reduce prescribing errors in surgery: a large multi-centre audit

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Introduction This large closed-loop audit aimed to evaluate and reduce the incidence of surgical inpatient prescribing errors within an NHS trust using natural language processing (NLP) model.
Methods All DatixWeb prescribing errors reported in the trust over a 207-day period were screened and analysed using an open source NLP tool. Thematic trends were identified, and preventative educational material was subsequently developed to address recurrent themes. The material was disseminated to all trust prescribers via email, teaching sessions and multidisciplinary meetings. A second 80-day period was then re-audited. Average 30-day error rates were calculated for each cycle respectively to facilitate comparison.
Results 163 errors occurred during cycle 1 vs 36 in cycle 2. The second cycle demonstrated a substantial reduction in prescribing error rate following the intervention. The first cycle recorded 23.6 errors per 30 days, compared to 13.5 during cycle 2. Medications most frequently involved in incidents were infusions, anticoagulant and antibiotics. Themes identified in the first cycle and targeted by educational intervention included allergies, renal function, discharge summaries and patient ID. Post-intervention error reductions were observed in every category.
Conclusions This audit validates the efficacy of NLP analysis to guide the production of preventative interventions for avoiding prescribing inpatient prescribing errors in medicine and surgery. DatixWeb conveniently ensures error reporting data is preformatted appropriately for such analysis. Continuation of regular interval auditing and targeted intervention should be encouraged to maintain the reduction effect observed in this project. Efficient error

recognition, education and multidisciplinary collaboration are evidently conducive to the minimisation of prescribing errors.

156 Sepsis form in patients present to Whipps Cross Hospital

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Introduction The aim of this study was to evaluate the use and completion of sepsis form.
Methods The data were collected from 26 patients who were admitted with suspected sepsis from January to May 2022. The data included the patient's age, gender, diagnosis, etc. Descriptive statistics and chi-square test were used.
Results The results showed that only 4 out of 26 patients (15.4%) had a sepsis form completed during their hospitalisation. The mean age of the patients was 65.8 years (range: 38–89 years), and 15 (57.7%) were male. The most common diagnosis was pneumonia (11 patients, 42.3%), followed by urinary tract infection (6 patients, 23.1%), and skin and soft tissue infection (4 patients, 15.4%). The majority of the patients (19, 73.1%) had at least one comorbidity. The mean systolic blood pressure was 122.7 mmHg (range: 88–180 mmHg), the mean heart rate was 102.3 (range: 72–160), the mean respiratory rate was 22.5 (range: 16–36), the mean temperature was 37.8°C (range: 36.2–39.6°C), and the mean oxygen saturation was 93.8% (range: 82–100%). The mean white blood cell count was 14.9×10^9/L (range: $4.6–38 \times 10^9$/L). The patients who had a sepsis form completed were more likely to receive timely antibiotics (100% vs 54.5%, p=0.02), and fluid resuscitation (75% vs 31.8%, p=0.04), than those who did not. Shorter length of stay (7 days vs 11 days, p=0.18) compared to who did not. This has been re audited and results improved.
Conclusions Sepsis form was associated with improved adherence to sepsis guidelines and better clinical outcomes.

158 Enhancing adherence to BSSH guidelines for hand injuries requiring surgery: a two-cycle audit

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Introduction This study assessed compliance with the British Surgical Society of the Hand (BSSH) guidelines for surgical intervention timelines of hand injuries and evaluated the impact of implemented interventions on reducing wait times at a major trauma centre.
Methods A two-cycle audit was conducted to evaluate adherence to BSSH guidelines. Cycle 1 included 60 patients over six weeks and measured five injury categories and patient waiting times. Following this, interventions were introduced, including training, guideline communication, and increasing weekly theatre availability. Cycle 2 included 43 patients over four weeks, assessing surgical wait times and guideline compliance. Statistical analysis was then performed.
Results Cycle 1 showed a 6.46-day average wait time for surgery, with 1 out of 5 injury categories meeting the BSSH guidelines. Cycle 2 reduced the average wait time to 5.14 days, with 3 out of 5 categories adhering to guidelines. Statistical analysis yielded a P value of 0.088, indicating a trend towards improved outcomes. Insufficient theatre capacity remained the primary contributor to delays (37% vs 45%).
Conclusions This two-cycle audit underscores the importance of adhering to BSSH guidelines to support patient outcomes. Implementation of interventions, such as staff training and increased theatre availability, resulted in a notable reduction in surgical wait times and an enhanced adherence to guidelines. While the statistical significance was not achieved, the observed trend towards improved outcomes indicates the efficacy of the interventions. Further initiatives targeting theatre capacity could potentially yield more significant enhancements in patient care and guideline adherence.

159 Enhancing documentation through an electronic clerking proforma for hand injuries in a major trauma centre – a multi-cycle audit

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Introduction This study assessed the completion rate of the electronic clerking proforma introduced 2 years prior for all hand injuries presenting at a major trauma centre. This reflects the British Society for Surgery of the Hand (BSSH) standards of care and the GMC's emphasis on ensuring medical records are accurate, up-to-date, and complete.
Methods This study compares the two most recent cycles of data collection (cumulatively this is the 4th cycle). Cycle 1 included 60 patients and assessed the completion rate of the proforma in the hand trauma clinic over 1 week against the BSSH standards of care. Subsequently, interventions were introduced which included updating the proforma, improved clinical training and including patients seen by the on-call team. Cycle 2 included 86 patients over one week. Statistical analysis was then performed.
Results In both cycles, there was 100% uptake of the proforma by the clinicians assessing hand injuries. Overall, in both cycles there was a good completion rate of >90% in the 20 data points (Cycle 1 16/20 vs Cycle 2 18/20). Statistical analysis yielded a P value of 0.0001 (p<0.05). The key data point across both audits that requires improvement continues to be First Aid (5% vs 56%).
Conclusions This project demonstrates a clear improvement in the documentation of hand trauma patients over the two most recent audit cycles. Currently we continue to meet the BSSH standards of care, and the standards demonstrably highlight the importance of the electronic proforma, which promotes accurate and streamlined assessments of patients.

161 Morbidity and mortality in surgical simulation: a quality improvement project

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Introduction Increased clinical pressures within the NHS exacerbated by the COVID-19 pandemic has impacted upon surgical training. We develop a simulation programme based on clinical skills, leadership, and human factors in surgery to optimise lost surgical training and promote high standards of clinical care.
Methods Running once every month during protected teaching time, nurse practitioners and surgical trainees of all grades take part in scenarios designed to incorporate human factors and non-technical skills, as well as common and critical surgical presentations. Elements of each scenario relate directly to the ISCP curriculum and incorporate topics highlighted in morbidity and mortality meetings. Following a brief introduction, delegates are put into a high-fidelity simulation. Initially more junior trainees, then as the scenario progresses, escalating to higher trainees. Following the scenario, the faculty lead a 15-minute peer led feedback and surgical teaching based on key features on the scenario. The session is completed with WBA and CBD feedback.

All delegates are being tracked through the programme to identify areas of improvement on completion of the course. An MCQ paper was completed prior to the first session, along with a questionnaire highlighting their previous experience of simulation training. Following each session, delegates complete formal feedback and following completion of the programme, will complete a second MCQ paper.
Results Feedback has shown a statistically significant improvement in confidence of trainees in key surgical skills that relate directly to the ISCP curriculum.
Conclusions We aim to continue building surgical simulation into the future of surgical education.

162 Using integrated patient leaflets and consent forms to better aid patient understanding of oncoplastic breast surgery: a quality improvement project

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Introduction Patient leaflets are a key aspect of patient centred healthcare. If done well, patient leaflets offer a concise and effective method to inform patients about a surgical procedure. It is vital however, that the patient leaflet is not only relevant, but that the details within it are accurate.

This quality improvement project looks at improving current oncoplastic patient leaflets within our department. We aim to produce leaflets with a clear explanation of oncoplastic surgical procedures, the benefits, alternative treatment options and an accurate explanation of the risks that directly relate to those included in the consent process.

Methods We reviewed how effective current patient leaflets are, by collecting and analysing feedback from patients and clinicians. We identified areas for improvement and created a new integrated patient leaflet based on these results. A second feedback questionnaire was then completed by the same clinicians and patients.

Results Both clinicians and patients showed increased levels of confidence in the new set of leaflets. Feedback showed the new set of leaflets more accurately described the procedure. Furthermore, risks included in the leaflets were more clearly explained and showed higher similarity to risks included on consent forms.

Conclusions We have implemented a new set of patient leaflets within the department of oncoplastic breast surgery that have shown to be more clear, accurate and informative for both patients and clinicians.

170 Assessment of the management of hand injuries sustained by animal bites at a plastic surgery unit

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Introduction Mammalian bite injuries to the hand are a common presentation seen in the plastic surgery department. We wished to assess adherence to management standards set by the British Society of Surgery of the Hand (BSSH) at a plastic surgery unit.

Methods Data was collected from 36 patients over a six-month period. We presented our audit findings in our plastic surgery clinical governance meeting and distributed a management protocol and documentation proforma based on the standards set by the BSSH. We subsequently completed a second audit cycle collecting data from 10 patients over a two-month period.

Results 32 patients (89%) underwent debridement within 24 hours of injury. 27 patients (75%) received or were up to date with tetanus immunisation. All patients received antibiotics. 11 patients (31%) presented with clinical infection, and of these seven (64%) patients had wound swab sampling. 19 (53%) had a documented plan for strict hand elevation. The average duration of hospital admission and visits were 0.88 and 3.4 days, respectively. Data from our second audit cycle showed that 90% underwent debridement within 24 hours of injury. 100% received antiobiotics. 3 patients (30%) had clinical signs of infection and 100% of these had wound swab sampling. 100% of patients received or were up to date with tetanus immunisation. 6 patients (60%) had documented hand elevation advice. The average duration of hospital admission and visits were 0 and 2.5 days respectively.

Conclusions Improving knowledge of management of bite injuries increased adherence to standards for management, and subsequently admission length and hospital visits.

172 Adherence to guidelines in surgically managing patients presenting with pancreatitis secondary to gallstones

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Introduction The incidence rate for acute pancreatitis ranges from 5–35 per 100,000 cases. The most common cause of acute pancreatitis is secondary to gallstones, accounting for 50% of the total cases, but only 3–7% of patients with gallstones developing acute pancreatitis. Laparoscopic cholecystectomy is a common definitive treatment for acute gallstone pancreatitis and reduces the risk of recurrent pancreatitis and other gallstone related complications by 30%.

Current guidelines recommend that all patients who present with gallstone pancreatitis should be considered for a laparoscopic cholecystectomy during the index admission or within 2 weeks of discharge.

This study aimed to investigate the adherence to guidelines on surgical management of patients presenting with gallstone pancreatitis.

Methods 79 patients were identified between the period of February 2022 to February 2023 with pancreatitis secondary to gallstones. The primary outcome measured was time between surgical intervention and diagnosis, with secondary outcomes being method of diagnosis, imaging modality and whether antibiotics were given and their duration.

Results 40 patients underwent a laparoscopic cholecystectomy, with 30% performed as an inpatient. The mean number of days between diagnosis and laparoscopic cholecystectomy was 34 (±38). The most common primary imaging modality was an ultrasound (41%), with CT (37%) and MRCP (22%) being the second and third. 32 patients received antibiotics for an average duration of 6 (±5) days, with the most common indication being cholecystitis (97%).

Conclusions This study highlighted difficulty in meeting inpatient and/or two-week targets in surgically managing patients with gallstone pancreatitis.

175 Could using video otoscopy in audiology departments help cut NHS waiting times and costs?

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Introduction There is an ever-increasing demand for ENT outpatient appointments, prolonging NHS waiting times and increasing costs. Video otoscopy (VO) is a relatively cheap and effective tool being introduced by audiology departments to take photographs of concerning abnormalities within the ear for a referral. This project aims to determine if ENT referrals which include VO can help to reduce the number of appointments generated from audiology services.

Methods Retrospective analysis was performed on 80 patients referred to ENT from Musgrove Park Hospital Audiology Department or Specsavers between 19 March 2021–25 August 2023. All referrals contained VO images with some degree of abnormality and were triaged by ENT consultants. Outcomes included acceptance of referral, reason for referral rejection, appointment type including waiting time and appointment outcome.

Results Following triage, 52 referrals (65%) were accepted for an ENT appointment. 86% of rejected referrals had clear documentation for no ENT input following review of VO images, resulting in a 28% reduction of appointments generated. Most accepted referrals (65%) were given routine appointments, waiting on average 27 weeks to be seen in clinic. Those awaiting urgent appointments (23%) were seen on average 6 weeks later. Following their appointment nearly half of patients (49%) required no further contact from ENT.

Conclusions Inclusion of VO in referrals could potentially reduce the number of ENT appointments by up to a quarter, therefore could be an effective tool to help cut NHS waiting times and costs. Poor documentation after rejection of some referrals may have diluted this figure, future projects could look to improve this.

191 A quality improvement project (QIP) assessing suspected scaphoid fracture imaging modality choice against national guidance (NICE/BOA)

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Introduction Scaphoid fractures are the most common carpal bone fracture. Delayed diagnosis can lead to long-term effects and variability in imaging modalities exists nationally. The aim of this QIP is to provide an overview of imaging patterns against national guidance (NICE/BOA).
Methods 50 patients who were booked into clinics coded with suspected or confirmed scaphoid fracture were retrospectively reviewed. Electronic patient records were used to collect data. Findings were presented in our unit.
Results Out of 50 patients initially coded, 8 patients did not meet our inclusion criteria. All 42 included patients received x-rays in ED with specific scaphoid views in 37 patients. Average time to first cold clinic was 7.09 days. 41 patients attended clinic with 21 still having symptoms. Out of 21, 5 had further x-ray only, 11 had CT scan only, 2 had CT then MRI and 2 just had MRI only. 11 patients in total had confirmed scaphoid fracture in our cohort.
Conclusions This QIP highlights the variability in selection of imaging. Our unit scores 100% in immobilisation at presentation in ED and 88% in requesting scaphoid x-ray views in accordance with local guidance. NICE/BOA state that MRI should be requested at first presentation to ED or clinic however our compliance is only 2 out of 41 (5%). Because of these findings, we propose to the team to have dedicated MRI slots for patients on first presentation. Early detection can result in improved patient outcomes and reduce costs.

193 An audit to assess elective general surgery day case rates at a local district general hospital against national guidelines (BADS)

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Introduction The British Association of Day Surgery (BADS) states that a day case is when a patient must be admitted, operated upon and discharged on the same calendar day. The aim was to audit three general surgical elective operations against the standards set by BADS.
Methods This was a multi-centre retrospective audit of laparoscopic cholecystectomy, open inguinal hernias, and open paraumbilical/umbilical hernias between October 2022 to February 2023. Standard day case rates (%) as per BADS were as follows: open umbilical/paraumbilical hernia (90%), open inguinal hernia (90%) and laparoscopic cholecystectomy (75%).
Results 100 patients had umbilical/paraumbilical hernia repairs with 76 (76%) patients going home the same day and 24 patients staying from day 1–8. 17 out of 24 patients went home on day 1 with no clear indication as to reason for admission. 200 patients had open inguinal hernia repairs with 154 (77%) being performed as day cases. 46 (23%) patients stayed ≥1 day with 28 of these going home on day 1 with no clear indication for admission. 250 laparoscopic cholecystectomy procedures happened with 144 (57.6%) day cases. 105 (42.17%) of patients stayed ≥1 day and 1 patient died postoperatively. 71 patients went home day 1 post operation.
Conclusions This simple day case audit highlights that for these three elective operations our trust is not achieving the target day case standards. If we were to reduce the number of patients who stayed one night for no clear indication across our centres, we would be attaining the standards set by BADS.

197 Assessing adherence to BOAST guidelines in the management of paediatric forearm fractures

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Introduction The aim of this study was to evaluate the compliance of the orthopaedic department at University Hospital Lewisham with the British Orthopaedic Association Standards for Trauma (BOAST) guidelines concerning the management of paediatric forearm fractures between March and November 2022.
Methods Inclusion criteria encompassed skeletally immature patients presenting to the accident and emergency (A&E) department at University Hospital Lewisham with angulated forearm fractures that did not require surgical intervention due to patient or injury-related factors. A total of 40 patients were included in the study.
Results The study revealed that 55% of patients required fracture reduction, with 83.3% achieving satisfactory reduction. However, 16.7% of cases necessitated suboptimal reduction, requiring further acute management. Clinic reviews within 7 days of the injury were scheduled for 63.6% of patients. Documentation of the radial pulse was noted in 62.5% of cases, while digital capillary refill time was documented in 67.5% of cases.
Conclusions The findings underscore the importance of early diagnosis and appropriate management of paediatric forearm fractures in the A&E setting. Adherence to BOAST guidelines is crucial for achieving optimal outcomes in such cases. The study also highlights the potential for improvement in documentation practices among healthcare professionals, emphasising the need for increased awareness and adherence to established guidelines to enhance the quality of care provided to paediatric patients with forearm fractures. Further efforts should be directed towards promoting guideline-based practices among doctors to ensure consistent and comprehensive assessment and management of paediatric forearm fractures in the A&E department.

198 The implementation and departmental benefits of urethral s-curved coaxial dilatation as an adjunct at flexible cystoscopy during the COVID-19 pandemic

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Introduction Urethral strictures are routinely managed by direct-vision internal urethrotomy (DVIU) under general anaesthetic (GA). GA procedures were restricted by the coronavirus pandemic (COVID-19) thus the use of s-curved coaxial dilators (SCCD) during routine flexible cystoscopy clinics were initiated in our department. Current EAU guidelines state there is equitable efficacy between SCCD or DVIU as the initial treatment for strictures.
Methods From June 2020 all male patients found to have urethral strictures at flexible cystoscopy underwent SCCD. A retrospective review of cases from June 2020 until August 2021 was undertaken. Notes were reviewed for demographics, tolerance and complications. 10 patients were contacted at random during Q3 2022 to determine retrospective acceptability.
Results 55 successful SCCD dilations were performed at flexible cystoscopy and well tolerated. In 5 cases (8%) the SCCD dilation procedure were abandoned and a DVIU under GA was required. There was only one post procedure UTI which is equivalent to flexible cystoscopy alone and no other complications were recorded. On follow-up questioning all patients would be willing to have the procedure again.
Conclusions Although limited by its retrospective data collection and evaluation, this study has shown SCCD dilatation can be delivered in a diagnostic clinic by any practitioner trained in flexible cystoscopy. In total an estimated 41 hours of operative time were saved over 14 months. This technique could be reproduced in other units and prove invaluable in reducing the post COVID backlog.

201 Simulated training session for foundation doctors reduced delays in Mitomycin-C administration

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Introduction Timely instillation of intravesical Mitomycin-C (MMC) post transurethral resection of bladder tumour (TURBT) reduces recurrence of non-muscle-invasive cancers. European guidelines recommend a single dose of MMC within 1 hour of resection with a maximum window of 4 hours generally considered acceptable. At the Royal Lancaster Infirmary (RLI), issues surrounding delayed and

missed MMC instillation were identified, with a lack-of-trained staff being the largest contributing factor.
Methods Following approval by clinical leads, a simulated training session was designed and delivered to 25 foundation doctors with the assistance of the regional MMC representative and local urology specialist nurses. Dummy MMC kits and mannequins were used to simulate safe MMC preparation and administration, which was observed to ensure competency. Pre- and post-session questionnaires assessed understanding of MMC instillation and key safety considerations. Following the session, urology clinicians and ward staff were asked to ensure timely communication to surgical doctors in the event of an expected delayed or missed MMC administration.
Results Across a 7-month period, 42 patients underwent TURBT at the RLI, of which 14 had post-operative instructions for MMC instillation. 5 patients (36%) had MMC administered by a foundation doctor due to lack of trained ward staff, with 80% of these performed within a 4-hour timeframe.
Conclusions This project demonstrated that a simulated training session is effective in reducing the rate of delayed MMC administration in the post-operative period by increasing available trained staff. Trust policy has since been amended to include MMC administration immediately postoperatively in theatre (regional standard).

203 Improving the contactability of the orthopaedic team in a firm based department: a 2-cycle closed loop quality improvement project

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Introduction Our general hospital's orthopaedic department is split into three separate consultant firms with separate juniors. Concerns were raised by the MDT that it was often difficult to contact the correct junior responsible for a patient's care, causing frustration and delays. Our aim was to assess current practice and systems for contacting the orthopaedic team, implement strategies to improve contactability, and re-assess following our interventions.
Methods We identified three measurable factors as surrogates for the contactability of the team: the percentage of orthopaedic ward rounds with a bleep number recorded; the number of inappropriate calls about inpatients made to the on-call SHO (who does not care for inpatients); and the proportion of teams' virtual 'bleeps' carried on the 'Alertive' app. Following this, we set up EPR 'autotext' signatures including bleep numbers, sent daily reminders to teams who did not pick up their virtual bleep, updated the incorrect hospital switchboard directory, and created contact number flow charts for the pharmacy and wards.
Results Initially, no ward rounds had a team bleep recorded, the on call SHO received 6.5 calls/day about inpatients not under their care, and virtual bleeps were infrequently held. Following our interventions, 47% of ward round entries contained a bleep, the on call SHO received 1.5 calls/day about inpatients, and all team bleeps were occupied the majority of the time.
Conclusions Our results demonstrate a clear improvement. Difficulties in contactability are often multi-factorial and require a conceited effort to identify the root causes and create strategies to address them.

206 The implementation of digital operative notes and impact on quality in line with Royal College of Surgeons of England guidance on good surgical practice

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Introduction The aim of this 3-cycle audit was to evaluate the standards of operative notes in the department and identify the impact of converting to digital format. The unifying aim is to improve the quality of operative notes and thus improve patient safety through better standardisation, communication, and clarity between healthcare professionals.
Methods A 3-cycle audit was conducted at the Royal Free Hospital, London. The domains audited were based on the Royal College of Surgeons of England (RCS England) guidelines of good surgical practice and include legibility, patient details, surgeons name, procedure name, procedure date, urgency, indication, incision, position of patient, findings, procedural steps, tissues removed or altered, closure method, complications, signage and the use of antibiotics or venous thromboembolism (VTE) prophylaxis.

There were 55, 59 and 30 notes audited in the first, second and third cycles, respectively. The intervention between cycle one and two was an educational session only. The intervention between cycle two and three was the implementation of a digital note system.
Results The mean completion rate of each domain improved from 66% in cycle 1 to 81% in cycle 3. Automation resulted in 100% completion rate in 10 out of the 20 domains.
Conclusions The implementation of automation driven by digitalisation resulted in better quality operative notes. Importantly some key domains have been made impossible to exclude due to the computer programs selective rigidity. Some areas of the digital operative note can still be improved, and this can likely happen through further templating or artificial intelligence implementation.

207 Surgical mentoring – what can we offer as surgical trainees to medical students

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Introduction To clarify the potentially confusing and arduous path to becoming a surgeon by exploring how to become a core surgical trainee.
Methods Consultants and surgical trainees from east and west midlands conducted an online survey to assess what would benefit the members and planned our year out as requested, with members voting for Core Surgical Training portfolio support, interview + OSCE practice and access to in person consultant and registrar led surgical skills teaching. Leading to the creation of a regional mentoring society open to medical students and junior doctors interested in applying to surgical training. The use of video meeting platforms and encrypted messaging services allowed both synchronous and asynchronous teaching giving members the flexibility to ask faculty questions at their convenience.
Results 100% of members report the content of sessions easy to follow and useful for their respective levels. We are continuously gathering qualitative data and with the consent of our members carry out quantitative data to see if their applications for training were in some way benefited by our sessions.
Conclusions Mentorship and representation are vital to promote interest in surgical careers. The burden of exploring careers should not be entirely left to the student and doctor. While there is guidance for existing surgical trainees there may be more to offer for students and doctors aspiring to become surgical trainees. The creation of our West Midlands Surgical Mentoring Society aimed at this cohort has met a warm reception and plans to continue its role to inspire future surgeons.

214 The introduction of a pre-incision checklist improves theatre productivity in the management of open lower limb fractures at a major trauma centre: a closed loop audit

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Introduction Significant delays from entering the operating theatre to procedure start were found due to time spent clarifying patient position on the operating table, setting up pre-scrub equipment, and locating the dedicated theatre camera. Utilising a simple checklist can reduce

time from anaesthetic commencement to incision, improve theatre productivity and reducing patient risk.
Methods Time from patient entering the operating room to incision was retrospectively collected for eight months. Then, a large font pre-incision checklist was introduced detailing patient position on the operating table, the pre-scrub equipment, the theatre camera, and locating a negative pressure dressing kit for the procedure end. This was agreed within the orthoplastics team and presented to trauma theatre managers, promoting improved theatre organisation. The poster was laminated and placed in a visible location in trauma and orthopaedic theatres. At three-month intervals, time to incision was re-analysed.
Results Prior to checklist introduction, average time to incision for open lower limb fractures was 31.21 minutes (n=80). After introduction, average time to incision was 23.23 minutes (n=17), a statistically significant reduction (p=0.013). After a following audit loop, a sustained improvement was seen, with average time to incision 22 minutes (n=14) (p=0.003).
Conclusions Introduction of a pre-incision checklist reduced time to incision following general anaesthetic in management of open lower limb fractures, improving theatre productivity. These injuries are associated with significant morbidity and mortality, with timely surgical management essential. Checklist effectiveness will be confirmed after a longer period, and its importance endorsed to new and rotating theatre team members.

216 Audit: neurovascular status documentation for paediatric supracondylar fractures

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Introduction Paediatric supracondylar fractures of the humerus can be challenging to manage appropriately and can be associated with significant complications. BOAST guidelines for supracondylar fractures of the humerus in children clearly state that initial neurovascular documentation "should include the status of the radial pulse, digital capillary refill time and the individual function of the radial, median (including anterior interosseous) and ulnar nerves". This audit aimed to assess Royal Stoke University Hospital orthopaedic department compliance of admission neurovascular documentation for paediatric supracondylar fractures of the humerus.
Methods The admission list was used to identify and compile the relevant fractures. Initial clerking and examination entries were then reviewed for compliance, followed by data compilation and compliance calculation.

Audit period 1 (first cycle): 1 April 2022–30 April 2022.

Intervention: Department wide communication (email) and presentation of audit first cycle results at M&M meeting, highlighting the issue.

Audit Period 2 (second cycle): 1 June 2022–30 June 2022.
Results Audit period 1 (first cycle): 4 paediatric supracondylar fractures of the humerus were identified, with only 25% compliance with regards to full neurovascular documentation standards.

Audit period 2 (second cycle): 8 paediatric supracondylar fractures of the humerus were identified, with 75% compliance with regards to full neurovascular documentation standards.
Conclusions Our intervention had a positive impact on improving neurovascular status documentation for supracondylar fractures of the humerus in children. However, we are still not at 100% compliance, and more work needs to be done.

217 Audit: neurovascular status documentation for paediatric forearm fractures

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Introduction The most common site of paediatric fractures is the forearm and these need to be managed appropriately to prevent complications. BOAST guidelines for the early management of the paediatric forearm fracture clearly state that initial neurovascular documentation "should include the status of the radial pulse, digital capillary refill time and the individual function of the radial, median and ulnar nerves". This audit aimed to assess Royal Stoke University Hospital orthopaedic department compliance of admission neurovascular documentation for paediatric forearm fractures.
Methods The admission list was used to identify and compile the relevant fractures. Initial clerking and examination entries were then reviewed for compliance, followed by data compilation and compliance calculation.

Audit period 1 (first cycle): 1 April 2022–30 April 2022.

Intervention: Department wide communication (email) and presentation of audit first cycle results at M&M meeting, highlighting issue and to serve as a reminder.

Audit Period 2 (second cycle): 1 June 2022–30 June 2022.
Results Audit period 1 (first cycle): 20 forearm fractures in children, with only 15% compliance with regards to full neurovascular documentation standards.

Audit period 2 (second cycle): 12 forearm fractures in children, with 75% compliance with regards to full neurovascular documentation standards.
Conclusions Our intervention had a positive impact on improving neurovascular status documentation for paediatric forearm fractures. However, we are still not at 100% compliance, and more work needs to be done.

218 Audit of variability in booking elective skin procedures

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Introduction There is a huge variability in estimating duration of procedure when booking elective skin cases, leading to lists being overbooked or underbooked. Currently, there is no set guidelines to book patients into respective skin procedures. Authors aim to evaluate the booking forms of skin procedures and compare them with the actual skin procedures, in terms of timing.
Methods This is a retrospective analysis of all elective skin cases under local anaesthetics at a single tertiary plastic surgery centre, from March 2023. Cases involving patients post-Mohs micrographic surgery were excluded. Primary outcomes include estimated procedure time on the booking form, actual total procedure time, total operative and non-operative time. Secondary outcomes include type of procedure, number of lesion(s) removed, level of operating surgeon and presence of assistant(s).
Results The overall accuracy of estimated procedure time compared to the actual total procedure time is 14.7%. The average duration for excision and direct closure and for diagnostic biopsy is 40 minutes; for excision and local flap and for excision and split skin graft (SSG) is 55 minutes; and for excision and full thickness skin graft (FTSG) is 70 minutes. There is an average 30-minute non-operative time for each procedure.
Conclusions In this study, most cases are overbooked – the estimated time is longer than the actual procedure time. Individual complexity, presence of assistants, number of lesions and external factors should be considered when booking patients into elective cases. There is a need for a standardised pathway to guide surgeons in booking elective skin procedures.

219 Documentation and adherence to appropriate margins for BCC and SCC in head and neck sites

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Introduction The ears and nose are high-risk sites for cutaneous malignancy where excisional margin control, in accordance with national guidelines, is critically important to avoid incomplete excision. We set out to assess the quality of operative documentation, adherence to recommended excisional margins for SCC and BCC from guidelines and appraise the rates of incomplete excision within a tertiary plastic surgery service.
Methods A retrospective review of all patients who underwent wide local excision of suspected BCCs and SCCs between April 2022–March

2023 was performed. Intended margins (deep and peripheral), marker stitch placement, excisional status (complete, narrow or incomplete) were extracted from the medical records and compared against national guidelines.
Results The rates of incomplete excision were 14% (n=10) and 9% (n=2) for BCCs and SCCs, respectively. The recommended peripheral margins were not adhered to in 68.6% (n=48) and 57.9% (n=14) of BCC and SCC cases, respectively. There was no documentation of the deep margin in 17.1% (n=12) of BCC and 27.3% (n=6) of SCC cases, respectively.
Conclusions There was an association between poor documentation and rates of incomplete excision in our study highlighting the fundamental importance of being conscious of and adhering to the recommended guidelines for excision of cutaneous malignancy, to guide safe plastic surgery practice. We intend to pursue a targeted educational intervention locally to address the deficiencies identified.

221 Audit on antibiotic prophylaxis and post-procedure complication rate for patients undergoing transperineal template biopsies of the prostate

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Introduction Prostate cancer is currently the most frequent cancer in males in Europe and the US. The strong increase in overall Ca P detection rate mainly relies on testing PSA, mpMRI and consequent biopsies. This diagnostic strategy could cause morbidity to the patients.
Aim To measure compliance with trust guidelines for antibiotic prophylaxis among patients undergoing transperineal template biopsies of prostate, and to evaluate post-procedure complication rate.
Methods Retrospective data collection over a period of 8 months. Data were collected on patient demographics, compliance with trust guidelines, associated risk factors (medical co-morbidities/ immunosuppression), and post-procedure complications (infection, haematuria, urinary retention).
Results A total of 100 patients were included in the audit, median age of patients was 66.11. 98/100 patients received pre-procedure antibiotics (compliance 98%), 68/100 patients received antibiotic prophylaxis recommended by trust guidelines (compliance 68%). 3/100 patients developed post-procedure sepsis (rate 3%), and only one patient among these three received an antibiotic different from trust recommendation and 2 of them required admission for IV antibiotics. No obvious risk factor was identified in those patients. Rate of post-procedure urinary retention was 3%, and rate of post-procedure haematuria was 2%.
Conclusions Transperineal template biopsies are being offered more and more across all UK centres. National rate of re-admission due to sepsis associated with the procedure is around 1.03% (national prostate cancer audit). Having a standardised protocol and compliance with the guideline helps reduce confusion, ensures patients receive antibiotics before their procedure, and can help reduce post-procedure complications.

222 A closed loop audit of otitis externa management in primary care: are we over-prescribing oral antibiotics?

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Introduction The NICE Clinical Knowledge Summary (CKS) strongly recommends against the use of systemic antibiotics for uncomplicated acute otitis externa (OE), unless there is extension outside the ear canal. From our initial audit cycle, over prescription of oral antibiotics for OE continues to be an issue. In this study, we aim to compare the assessment and initial management of OE referred to our emergency clinic, against an acceptable standard.
Methods Retrospective analysis of a single cohort; adults (16 years and above) with OE with or without pinna cellulitis, necrotising externa or concurrent otitis media, who were referred to our emergency clinic, were included. Three cycles of analysis were done, with interventions introduced in between cycles. Interventions include distributing electronic and physical infographic summary of NICE CKS guideline in OE management and delivering a targeted teaching to GP trainees during the GP Regional Teaching Day.
Results The percentage of patients who had ear swabs taken for culture and sensitivity by the GP improved from 21% (first cycle) and 14% (second cycle) to 30% in the third cycle. The percentage of patients who receive inappropriate oral antibiotic improved from 33% (first cycle) and 52% (second cycle) to 22% in the third cycle.
Conclusions Interventions implemented led to positive outcomes; better practice of taking ear swabs by the GP during initial treatment failure, and reduction in rate of inappropriate oral antibiotics given for OE. A continuous guided training and teaching are essential to ensure a high-quality practice in assessing and managing OE in the primary care.

225 Delivery of service in urology two weeks' wait clinic for haematuria

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Introduction Timely diagnosis of cancer patient is key to provide early treatment. Haematuria is a common presentation of many urological cancers including kidney cancer, bladder cancer etc. An Audit was done to see whether we are doing same day flexible cystoscopy and ultrasound of renal tract in one stop clinic of haematuria. Were the two weeks wait CT urograms happening in time?
Methods All patients coming in a haematuria clinic in February 2022 were prospectively studied to see if they had ultrasound renal tract and flexible cystoscopy same day. If anyone had not, an attempt was made to find out what the reasons were for that. A total of 53 patient were included in this audit.
Results There were 41 visible haematuria patient and 12 nonvisible haematuria patients. It was found that 94.0% of eligible patients had ultrasound scan of renal tract same day or even before clinic while 97.8% of eligible patient had flexible cystoscopy same day. In some patients there were some clinical and non-clinical factors for which they were removed from the audit. Reasons for late USS or flexible cystoscopy were early booking by general practitioners, delayed booking by radiology team, patient had infection, patient's personal factors etc. Only 48.38% of eligible patient had CT urogram in two weeks' wait.
Conclusions Audit outcome was discussed in house and recommendations were made for all to ensure the request for CT urogram appropriately in two weeks' wait pathway and write it down clearly in the request.

226 Diagnosis challenge of necrotising fasciitis: Can we diagnose early? – A quality improvement project at Kettering General Hospital

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Introduction Necrotising fasciitis is a rare bacterial infection that spreads quickly in the body and can cause mortality. Accurate diagnosis, rapid antibiotic treatment and prompt surgery are important to stopping this infection.
Aim Creating a pathway, helping in diagnosis and management to improve the quality of care provided to our patients, and avoiding missing or delaying diagnosis by adherence to the pathway.
Methods Different papers reviewed methods of diagnosis of necrotising fasciitis, and four papers reviewed clinical, laboratory and radiological methods to diagnose, which are all combined in the pathway. Referrals sent to surgical specialities were reviewed retrospectively and compared to guidelines for diagnosis in these papers, over three months from January to April 2023 regarding patient demographics, diagnosis, fate, operated cases, the onset of symptoms, time to referral, LIRNEC score and imaging.

Results Developing a comprehensive and unique pathway in a traffic light mode extracted from the results of the papers reviewed. In early signs, the patient is to be admitted and receive antibiotics treatments as per guidelines and keep close monitoring. In intermediate symptoms, imaging modalities such as CT or MRI and LRINEC score will be used where the diagnosis is not clear. In late symptoms, the patient is to be referred immediately to surgical teams. 4.3% of all data collected are confirmed cases.
Conclusions Developing a comprehensive pathway helps and facilitates the prompt diagnosis and treatment of patients and eventually saves a life or a limb. Informing colleagues about the new pathway of necrotising fasciitis through a teaching lecture.

228 An audit on urea and electrolytes checks in patients presenting with acute urinary retention with high residual

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Introduction Acute urinary retention is often associated with impaired renal function and deranged electrolytes. The frequency is generally higher in patients presenting with higher residuals on catheterisation.
Aims An audit was conducted to see urea and electrolytes have been checked in all patients presented with acute array retention with residual more than one litre on catheterisation.
Methods First cycle of audit was done retrospectively reviewing 62 patients who came in A&E with retention and subsequently was catheterised and was found to have more than 1 litre residual. From the result of first cycle some recommendations were made, and it was reviewed with another audit prospectively.
Results In the first cycle of the audit, it was found that only 58% of patients coming in with urinary retention with high residuals were checked with urea and electrolytes. Some recommendations were made including discussing in house in audit meeting, displaying a poster star in A&E doctor's office and surgical assessment unit doctor's office, daily review of cases in morning handover by registrar. On second audit it was found to that the recording of urea and electrolytes increased to 84%.
Conclusions Second cycle result was discussed in house and hospital monthly meeting and some further recommendations were made to increase it to 100%. Those included to maintain catheter record in all patients, junior doctors joining in A&E, urology and surgery were required to have a catheter training certificate.

230 An audit on timely exploration of probable testicular torsion patients

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Introduction Acute pain in hemi-scrotum is very often caused by testicular torsion. The incidence is higher in younger people. There is no definite investigation that can confidently rule out testicular torsion.
Aims This audit was done to find out unnecessary delay in exploration in possible testicular torsion patients.
Methods Any patients coming into A&E with unilateral testicular acute pain were included in the audit to see how prompt a decision was taken. It was checked whether suspected testicular torsion patients were taken to theatre for exploration within six hours of presentation.
Results On first cycle audit it was found that 41% of patients presenting with acute testicular torsion were in the operating theatre for exploration after more than six hours of presentation. Some reasons were found including delay in review by registrar, patient was sent for ultrasound scan to make a decision, operating theatres were busy. Some recommendations were made including: a clear protocol was placed in the surgery department assessment unit and also in A&E, it was discussed in surgery and urology teaching and all registrars were briefed, operating theatre coordination team and anaesthetists were updated to prioritise testicular torsion patients. On second audit it was found that 87% possible testicular torsion patient were taken to theatre within six hours of presentation.
Conclusions Testicular torsion is a clinical diagnosis and clinician should rely on the history and physical examination to make a prompt decision and action on this.

233 Postoperative pneumonia following emergency laparotomy

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Introduction Emergency laparotomy is associated with high mortality. Postoperative pneumonia (POP) is a common postoperative complication leading to morbidity, mortality and increased cost of care. Our study aims to identify the incidence of POP and its association with mortality following emergency laparotomy in our centre.
Methods Data were collected and analysed retrospectively from patients who underwent emergency laparotomy between 2018–2022. Patient demographics and cause of death were obtained through local medical records. Incidences of mortality from POP were audited against current trust practices on postoperative feeding and utilisation of prevention of postoperative pneumonia protocol (POPP). Microsoft Excel was used for statistical analysis.
Results A total of 65 patient mortalities (n=65) were identified and included in this study. Patients' cause of death was identified as POP (28%), multiorgan failure (25%), peritonitis (12%) and others (35%). The average duration of initial postoperative feeding for patients who developed POP was 2.88 days via nasogastric/nasojejunal routes and 4 days via oral route. Of those who developed POP, only 53% were placed on the POPP protocol.
Conclusions POP represents a significant risk factor to mortality in patients who underwent emergency laparotomy. Studies have shown that POP is preventable, and implementation of a care bundle reduces the risk of morbidity and mortality in postoperative patients. We aim to re-audit following education and reinforcing the implementation of POPP protocol to reassess patient outcomes.

242 Cancellation of elective vascular surgery on a scheduled day in a tertiary hospital

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Introduction Surgical case cancellation has significant impacts on operating theatre efficiency and the UK loses a substantial amount of money on these cases. Cancellation of elective operations is a parameter to assess quality of patient care and quality of management system. There are many reasons of cancellation of elective surgical cases; and they differ from hospital to hospital.
Aims Our purpose was to look for various reasons cancellation of elective vascular surgical cases and to evaluate the services.
Methods Retrospective data were collected over a year from 8 January 2022 to 3 January 2023 for all the patients who were cancelled from the elective vascular surgery list. Data were collected from the hospital's database.
Results Total 29 patients were found to be cancelled on the record, however, seven of them were found to have duplicate entry in the theatre list. So, one entry was cancelled. Thus, 22 patients were really cancelled on the day of surgery. The majority patients (32%) were cancelled as they were deemed unfit on the day of surgery. 23% patients were cancelled due to the change in the plan on the day of surgery. There various other reasons of cancellations including theatre staff sickness, patient deferral, replacing with other emergencies etc.
Conclusions This audit highlights that most of the cancellations could be prevented by prior planning. We propose planning meeting to foresee problems and to reduce the decision making of cancellation on the day. We also suggest to protocolise the major vascular surgery and to ensure prior anaesthetic input.

247 Preoperative group and save for cholecystectomies: a necessity or a waste of resources?

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Introduction According to NICE data, 15% of the UK adult population is thought to have gallstone disease, of which 20% are symptomatic requiring surgical intervention. An estimated 66,660 cholecystectomies are performed each year, over 90% being done laparoscopically. Though preoperative testing of group and save (G&S) is not a recommendation by the NICE guidelines, hospitals nationwide commonly obtain two G&S samples preoperatively.
Methods Retrospective review of patients from one centre and data was obtained from coding records of the IT department. Laparoscopic and open cholecystectomy cases from January 2018 to December 2022 were included.
Results From 2018 to 2022, there were a total of 2,682 patients who underwent cholecystectomies. Laparoscopic cholecystectomies (92%) made up the majority of cases. All patients who underwent cholecystectomies had at least one preoperative G&S. Only one patient (0.03%) who underwent open cholecystectomy required blood transfusion. None of the patients who had laparoscopic cholecystectomy needed blood transfusion.
Conclusions The laboratory cost to analyse a G&S sample averages around £17.24/patient. The Green Surgery Challenge at University Hospital Sussex found that analysing a second G&S sample produced 2.5 tonnes of carbon dioxide in their trust, and an estimated 600 tonnes nationwide. From our data, none of the laparoscopic cholecystectomy patients required blood transfusion, suggesting that the risk of significant bleeding may have been overestimated. This near-zero transfusion rate could possibly imply that it is safe to eliminate G&S samples prior to cholecystectomies, especially laparoscopic ones. This could potentially save time and resources to a significant amount.

249 An audit on the length of stay of hip and knee arthroplasty in an elective orthopaedic unit

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Introduction To assess the length of stay and readmission rates in our elective orthopaedic unit using a model health system, looking for areas of development across the service. We then aimed to implement change and further reassess for improvement against NICE standards.
Methods Using the GRIFT clinical metrics area, we submitted data for all total hip replacements (THR), total knee replacements (TKR) and noncompartmental knee replacements (UKR) in a 6-month period. This revealed that our average length of stay was below the national standard and identified issues in mobility assessments, physiotherapy, pain management and medical factors. Changes to counselling, early mobilisation, analgesia reviews and cryotherapy were made to address this issue. This data was again, prospectively collected to complete the audit cycle.
Results Initially, the average length of stay for THR was 1.46 days, TKR was 1.66 days and UKR was 1.1 days. After presentation and implementation of improvements in physiotherapy alongside trialling day-case THRs, we recollected data over the next 6-month period. There were satisfactory improvements: THR was 1.5 days (n=120), TKR was 1.66 days (n=99) and UKR was 1.1 days (n=9).
Conclusions Many factors influence the length of stay following joint replacement surgery. A model health system is a safe and systematic way to identify the effectiveness of a service and breakdown the factors that affect this. In that way, a complex multifactorial problem was simplified to introduce simple and innovative measures to improve costs and patient outcomes.

251 Emergency laparoscopic cholecystectomy: audit of a local experience

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Introduction To assess our emergency laparoscopic cholecystectomy service and compare with standards to identify areas of concerns and implement change.
Methods Retrospective clinical and operative data collection of emergencies laparoscopic cholecystectomies at a district general hospital over a 6-month period from November 2022 to April 2023. Performance was compared against NICE and British Benign Upper Gastrointestinal Surgical Society (BBUGSS) standards.
Results 31 cases were completed over 6 months. The mean age was 44.8 years (SD=17.8), 75% were female. Average BMI was 31.31, almost all were ASA 1 or 2. Acute cholecystitis was the most common indication (53%). 68% of patients had surgery within 7 days of symptoms onset. 14 patients had either Nassar grade 3 and 4 gallbladder (7 each). Subtotal cholecystectomy rate was 9.6% and only one case was converted to open surgery. Patients in this cohort all had grade 4 difficulty. No common bile duct injury or postoperative bile leak. One patient was returned to theatre due to intraabdominal bleed. There were no readmissions due to biliary complications within 30 days.
Conclusions Key indicators were in keeping with BBUGSS recommendations and a majority had surgery within 7 days. We recognise low complication rates despite the complexities of the patients. We aim to explore how more patients can be recruited into a hot gallbladder pathway and decrease their morbidity associated with recurrent unrelenting symptomatic gallbladder disease.

252 Accuracy of clinical coding in elective skin cancer procedures – a quality improvement project

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Introduction Clinical coding is the translation of terms used in clinical notes, describing interventions, into a coded format that is nationally recognised. It provides data that can be used for quality improvement and financial flows. Incorrect coding can lead to financial deficits for hospitals, and despite its significance, clinical coding is often imprecise. The aim of comparing coding accuracy with overall payment for the hospital was established.
Methods A first cycle was completed focusing on elective skin cancer procedures in a specific cohort of patients. Clinical documentation was analysed, and the codes used for interventions were compared against the final tariff. Inaccuracies were identified, and an action plan was implemented, including education on documentation in clinical notes, and displaying a list of commonly used codes in theatres. A re-audit was completed following these changes using the same patient inclusion criteria and methodology.
Results Following the first cycle, 95% of procedures were coded correctly, although inaccuracies in the documentation of 'wide local excision' vs 'wider local excision' were identified. Additionally, limited use of graft descriptors was noted. Both discrepancies negatively impacted on the overall tariff. Following the implementation of change, a 2% improvement in documentation of procedures and improved descriptions of grafts was noted, benefiting overall payment for clinical activity.
Conclusions Inaccurate coding can lead to incorrect payments for trusts. Educating clinicians and implementing simple actions, such as a list of graft descriptors in theatres, can improve accuracy in clinical coding, thus limiting financial deficits, and enhance the maintenance and development of clinical services.

257 A clinical audit of antibiotic prescription review in the orthopaedic department at King's College Hospital

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Introduction To identify the percentage of antibiotic prescriptions in the orthopaedic department at King's College Hospital which either had a stop date included in their prescription, or a documented prescription review within 48 hours, as per trust guidelines.

Methods Inclusion criteria for the first cycle was all orthopaedic inpatients at King's College Hospital discharged from 19 December 2022–16 January 2023 (cycle 1–112 patients) and 13 February 2023–13 March 2023 (cycle 2–121 patients). For each antibiotic prescription, it was recorded if a stop date was included, or if a review was documented within 48 hours. If no stop date was included, and no review was done within 48hrs, the number of days before documented review was recorded. At the end of the first cycle, a poster was distributed to the department raising awareness of trust guidelines and suggesting ways to improve.
Results In cycle 1, 77% of antibiotic prescriptions had a stop date included or had a documented review within the first 48 hours of being prescribed, compared to 90% of antibiotic prescriptions in cycle 2. Beyond 48 hours, the number of days before documented review ranged from 3–10 days in cycle 1 and 3–7 days in cycle 2.
Conclusions Data shows improved outcomes between the first and second cycle of data collection, however 10% of antibiotic prescriptions are still not meeting trust guidelines for review. Implications include continuation of an inappropriate course length or type of antibiotic. Reasons for delayed review could be lack of guideline awareness, human error or deferring to other joint parent teams for review.

276 Improving the efficiency of ENT emergency clinic in a climate of staffing shortages and junior strikes

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Introduction Charing Cross ENT emergency clinic (EC) is manned by SHO's who manage common non-acute ENT conditions. However, with increasing staffing shortages and junior doctor strikes, EC wait times have increased. Decreased appointment availability results in urgent reviews being added to the on-call SHO workload. Furthermore, unnecessary repeat reviews are often booked by juniors, with senior reviews needing to be proactively sought. As such, we saw opportunity to improve the efficiency and utility of ENT EC.
Methods Due to no national guidelines on ENT ECs, we conducted a QIP seeking consultant input to design local guidelines. Two weeks of retrospective data was collected on EC outcomes and wait-times, and compared against consultant recommendations.
Results Consultants recommended we see patients within 5 days – we see them within 14. Consultants recommended 2 reviews before specialist clinic referral – we average 3 reviews. 20% of patients are rebooked into EC, yet only 10% have a senior review. Consultants recommended between 2–3 reviews for the on-call SHO – the current average is 4. 33% of booked appointments are not attended (DNAs).
Conclusions Findings will be presented departmentally to raise awareness on safely discharging patients from clinic, thus reducing rebooking. An EC pro-forma will be designed to prompt SHO's to seek senior review if the patient is re-attending. We recommend increasing extending EC capacity by adding locum-led clinics to compensate for DNAs and demand and protecting slots which can only be booked 48 hours in advance to reduce on-call burden. We will re-audit once the recommendations have been implemented.

Robotics and digital surgery

67 Beyond the scalpel: augmented reality reshaping post-graduate surgical skill training

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Introduction The post-graduate surgical education landscape has undergone substantial transformation due to the COVID-19 pandemic. An escalated emphasis on patient safety resulted in an increased dependence on simulated technology for skill practice and assessment. This study aims to evaluate the effects of augmented reality-based surgical simulation on junior surgical trainees' skill acquisition and overall experience.
Methods This study involved 15 trainees and 2 consultants across three training sites. Trainees used (LapAR™) at home to perform ten appendicectomies, interspersed with relevant LapPass tasks. Objective measurements of completion time and distance were collected, followed by interviews.
Results Improvements in completion time and distance during repeated laparoscopic appendicectomies, along with enhanced smoothness, acceleration, and ambidexterity were observed among surgical trainees. It is of interest that consultant benchmarking saw improvements largely in distance travelled, and somewhat in acceleration. Qualitative analysis emphasised augmented reality's relevance in early surgical training, advocating mandatory integration. Participants sought extended technology access, valuing it for list prep, skill acquisition, and knowledge enhancement. Home training provided flexibility contrast from high-pressure theatres, which despite technical challenges, offered realistic educational benefits.
Conclusions Inovus Medical's novel augmented reality-based surgical simulator presents a scalable approach to improving surgical skills and addressing common trainee challenges. Its effectiveness is validated through improved skills aligning with objective scores, positive evaluations of educational content, and agreement on simulation realism. This technology offers a promising path to bridge the gap between surgical training and practice.

88 Robotic assisted kidney transplant vs conventional open kidney transplant for end stage renal disease. Comparison of perioperative graft and patient outcome: a systematic review

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Introduction Conventional open kidney transplant (OKT) is currently the gold standard for end stage renal disease. However, recent developments in minimally invasive robotic surgery (MIS) have led to the propagation of robot-assisted kidney transplant (RAKT), which boasts many benefits including reduced incision length, better short-term cosmetic results and higher patient satisfaction.
Methods A systematic review was conducted in accordance with PRISMA 2020 guidelines across PubMed, Embase, Cochrane and OVID databases, between 1996 and 31 December 2021. The primary outcomes reviewed included, graft viability, total mortality, surgical site infection, incisional hernia, warm and cold ischaemia times and final cosmetic result. Upon review, a total of 19 out of 1954 identified publications progressed to complete analysis. After application of statistical methods, regression statistics were presented.
Results A total of 804 patients and 263 Patients were included in the OKT and the RAKT groups, respectively. While total ischemia time was 86.9 ± 7 minutes in the RAKT group, it was calculated as 71.2 ± 3.3 minutes in the OKT group, with a significant difference. The anastomosis time was significantly shorter in the ORT group than in the RAKT group. The incision length and duration of hospital stay were significantly shorter, visual analogue scores were lower, and estimated blood loss was less in the RAKT group across the citations included.
Conclusions This study concluded that the RAKT technique offers comparable surgical outcomes compared to the OKT technique. However, the RAKT procedure offers patients a multitude of benefits associated with MIS.

262 Robotic-assisted knee arthroplasty: a comprehensive review of efficacy, costs, and future perspectives

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Introduction Robotic-assisted knee arthroplasty has emerged as a promising development, aiming to enhance surgical precision and patient outcomes. This review systematically examines the clinical efficacy, cost implications, environmental impact, and potential of telesurgery in robotic-assisted total knee arthroplasty (RATKA) and robotic-assisted unicompartmental knee arthroplasty (RAUKA) relative to conventional techniques.
Methods A thorough literature search was conducted utilising keywords such as "robot", "conventional", "total knee" and "unicompartmental knee" across PubMed. Clinical and radiological outcomes of RATKA and RAUKA were extracted and analysed. Direct costs, operating time, surgeon learning curve, environmental implications, and the futuristic concept of telesurgery were also considered.
Results Subjective patient assessments such as WOMAC, Oxford Knee Score, and SF-36, alongside objective measures like HSS score and KSS, were commonly used. Radiological parameters like hip-knee-ankle (HKA) and femorotibial angle provided insights into postoperative alignment. Evidence indicated sporadic high-level design studies, often with limited samples. Cost remains a major constraint with robotic systems, though high-volume cases might offset expenses. Environmental assessments revealed robotic surgeries generate a higher carbon footprint. Telesurgery, an evolving field, could transcend geographical boundaries but is not without challenges, including high costs, latency issues, and cyber threats.
Conclusions While robotic-assisted surgeries hold promise, substantial barriers, including acquisition costs, potential surgeon deskilling, and environmental concerns, need addressing. Greater robot utilisation may drive costs down with more competitors entering the market. Continued research, especially multi-center RCTs, is pivotal to solidifying the role of robotic systems in knee arthroplasty.

272 Development of a 3-dimensional printing pathway for preoperative planning in complex craniofacial reconstruction

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Introduction 3D printing for planning complex craniofacial reconstruction surgeries can shorten operating times and lead to better surgical outcomes. To-date, there have been no studies producing a comprehensive workflow for the 3D printing of full-scale skull and soft tissue models and assessing their utility in surgical planning and patient communication.
Methods 3D Slicer, Meshlab and Blender was used to create seven skull and four soft tissue models of a patient who suffered a self-inflicted gunshot wound using four printers (two FDM, one DLP, one Polyjet). We performed quantitative analysis of the models and distributed a questionnaire to surgeons and patients to evaluate the usefulness of the models in surgical planning and patient communication.
Results Cost and print times were analysed, ranging from £15–£515 and 36–50 hours, respectively. Surgeons assessed the skull model printed with Stratasys J826 3D to be most like real bone (mean Likert score 4.17) and that the models were highly useful in surgical planning (mean Likert score 5) and in patient communication (mean Likert score 4.8). Patients found the models highly useful to understand the anatomy of their face, proposed surgery and the complications that may arise from the surgery (mean Likert-scale response was 5).
Conclusions We herein present a comprehensive 3D printing workflow and a detailed assessment of the quantitative and qualitative features of full-face skull and soft tissue models. We propose for future studies to refine and optimise our workflow, producing a cost-effective, accurate and clinically useful 3D printing process that can be implemented on a national level.

Systematic review and meta-analyses

13 An overview of laparoscopic surgical training modalities – how does augmented reality simulation compare?

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Introduction Laparoscopic surgery is known to require intensive training to gain the required skills and with the increasing popularity of laparoscopic surgery over open surgery requires novel and efficient ways of training.

The traditional ways of training as an apprenticeship model usually require a prolonged learning curve. Augmented reality emerged as a solution for the rapidly requiring laparoscopic surgery training.
Methods Compare different types of laparoscopic training modalities and assess how AR compares to the education system using the apprenticeship model on patients and alternative training modalities, including human cadavers, box trainers, and virtual reality (VR) simulators.

31 papers were systematically reviewed, and the findings were compiled. Results Both the available products as well as the technology as an educational modality were evaluated.
Results Studies reported relatively increased speed of learning, improved ability to multitask, procedural accuracy, hand-eye coordination and bimanual operation in a reduced practice time and increased success rate with AR in healthcare education. One of the limitations of AR, it does not reflect the non-technical skills required in the operation.

Compared with other modalities AR provided faster skill acquisition and was widely preferred, except when compared against a human cadaver model for straight laparoscopic colorectal skills acquisition. Currently, not enough information is available to draw a decisive conclusion.
Conclusions AR simulation has the potential to become the new gold standard for laparoscopic surgical training, and beyond, pending further development of literature to increase knowledge of the technology and its capabilities, on top of technological evolution to increase clinical realism.

22 The efficacy of antiseptic treatment of surgical drains on bacterial colonisation and surgical site infection post breast surgery: a systematic review and meta-analysis

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Introduction Surgical site infection (SSI) is a common complication in women with postoperative drains following breast surgery, with the risk being as high as 19%. The authors aimed to conduct the first meta-analysis to determine the efficacy of antiseptic treatment of drains to reduce the incidence of infections by comparing it to drains with no antiseptic coating.
Methods The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were followed with an extensive search of the electronic databases retrieving 114 articles. Four articles met the inclusion criteria. The primary outcome measure was the incidence of SSIs and secondary outcome measures included the incidence of bacterial colonisation in the bulb fluid and drain tube.
Results The incidence of SSIs was significantly lower in the antiseptic group compared to the control (CI 95% 0.09–0.82, p=0.02). In addition, there was a lower incidence of colonisation from both the bulb fluid and drain tube with P values of <0.00001 and p<0.0001, respectively.

Conclusions The authors report the first meta-analysis within the literature showing the efficacy of antiseptic treatment of surgical drains on colonisation and SSIs following breast surgery. More high-quality trials are recommended to further the current evidence base.

30 Breast invasive carcinoma in children and teenagers: a narrative literature review

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Introduction Breast malignancy is the most common malignancy in women worldwide. It accounts for 28% of all new cancer cases yearly. Although it can affect all ages, breast malignancy is extremely rare in children and teenagers affecting about 1 in 1,000,000 females younger than 20 years old. Despite its rarity, breast malignancy in children and teenagers still exists with various case reports published in literature.
Methods This study is a narrative literature review of primary breast carcinoma affecting children and teenagers. It encompasses 32 case reports, 12 males and 20 females, covering the period between 1999 and 2023. Their age ranges from 4 to 17 years old.
Results Secretory breast carcinoma (SBC) was encountered in 24 cases, 6 cases were ductal carcinoma,1 case was tubular carcinoma, and 1 case was papillary intracystic carcinoma.15 tumours were oestrogen receptor (ER) and progesterone (PR) receptor negative (-ve), 6 tumours were ER and PR positive (+ve), 6 tumours were only ER +ve, and 6 tumours had neither ER nor PR tested. Regarding the human epidermal growth factor receptor 2 testing (Her2), 17 malignancies were -ve and 15 malignancies were not tested. 14 cases had genetic screening; out of these, 2 had ETV6-NTRK3 fusion gene with negative BRCA gene, 5 had ETV6-NTRK3 fusion gene with no BRCA testing, 1 had CAV-1 mutation, 4 were negative for BRCA gene, and 2 had no mutation at all.
Conclusions Breast malignancy in children and teenagers is rare. Most of the cases affect females with the majority being SBC with negative hormone receptors.

44 Investigating the efficacy of Cyberknife to improve survival in advanced pancreatic cancer

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Introduction Accounting for over 49,830 (7%) cancer-related deaths in the US, pancreatic cancer carries a dismal prognosis of median survival of 6 months. As research on prolonging longevity continues, the advent of stereotactic-surgical techniques such as Cyberknife has garnered attention in the scientific community for treatment of metastatic pancreatic carcinoma. This SR investigates the efficacy of the procedure.
Methods Databases such as PubMed/Medline, SCOPUS and Web of Science (WOS) were reviewed for randomised-controlled trials, observational studies, systematic reviews, and meta-analysis between 2010–2023 utilising MESH terminology. The full-text screening was performed in accordance with the following eligibility criteria: STROBE for observational studies; PRISMA for review articles, ENTREQ for narrative studies; and modified JADAD for randomised controlled trials.
Results Cyberknife application shows potential improvement in overall survival and is associated with minimal complication for patients with advanced pancreatic cancer. 12 studies were found to assess the impact of using Cyberknife for the treatment of pancreatic cancer, of which 8 studies reported overall survival rate and complications. The mean overall survival rate at one year was 47.15%. The median overall survival time was 11.38 months. The mean progression-free survival time and mean local progression-free survival time were 10.5 months and 11.15 months, respectively. Duodenal ulcer was the commonest complication reported. No other significant complications were reported.
Conclusions Several studies report possible improvements in survival and conversion to resectable stage pancreatic cancer for patients undergoing Cyberknife procedures. Most studies reported minimal acute toxicity and complications included nausea, fatigue, and duodenal ulcers. These results prompt further large-scale multi-center research to investigate the effectiveness in accordance with gender, race and stage of diagnosis.

45 Outcomes for prostate cancer patients undergoing penile prosthesis insertion following pelvic surgery and radiotherapy

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Introduction Prostate cancer (PCa) is the most commonly diagnosed cancer amongst men in the UK. One of the major complications of PCa treatment is erectile dysfunction (ED). Treatment for ED follows a stepwise approach and includes the use of vacuum pumps and oral phosphodiesterase type 5 (PDE5) inhibitors, followed by the intracavernosal or intraurethral administration of prostaglandin. If pharmacotherapy fails, the insertion of a penile prosthesis (PP) is indicated. There is limited pooled data available on surgical and patient reported outcomes available to this end.
Aim To investigate the efficacy of PP insertion for PCa through a systematic review.
Methods Databases MEDLINE/Pubmed, CINAHL, EMBASE and Cochrane were searched for RCTs and retrospective/prospective observational studies. Review was registered on PROSPERO (CRD42021266140). /Full-text screening was performed on Rayyan. A descriptive analysis was performed.
Results A total of 11 studies were included. The overall rates of complications were low, yet diverse. Complications included infection (0–3.3%), revisions (0–11.1%), implant erosion/perforation (0–5%), and mechanical failures (0–7%). Studies with control groups showed higher complication rates in infection (2.1–9%), mechanical failure (3.3–13.5%), and implant erosion/perforation (0–3.7%). After radiotherapy, limited complications post-PP insertion suggested improved quality of life post-cancer treatment. Patient-reported outcomes indicated moderate satisfaction with PP insertion via EDITS questionnaires. IIEF scores in the PP group ranged from 17.5 to 63.1, reflecting variable satisfaction in erectile function. Limited satisfaction questionnaire data (5/11 studies) restricted comprehensive patient outcome assessment.
Conclusions PP insertion proves to be a safe, effective method to treat ED following PCa treatment.

46 Cranial meningioma resection by endoscopic surgery: a comprehensive systematic review

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Introduction Tuberculum sellae meningiomas (TSMs) are formidable tumours due to their proximity to vital neurovascular structures. Although microscopic transcranial approaches (mTCAs) have traditionally been the preferred treatment choice, endoscopic endonasal approaches (EEAs) have emerged as a valuable option for managing TSMs. This systematic review evaluates the efficacy and safety of endoscopic surgery in treating TSMs, focusing on visual outcomes and complications.
Methods A systematic search on Medline, EMBASE, Cochrane, SCOPUS and Web of Science yielded studies on endoscopic TSM resection, meeting inclusion criteria. Outcomes encompassed visual improvements, complications (e.g., CSF leakage, visual loss, etc.), and mortality. Pooled data underwent meta-analysis with Revman 5. Risk of bias was assessed using the Newcastle-Ottawa Scale. Heterogeneity among studies was examined.
Results Encompassing 507 patients from 13 studies, endoscopic surgery displayed favourable visual outcomes, with an estimated 100% enhancement in visual function. Overall complications stood at 20.27%, where CSF leakage (12.7%) and meningitis (3.5%) prevailed. The mortality rate was 1.64%. Subgroup analyses unveiled outcome and complication disparities. Meta-analysis possessed a significant degree of hetereogeneity.
Conclusions This systematic review and meta-analysis underscore the favourable visual outcomes achieved through the procedure. The pooled data reveal a significant improvement in visual acuity and reduction in visual field defects, particularly evident in optic nerve sheath meningiomas. Additionally, the procedure's safety profile, as indicated by the low complication rate, further supports its efficacy. These findings contribute to a deeper understanding of the visual outcomes associated with endoscopic cranial meningioma resection, potentially aiding clinicians in making informed decisions regarding optimal treatment approaches.

52 The potential of mental rehearsal in surgical education: a comprehensive review of the evidence

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Introduction Mental rehearsal (MR), the deliberate practice of skills specific to a procedure, has been successfully used in sports and music for decades, however its integration in surgery remains limited. This comprehensive narrative review aims to explore the efficacy of employing MR as a preparatory tool before surgical procedures, and whether it improves the task performance of operators and operating teams.
Methods A narrative review was conducted to identify relevant articles on the topic of MR in surgery up to March 2023 using Medline/PubMed.
Results This comprehensive review provides scientific insight into the mechanisms of MR and describes in detail the implementation methodology in surgery described in the current literature. The majority of evidence demonstrates MR to be a beneficial adjunct to other forms of training. Moreover, evidence supports MR as a low-cost and valuable learning technique. Many questions remain regarding the optimal duration and nature of the MR sessions, how to accommodate the surgeon's experience, the optimal number of repetitions, and how to address the abilities of the participants to perform mental imagery. Most studies have diffused aims and descriptions of the specific intervention components. Several studies applied MR in demanding real-life surgical environments and demonstrated feasibility in surgery.
Conclusions Preliminary findings suggest that MR can improve the performance of operators and operating teams as an efficient adjuvant to traditional methods of surgical skills training. More work is needed moving forward about how these interventions can be best implemented and utilised in routine clinical practice.

61 Bilateral breast calciphylaxis: a case report and literature review

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Introduction Calciphylaxis is a rare condition with an incidence of 0.4%–4% in patients on renal dialysis and a mortality rate up to 50% annually. It commonly affects the skin, particularly the thigh and abdomen with the breast being a rare site of this condition.
Case Presentation A 66-year-old female, with a background of renal failure on regular haemodialysis, hypertension, atrial fibrillation and hypercholestermia, presented with bilateral painful breast lumps which have been present for 7 months, however have progressively become worse with black skin discoloration and ulceration. Clinically, she had ptotic breasts with 14cm ill-defined symmetrical mass within both breasts with an 8cm area of well demarcated full thickness skin necrosis on the left and a 5cm superficial necrotic area on the right. Her mammogram showed extensive vascular calcification. Subsequently, she was managed with painkillers, sodium thiosulphate and bilateral simple mastectomies.
Discussion Calciphylaxis is a progressive inflammatory process characterised by the calcification of the arteries which leads to ischemia and tissue necrosis. It can affect the skin, kidneys, skeletal muscle, and less frequently, the heart, brain, gastrointestinal tract and the breasts. Breast calciphylaxis can be diagnosed by mammography +/- biopsy. Its management is still debatable and depends on the extent the breast tissue is affected. It ranges from conservative management with sodium thiosulphate and dialysis to debridement and mastectomies.
Conclusions Breast calciphylaxis should be considered as a differential diagnosis of painful ulcerated breast lesions particularly in individuals with end stage renal disease on dialysis.

65 Optimal venous anastomoses in traumatic lower limb free flap reconstruction: evaluating single vs dual approaches

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Introduction This multi-centre study aimed to compare the outcomes of traumatic lower limb free flap surgery with one vs two venous anastomoses.
Methods A retrospective analysis was conducted on patients who underwent traumatic lower limb free flap surgery between January 2011 to December 2021 in hospital 1 and between June 2020 to April 2023 in hospital 2. The primary outcome assessed was the need for return to theatre due to venous compromise. Secondary outcomes included microvascular thrombosis, flap failure and salvage rates.
Results Hospital 1 included 775 total lower limb free flaps (728 one vein and 47 two vein cases). Hospital 2 included 178 total free flaps (93 one vein and 85 two vein cases). The total free flap failure rate was 4.4% in hospital 1 and 5.6% in hospital 2. In hospital 1, the total return to theatre rate was 9.3% and 5.5% due to venous compromise alone in the one-vein group, while none occurred in the two-vein group. Flap salvage was successful in 75% and failure occurred in 25% of these cases. In hospital 2, the total return to theatre rate was 13.5%, 5.4% in the one-vein group and 4.7% in the two-vein group due to venous compromise alone. Flap salvage was successful in 80% and 50% in the respective groups that returned to theatre.
Conclusions These findings indicate that a single venous anastomosis may be a viable option for acute traumatic defects requiring lower limb free flap reconstruction, potentially reducing surgical complexity without compromising overall outcomes.

70 Current state of minimally invasive general surgical practice in Africa: a systematic review and meta-analysis of the laparoscopic procedures performed and outcomes

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Introduction Minimal access surgery (MIS), which includes laparoscopy and robotics, has significantly improved general surgery (GS) practice globally. While robot-assisted GS is yet to be adopted in the majority of Africa, laparoscopic surgery has been utilised to transform the conventional surgical approach. This study aims to review the laparoscopic GS procedures performed and identify the prevalences of conversion to open surgery, morbidity and mortality in Africa.
Methods PubMed, Google Scholar and AJOL were searched using keywords combined with the boolean operators, identifying 3,063 publications which were subjected to title and full text screenings. 24 studies published across eight African countries met the inclusion criteria and were included in the final qualitative synthesis.
Results 2,309 procedures were performed in an 18-year period (2005–2023). The major procedures performed were cholecystectomy, 874 (37.85%); appendectomy, 824 (35.69%); and diagnostic laparoscopy, 333 (14.42%). The meta-analysis revealed a conversion rate of 4% [95% CI: 3, 6]. Intraoperative haemorrhage (22.64%), adhesions (20.75%) and equipment failure (16.98%) were the major indications for conversion. Laparoscopic hernia repair and diagnostic laparoscopy with conversion rates of 7.14% and 1.68% were the most common procedure converted to open surgery, and the most successfully completed procedure, respectively. Port site infection and haemorrhage were the major causes of morbidity. Morbidity and mortality rates recorded were 7% [95% CI: 5, 9] and 0.27% [95% CI: 0, 2], respectively.
Conclusions The adoption of MIS has revolutionised GS practice in Africa. MIS enhances patients' perioperative experiences and improves outcomes, presenting a pivotal opportunity for the advancement of global surgery.

73 Real-time assessment of surgical team performance in operating rooms: a systematic review on state-of-the-art

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Introduction The aim of this systematic review is to summarise and discuss the state-of-the-art tools available to assess real-time surgical team performance and identify possibilities and limitations to them.
Methods An integrative review (Whittemore and Knafl (2005)) was performed according to PRISMA guidelines using PubMed and Cochrane databases, with the search dates January 2017 to January 2022. Inclusion criteria included technology-based tools, non-invasive in nature, trials in controlled lab environments, results published within the last 5 years, and studies not in English were excluded.
Results 34 papers met the inclusion criteria, and most tools were still in an experimental state within controlled environments. Various technical tools have been used to measure a surgeon's cognitive load while operating, including eye-tracking gear, heart rate variability (HRV) analysis, motion sensors, wearables, audio-video feedback, sensor-based recordings, skin conductance and thermal activity in 14 papers. Most studies failed to predict its inclusion in real-life settings, projections for clinical utility were reasonable in nine papers. Unlike previous non-technical assessments, the advent of real-time technical tools looks promising.
Conclusions The research field of technical tools to assess real-time surgical performance remains small at present, and currently has focused only on individual surgeons. While providing some promising initial findings, they fail to consider the multi-disciplinary operating team. Consensus is yet to be established about how the stress factors on individual operating team members contribute to the overall team performance. Hence, further research needs to be done to fully understand this relationship and address the factors that would affect future definitions.

75 Beyond the scalpel: lymphedema considerations in breast cancer treatment

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Introduction Breast cancer, a pervasive malignancy among women globally, often necessitates surgery as a primary therapeutic avenue. Integral to these surgical procedures is the practice of lymph node dissection, a critical step for determining disease extent and staging. The objective of this review was to investigate the relationship between lymph node dissection and the consequential risk of lymphedema in breast cancer patients.
Methods This involved a retrospective analysis of 270 patients who had been referred to a specialised lymphedema community service over the span of five years, from June 2018 to June 2023.
Results Most patients had invasive ductal carcinoma (76.7%), with different cancer grades and receptor statuses. Surgical interventions mainly included wide local excision (66.3%), mastectomy (28.9%), and therapeutic mammoplasty (3.1%). Sentinel lymph node biopsy was performed in 48.1%, while 50.4% had axillary node clearance. Nearly all patients received radiotherapy (92.6%), additional therapy was also implemented such as chemotherapy (29.3% adjuvant and 23.7% neoadjuvant), endocrine (77.8%) and anti-Her2 therapy (18.9%). Surprisingly, almost half of the patients who developed lymphedema had fewer than 5 lymph nodes excised during surgery. Lymphedema locations varied but predominantly affected the breast (41.9%), arm (33.3%) or both (15.2%).
Conclusions This review has illuminated that even in cases where a relatively limited number of lymph nodes are excised, the risk of lymphedema remains significantly elevated. These findings accentuate the importance of judiciously considering lymphedema risk during the planning of breast cancer surgeries and necessitate the stringent implementation of preventive measures to effectively manage lymphedema among breast cancer patients.

85 Air vs fluorinated gas tamponades in pars plana vitrectomy for rhegmatogenous retinal detachment: systematic review and meta-analysis

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Introduction To compare air vs gas tamponades in pars plana vitrectomy (PPV) for rhegmatogenous retinal detachment (RRD).
Methods A systematic review and meta-analysis were performed as per the PRISMA Guidelines, and a search of electronic information was conducted to identify all comparative studies of air vs gas tamponades in PPV for primary RRD. The protocol was registered a priori (PROSPERO CRD42022356382). Surgical success and re-detachment rate were primary outcome measures. Secondary outcomes included best-corrected visual acuity (BCVA), intraocular pressure (IOP), complications and predictive factors of surgical success. Fixed effects model was used for the analysis.

Results Seven studies enrolling a total of 2,190 eyes from 2,172 patients were identified. No statistically significant difference was noted between air and gas tamponade in primary surgical success (OR=1.51, p=0.12) and retinal re-detachment (OR=1.42, p=0.25). However, the final surgical success rate was significantly higher in the gas tamponade group (OR=0.47, p≤0.00001). For secondary outcomes, the air group had similar results compared with the gas group in the changes of BCVA and IOP and overall complications, including cataract, ERM, proliferative vitreoretinopathy, macular hole and pucker formation. Potential predictive factors of surgical success included the choice of tamponade and location of RRD.
Conclusions Air and fluorinated gas tamponade are comparable for patients with primary RRD undergoing PPV as both were equivalent in primary surgical success and re-detachment rates. However, the results showed gas tamponade had significantly favourable results in the final surgical re-attachment.

113 Evaluating the surgical outcomes of robot-assisted simultaneous resection of colorectal carcinoma with synchronous liver metastasis vs laparoscopic approach: a systematic review

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Introduction Colorectal carcinoma is the third most common cancer in males and second in females. 15–42% of patients present with synchronous primary colorectal adenocarcinoma and liver metastasis, and surgery remains the only chance of long-term survival. Simultaneous resection confers benefits such as eradication of tumour burden in one procedure, overall shorter procedure time, reduced hospital stay and reduction in the use of health care services. Robotic surgery can ameliorate the technical disadvantages of a laparoscopic approach in complex metastatic surgical resections. The aim of this study was to review the literature on the feasibility and surgical outcomes of simultaneous robot-assisted surgical resection and compare it to the laparoscopic approach.
Methods A systematic search of PubMed, Embase, Ovid and Cochrane library was done in January 2022, for relevant studies. Patient demographics, primary (blood loss, hospital stay, operation time, postop complications and mortality) and secondary (overall and disease-free survival rate) outcomes data were extracted and statistically analysed. The study was performed under PRISMA guidelines.
Results 19 articles (n=262) met the inclusion criteria and were selected. The patients who had robotic surgery had shorter hospital stays (95% CI, p=0.001). The operating time for robotic surgery, as expected was much longer (95% CI, p=0.013). And patients who underwent laparoscopic surgery had less intraoperative blood loss (95% CI, p=0.003).
Conclusions Robotic-assisted simultaneous resection of colorectal liver metastases can be a feasible option in the hands of experienced surgeons and after careful patient selection. More randomised controlled trials are needed for a robust meta-analysis.

121 Prehospital tranexamic acid in trauma patients: a systematic review and meta analysis of randomised controlled trials

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Introduction Prehospital tranexamic acid (TXA) may hold substantial benefits for trauma patients; however, the data underlying its efficacy and safety are scarce.
Methods We searched PubMed, Embase, the Cochrane Library, and ClinicalTrials.gov from inception to July 2023 for all randomised controlled trials (RCTs) investigating prehospital TXA in trauma patients as compared to placebo or standard care without TXA. Data were pooled under a random-effects model using RevMan 5.4 with risk ratio (RR) and mean difference (MD) as the effect measures.
Results A total of four RCTs were included in this review. Regarding the primary outcomes, prehospital TXA reduced the risk of 1-month mortality (RR 0.82, 95% CI 0.70–0.97) but did not increase survival with a favourable functional outcome at 6 months (RR 1.00, 95% CI 0.93–1.09). Prehospital TXA also reduced the risk of 24-hour mortality but did not affect the risk of mortality due to bleeding or traumatic brain injury. There was no significant difference between the TXA and control groups in the incidence of RBC transfusions or the number of ventilator and ICU-free days. Prehospital TXA did not increase the risk of adverse events except for a small increase in the incidence of infections.
Conclusions Prehospital TXA is useful in reducing mortality in trauma patients without a notable increase in the risk of adverse events. However, there was no effect on the 6-month favourable functional status. Further large-scale trials are required to validate the aforementioned findings.

130 Is MIDCAB the future of beating heart cardiac surgical interventions for adults with coronary heart disease? A systematic review

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Introduction The rapidly multiplying incidence of coronary heart disease has continued to present a challenge to health care systems globally. On pump coronary artery bypass grafting remains the gold standard for coronary revascularisation, however, there is a growing demand for off-pump (OPCAB) and minimally invasive procedures, such as minimally invasive direct coronary artery grafting (MIDCAB). This review assesses the short-term surgical outcomes of MIDCAB vs OPCAB to determine the superior technique, while assessing wound infection rates and cerebrovascular accident incidence.
Methods A systematic review was carried out in accordance with PRISMA 2020 guidelines. A total of 188 citations were collected from PubMed, CENTRAL and OVID databases. Once assessed through screening, 12 studies were examined in this review. The retrospective data was extracted using the Covidence 2.0 extraction tool. Once data on the study characteristics, patient demographics, primary outcomes of in hospital mortality and ICU stay.
Results A total of 5,562 patients across 12 studies were analysed, consisting of 2,101 patients who underwent MIDCAB and 3,461 patients who underwent OPCAB. There were no statistically significant findings between the two groups in terms of in-hospital mortality, ICU stay duration, wound infection rate and cerebrovascular accident incidence. The MIDCAB group showed a lower in-hospital mortality rate and ICU Stay duration. The OPCAB group showed a lower rate of wound infection and cerebrovascular accident incidence.
Conclusions This study concluded that MIDCAB offers favourable short term surgical outcomes compared to OPCAB. However, MIDCAB precipitates a higher risk of wound infection and cerebrovascular accidents than OPCAB.

150 Do the current predeployment training programmes of military surgeons enable them to perform effectively on placement to active warzones?

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Introduction The increasing number of complex worldwide conflicts has lead to an exponential rise in the number of injuries sustained to both combatants and civilians in affected regions across the globe. Deployment of armed forces to deal with these issues has followed suit yet the situation places particular stresses on the surgical proficiency of those deployed to active combat areas.
Aims This systematic review aims to determine to what extent the current iteration of training programmes enables military surgeons

to perform at maximum efficiency on deployment to areas classed as warzones.
Methods Several scientific databases were used in gathering appropriate papers, each having the same number of inclusion/exclusion criteria and similar search terms such as 'militar*' and 'surger*'.
Results Four papers were chosen; a mix of qualitative and quantitative data was extracted from them.
Conclusions Surgeons of the current military generation are equipped to deal with the case work deployment entails; however, evidence suggests a continued lack of resources – equipment, academic support, and personnel – will have adverse effects on efficacy in future. The use of a six-week (+) rotation to an area of high traumatic case load and case mix, was a particularly repeated aspect that all bar one paper endorsed; all papers endorsed the prospect of a 'war surgeon' specialty being established.

153 Transforming surgical practice: innovations and trends in the UK - systemic analysis

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Introduction The UK's healthcare system is in the midst of a transformation driven by surgical innovation and technological advancements. This systematic analysis aims to explore the current trends shaping the future of surgery in the UK, considering the impact of technologies like robotic-assisted surgery, minimally invasive techniques and artificial intelligence. Ethical considerations and patient-centred care are integral aspects of this analysis.
Methods A rigorous search strategy was employed, encompassing reputable databases such as PubMed and Google Scholar. Inclusion criteria focused on articles published in English, within the last decade, and directly related to surgical innovation and technology trends within the UK. A systematic screening and selection process, including quality assessment, ensured the reliability of the selected articles.
Results The analysis revealed a dynamic landscape within the UK's surgical domain. Robotic-assisted surgery is widely utilised, demonstrating improved outcomes across various specialties. Minimally invasive techniques are standard practice, contributing to cost savings and faster recovery times. Artificial intelligence is gaining momentum, enhancing surgical decision making and imaging. Patient-centred care and shared decision making are increasingly emphasised, promoting a collaborative approach.
Conclusions The UK's commitment to surgical innovation and technology showcases its leadership in healthcare. These advancements hold promise for improved patient outcomes but also pose ethical challenges and access disparities. Future directions call for continued research, policy development, and a focus on equitable access, ensuring that surgical innovations benefit all citizens. This analysis provides a comprehensive understanding of the UK's surgical landscape, emphasizing excellence, inclusivity, and ethical integrity in shaping the future of surgery.

157 Systematic review of localisation techniques for non-palpable breast tumours

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Background Due to improvement in screening, there is increase in number of small non-palpable or hardly palpable lesions. This situation calls for adaptation of surgical approaches where breast conserving surgery is considered. New inventions and technologies are bringing new possibilities of localisation of non-palpable lesion in breast. This article is to summarise the available methods with their pros and cons.
Methods Systematic review of Pubmed and Embase database was performed. 40 major studies and articles were selected and appraised to compare different localisation techniques for non-palpable breast tumours. These findings were compared in discussion during webinar led by the Royal College of Surgeons Edinburgh.
Results At present the most available and used methods are wire localisation, localisation with radioactive colloid or seed, localisation using magseed, localisation using reflector of electromagnetic wave and localisation using radiofrequency identification tag. Very specific and different technique using carbon mapping is commonly used in central Europe.
Conclusions All the above-mentioned methods have their pros and cons. Majority of the non-wire localisation techniques offer time flexibility, which is at the time of health systems recovering from COVID-19 pandemic invaluable. The main disadvantage of new methods is initial prize, which would decrease should these methods come more in use. Worldwide there are lots of institutions who would welcome colleagues to show them the methods they use.

166 Local vs general anaesthesia for transcatheter aortic valve implantation (TAVI): a systematic review, meta-analysis and trial sequential analysis of randomised and propensity-score matched studies

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Introduction Transcatheter aortic valve implantation (TAVI) has become standard for severe aortic stenosis, especially high-risk patients. Choosing between general and local anaesthesia (LA) remains uncertain. This review investigates the safety and efficacy of LA vs GA by comparing 30-day mortality rates, in-hospital stays, bleeding/transfusion incidents, myocardial infarction, paravalvular regurgitation, respiratory complications, renal complications, stroke rate, vascular complications, and wound infections.
Methods We used the updated Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) statement guidelines to guide the conduct of this systematic review and meta-analysis. We performed a comprehensive literature search using PubMed, Scopus, Embase, and CENTRAL from inception until April 2023.
Results Our findings reveal significant benefits of LA over GA, including lower 30-day mortality rates, shorter in-hospital stays, reduced bleeding/transfusion incidents, and fewer respiratory complications. However, myocardial infarction, paravalvular regurgitation, renal complications, stroke rate, vascular complications, and wound infections were comparable between the two anaesthetic approaches.
Conclusions Our findings reinforce prior evidence, presenting a compelling case for LA's safety and efficacy. While patient preferences and clinical nuances must be considered, our study propels the discourse towards a more informed anaesthesia approach for TAVI procedures.

173 Connectome modifications and transcranial magnetic stimulations as neurorehabilitation for stroke patients: a scoping review protocol

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Introduction Currently, cerebrovascular accidents, denoted stroke, are the third most prevalent aetiology of morbidity globally. Strokes

typically cause direct or indirect damage to peri-infarct regions and white matter tracts, where a plethora of neurological sequelae ensue. Connectomics is a developing analytical paradigm that may offer insight into the neuronal remodelling throughout post-stroke recovery. Transcranial magnetic stimulation (TMS), a neurorehabilitative treatment, aims to target connectome changes, with preliminary results indicating functional gains. However, the relationship between TMS therapy and connectome modulation has not been thoroughly investigated. The provided protocol elucidates the systematic framework for a scoping review, to assess the role of neurorehabilitative techniques such as TMS in modifying the connectome for improved stroke patient recovery.

Methods and Results The methodology consists of five stages, consistent with Arksey and O'Malley's framework. Using the PICO model, the research question, inclusion/exclusion criteria and search methods were developed. Electronic Medical Databases (Medline OVID, Cochrane Library, Embase, PubMed, Scopus) will be searched for relevant studies. The PRISMA-ScR framework is used to guide the reporting process. Quantitative and qualitative data will be extracted, including key information such as study type, demographics, methods used to assess TMS intervention and connectome modifications. Data will be presented discursively, supported with statistics and graphs where appropriate. No ethical approval is required.

Conclusions The results will be useful to healthcare professionals involved in stroke care, evaluating current use and potential benefits of neuromodulation for stroke recovery while highlighting gaps in knowledge with the aim of propelling further research.

174 Aortic root replacement vs patch repair for aortic valve endocarditis with root abscesses: a systematic review and meta-analysis of short- and long-term outcomes

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Background Complex aortic valve infective endocarditis (IE) mandates surgical intervention, with debate on the optimal approach. This study aims to compare immediate and long-term outcomes of aortic root replacement (ARR) and patch repair (PR) in aortic valve endocarditis with concurrent root abscess.

Methods We comprehensively searched electronic databases up to April 2023 for studies reporting ARR and PR outcomes in infective endocarditis with aortic root abscess. Extracted data included short- and long-term mortality, re-operation rates, permanent pacemaker implantation, and pooled incidence of mortality, recurrence, and reoperation.

Results 32 studies (1,989 ARR, 565 PR patients) met criteria. Short-term mortality rates showed no significant difference (OR: 1.12, 95% CI: [0.70, 1.80], I2=34%). However, PR group exhibited superior long-term survival (HR: 0.69, 95% CI: [0.52, 0.90], I2=25%). PR group had a significantly increased long-term re-operation rate (HR: 1.79, 95% CI: [1.11, 2.88], I2=0%). Post-surgery permanent pacemaker (PPM) need was slightly lower in PR, but not statistically significant (OR: 0.62, 95% CI: [0.34, 1.12], I2=0%). Meta-analysis revealed documented IE recurrence rates of 5% after ARR and 11% after PR.

Conclusions Short-term mortality rates do not differ significantly between ARR and PR. However, PR leads to superior long-term survival. Conversely, PR is associated with a higher long-term re-operation rate and similar PPM need. ARR may offer protection against future IE recurrence.

176 A scoping review of clinical presentations and outcomes in patients with concomitant COVID-19 infection and acute mesenteric ischaemia

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Introduction COVID-19 infection confers an increased risk of coagulation dysfunction. This gives rise to thromboembolism in many sites, including the bowels. This study investigates the clinical presentation and outcome in patients presenting with concurrent COVID-19 infection and gastrointestinal tract ischaemia from current literature. Furthermore, differentiation and comparison will be drawn between those with arterial mesenteric thrombosis and venous mesenteric thrombosis.

Methods A systematic search was undertaken on EMBASE, PubMed and MEDLINE. Two independent reviewers screened titles, s and full-text articles according to the inclusion criteria and extracted relevant data. Data analysis was conducted using Excel.

Results Forty-one studies were included in the data analysis, yielding a total of 44 patients. The number of patients who had exclusively arterial thrombosis and exclusively venous thrombosis in the mesenteric vessels were 26 and 16, respectively. Two patients were found to have both arterial and venous thrombosis. The survival rate in patients with only arterial thrombosis was 38.5%. In contrast, the survival rate increased to 68.8% in patients with only venous thrombosis. Twelve patients (29.3%) experienced respiratory symptoms in the community prior to onset of gastrointestinal symptoms and five patients (12.2%) developed gastrointestinal symptoms during their inpatient stay for COVID-19 pneumonitis.

Conclusions Bowel ischaemia presents a clinical challenge to diagnose due to its non-specific symptoms. Clinicians should recognise that COVID-19 can progress into a systemic illness, thus preventing the diagnostic focus from being solely put on the respiratory aspect.

182 Laparoscopic ultrasonography during laparoscopic cholecystectomy: systematic review

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Introduction To investigate the potential of laparoscopic ultrasonography (LUS) as a replacement for intraoperative cholangiography (IOC) in the context of laparoscopic cholecystectomy.

Methods PubMed, Web of Science, Cochrane Library and Scopus were searched using the keywords 'laparoscopic ultrasonography' and 'laparoscopic cholecystectomy'. We included all types of studies that mentioned our topic and provided us with data about the identification of biliary anatomy and variations, reports of laparoscopic ultrasound used during cholecystitis, common bile duct stones identification and criteria to evaluate LUS accuracy.

Results This systematic review assessed LUS and IOC techniques in cholecystectomy. IOC showed higher failure rates due to common duct catheterisation challenges, while LUS had lower failure rates, often linked to factors like steatosis. Cost-effectiveness comparisons favoured LUS over IOC, potentially saving patients money. LUS procedures were quicker due to real-time imaging, while IOC required more time and personnel. BDIs were discussed, highlighting LUS limitations in atypical anatomies. LUS aided in diagnosing crucial conditions, emphasizing its relevance post-surgery. Surgeon

experience significantly impacted outcomes, regardless of the technique. LUS's learning curve was steeper than IOC's, with proficient LUS users adjusting practices and using IOC selectively.
Conclusions Highlighting LUS's benefits and limitations in cholecystectomy, we stress its value in complex anatomical situations. LUS confirms no common bile duct stones, avoiding cannulation. LUS and IOC equally detect CBD stones and visualise the biliary tree. LUS offers safety, speed, cost-effectiveness and unlimited use. Despite costs and learning curve, its advantages endure. With probe advancements, LUS could surpass IOC; modern probe studies are essential for validation.

183 The use of lidocaine infusion in laparoscopic cholecystectomy: an updated systematic review and meta-analysis

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Introduction Laparoscopic cholecystectomy is considered one of the most common abdominal surgical procedures. And numerous techniques have been adapted to decrease postoperative pain. However, the efficacy of IV lidocaine in managing postoperative pain after LC is still controversial according to many recent studies. We aim to detect the effectiveness of IV lidocaine compared to other medications in controlling postoperative pain.
Methods PubMed, Scopes, Web of Science and Cochrane Library were searched for eligible studies from inception to June 2023 and a systematic review and meta-analysis were done.
Results According to eligibility criteria 14 studies (898 patients) were included in our study. The pooled results of the included studies showed that the pain score after 6, 12 and 24 hours after the surgery was significantly lower in those who received IV lidocaine as a painkiller (VAS 6H, MD=-1.20, 95% CI=-2.20, - 0.20, p=0.02; I2=98%) and (VAS 24H, MD=-0.86, 95% CI=-1.48, -0.24, p=0.007; I2=92%). In addition to that, IV lidocaine is associated with a significant decrease in the opioid requirement after the surgery (opioids requirements, MD=-29.53, 95% CI=-55.41, -3.66, p=0.03; I2=98%). However, there was no statistically significant difference in the incidence of nausea and vomiting after the surgery between the two groups.
Conclusions Lidocaine infusion in laparoscopic cholecystectomy is associated with a significant decrease in postoperative pain and in the opioid requirements after the surgery.

190 Is it the time for the sun to set on the unoperated obstructed cancer colon? Updated systematic review and meta-analysis for the management of obstructed cancer colon

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Introduction Emergency surgery is still the standard of treatment for obstructed cancer colon with a lot of controversial studies about the long-term oncological outcomes after using a stent as a bridging therapy. Our primary outcome aim is to compare the short and long-term oncological outcomes for stent as a bridging therapy and emergency surgery (ES) for obstructed cancer colon, and the secondary outcome is to compare the complication rate between the two modalities.
Methods Medline, Embase and Cochran were searched for all eligible studies. A systematic review and meta-analysis were done.
Results A total of 43 studies (12 RCTs) with 33,273 patients were included in our study. Those who had a stent as a bridging therapy for operation have better overall survival (5-year OS: RR, 1.15; 95% CI, 1.04, 1.27, p=0.007) and disease-free survival (5-year DFS: RR, 1.08; 95% CI, 1.01, 1.16, p=0.02) in comparison to those who had ES. In addition to that, stent groups have lower incidence of morbidity (RR, 0.76; 95% CI, 0.66, 0.88, p=0.0002) and short-term mortality (RR, 0.66; 95% CI, 0.53, 0.82, p=0.0002). Moreover, ES is associated with a higher rate of stoma formation and conversion into open.
Conclusions With better survival and lower incidence of morbidity, stenting as a bridging therapy for obstructed cancer colon offers an excellent alternative to emergency surgery.

229 Comparative analysis of acellular dermal matrices in implant-based breast reconstruction: a systematic review and network meta-analysis

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Introduction This study aimed to compare the operative success of different cellular dermal matrices (ADMs) that are commonly used in women undergoing implant-based breast reconstruction. The primary outcomes assessed were short and long-term complications, implant failure, infections, and patient quality of life.
Methods We conducted a systematic search of Ovid, MEDLINE, Embase, CENTRAL and CDSR databases according to the PRISMA guidelines, focusing on women undergoing implant-based breast reconstruction with FlexHD, AlloDerm, FlexHD, Bovine, or Porcine ADMs. A network meta-analysis was also employed.
Results A total of 51 studies were captured by the search, of which 27 were included in the network meta-analysis. Alloderm was the most used ADM (54%), followed by Porcine (17%), Bovine (11%), DermAcell (11%), and FlexHD (7%). The mean follow-up was 27.8 months.

The complication rates varied. Porcine ADMs had the highest rate of seroma formation (10.3%), Bovine ADMs had the highest rate of haematoma formation (35.5%), and AlloDerm FD ADMs had the highest rate of wound dehiscence (3.1%). Capsular contracture ranged from 0.0% to 2.5%, which was the highest among Porcine ADMs. Rotation was not reported in any of these studies. Implant failure was the highest in AlloDerm FD ADMs (11.8%), followed by Porcine ADMs (11.2%). Infections were the most common in AlloDerm FD ADMs (11.8%) and Porcine ADMs (11.2%).
Conclusions Complication rates varied by ADM subtype, informing clinical decisions and guiding future practices. A comprehensive understanding of the effectiveness of ADM among subtypes requires further research on long-term outcomes and patient quality of life.

260 A scoping review protocol of the current state of video in the use of training of cardiac surgeons in LMICS protocol

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Introduction The lack of quality cardiac surgery training programs in low- and middle-income countries (LMICs) has been widely recognised as a significant barrier to delivering high-quality and accessible cardiac surgical care. The primary aim of the review is to assess the current use of video-related modalities in surgeon training in LMICs. Secondary

aims include identifying potential use of video-related modalities in cardiac surgeon training in LMICs and identifying barriers to use of video-related modalities in cardiac surgeon training in LMICs.
Methods This protocol has been designed in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews guidelines (PRISMA-ScR). A systematic search with 'low-and-middle-income countries', 'video technologies', 'education and cardiac surgery' will be carried on SCOPUS, OVID, EMBASE and MEDLINE databases. Two independent assessors will screen studies using predetermined criteria, with conflicts resolved by a third party. Data will be summarised, charted, and organised into tables, followed by narrative analysis.
Results The scoping review will comprehensively examine video use in surgical education in low- and middle-income countries. It will uncover knowledge gaps, analyse trends in video-based interventions and assess the impact of improved surgical education in LMICs. A country-specific approach will categorise outcomes into knowledge acquisition, surgical skill development, patient outcomes and trainee satisfaction for a deeper understanding of diverse interventions.
Conclusions This review will offer a comprehensive analysis of video usage in cardiac surgery training in LMICs and catalyse cost-effective dissemination of surgical expertise, ultimately enhancing training and outcomes.

263 Modern surgery and endoscopic procedures for gastro-oesophageal reflux in lung transplant recipients: a systematic review and meta-analysis

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Introduction Gastro-oesophageal reflux disease (GORD) is a major cause of morbidity and rejection following lung transplantation. Interventional treatment of GORD is a widely accepted management strategy for GORD in the context of lung transplant surgery. We conducted a systematic review of all modern interventions to treat GORD following lung transplantation to identify the optimum management strategy for these patients.
Methods We conducted a literature search of MEDLINE, Embase and the Cochrane library, using a tailored search strategy, from inception until 18 October 2022. Articles reporting outcomes of Anti-Reflux Surgery (ARS) following lung transplantation were included. Two independent reviewers performed screening, full text review and data extraction using the COVIDENCE platform. The study protocol was registered on PROSPERO (CRD42022379748).
Results The screen identified 236 studies, with 20 deemed suitable for inclusion. These studies included a total of 975 patients. The procedures described included fundoplication (n=18), (Nissen, Toupet, Dor), Stretta (n=1) and LINX (n=1) procedures. Follow-up ranged from 50 days to 6.9 years. 6 studies reported FEV1 outcomes which all demonstrated stable or improved lung function following ARS. From identified literature, 9 papers reported survival outcomes with 4 studies demonstrating improved survival following ARS.
Conclusions ARS appears to be an effective management strategy for GORD in the context of lung transplantation. However, modern alternatives, such as STRETTA and LINX require further clinical evaluation to assess their impact on lung function and survival.

269 A systematic review of long-term outcomes following Parsonage Turner Syndrome and an evidence-based algorithm to optimise patient management

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Introduction This systematic review aims to analyse the long-term outcomes reported in adult patients presenting with Parsonage Turner Syndrome (PTS) and to design an evidence-based algorithm to optimise management of PTS.
Methods A comprehensive literature search was performed by a medical librarian using the MEDLINE, PubMed and the Cochrane Library Articles that met the eligibility criteria of articles assessing incidence, management and outcomes of patients presenting with PTS. Analysis was conducted on the time to presentation, functional deficits at presentation, interventions, and long-term functional outcomes. All relevant information was collected by two independent reviewers.
Results The systematic review identified 25 studies involving 927 patients with PTS. The average duration of symptoms prior to presentation ranged between 1 month to 24 months. 348 cases were managed conservatively with corticosteroids, IV immunoglobulin, pain management and physiotherapy. Surgical interventions were performed in 47 patients and included neurolysis, decompression, nerve transfers and diaphragmatic plication. Symptom duration prior to surgical intervention ranged from 6 to 28 months. Overall long-term outcomes were reported at 5 to 25 months in 50% of patients with 60% reporting residual neuropathic pain and 70% reporting incomplete return of motor function.
Conclusions Lack of early recognition of PTS and prompt referral to nerve specialists remains a problem. While surgical intervention (nerve transfers) is now supported for incomplete recovery at three months, long term outcomes following surgical interventions are underreported. We have devised an evidence-based algorithm to optimise patient management following this rare entity.